



Report Date: March 05, 2020

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Report Number: 144618

REGISTERED MAIL

Chemtrade Electrochem Inc.

100 Amherst Ave
North Vancouver, BC
V7H 1T9

Dear Chemtrade Electrochem Inc.

Re: Warning Letter, Permit, 18

On January 29, 2020, Ministry of Environment, Environmental Protection Division staff conducted an inspection under *Environmental Management Act (EMA)*, 18. The inspection determined that Chemtrade Electrochem Inc. is out of compliance with its Permit 18, and the section(s) listed below. This Warning Letter lists the compliance verification information contained below.

Failure to comply with the requirements set out in your Permit is an offence under the *Environmental Management Act (EMA)*. Section 120(6) of *EMA* states as follows:

120(6) A person who, holding a permit or approval issued to the person under this Act to introduce waste into the environment, introduces waste into the environment without having complied with the requirements of the permit or approval commits an offence and is liable on conviction to a fine not exceeding \$1 000 000 or imprisonment for not more than 6 months, or both.

It should also be noted that, as an alternative to prosecution of the offence referenced above, the Ministry may initiate action to impose an administrative penalty against Chemtrade Electrochem Inc.. *The Administrative Penalties Regulation (EMA)* (B.C. Reg. 133/2014) (APR) was brought into force in 2014. The APR describes the prescribed provisions of the *EMA* as well as that of specified regulations under which administrative penalties can be assigned. Section 12(5) of the APR states as follows:

12(5) A person who fails to comply with a requirement of a permit or approval issued or given under the Act is liable to an administrative penalty not exceeding \$40 000, unless the requirement the person failed to comply with is also a prescribed provision of the EMA or the regulations that is subject to a different maximum administrative penalty.

I request that Chemtrade Electrochem Inc. immediately implement the necessary changes or modifications to correct the non-compliance(s) listed above with the *Environmental Management Act*. Further, I request that Chemtrade Electrochem Inc. notify this office in writing, by email or letter within 30 days of this letter, advising what corrective measures have been taken, and what else is being done, to prevent similar non-compliances in the future.

Please submit your response to the Ministry's Compliance Mailbox at EnvironmentalCompliance@gov.bc.ca.

As a result of this Warning, this authorization will be prioritized for follow-up inspection. The corrective measures will be reviewed by an Officer as part of the next inspection.

Finally, if you fail to take the necessary actions to restore compliance, you may be subject to escalating enforcement action. This Warning Letter and the alleged violations and circumstances to which it refers, will form part of the compliance history of Chemtrade Electrochem Inc. and will be taken into account in the event of future violations.

**Ministry of Environment
and Climate Change
Strategy**

Compliance
Environmental
Protection Division

Mailing Address:
2nd Fl
10470-152nd St
Surrey BC V3R 0Y3

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Inspection Details:

Requirement Description:	<p>1. AUTHORIZED DISCHARGES. 1.1</p> <p>1.1.1: This section applies to the discharge of effluent from a process effluent, cooling water and domestic sewage. The site reference number for this discharge is E208263. 1.1.1 The maximum rate of discharge is 90,000 cubic metres per day.</p>
Details/Findings:	<p>Introduction: On January 29, 2020, Ministry of Environment and Climate Change Strategy (Ministry) Environmental Protection Officer Katelyn Dick and Officer Michael Jeffery (Officers) conducted an inspection of the Chemtrade Electrochem Inc. (Chemtrade) facility (Site), located in North Vancouver, BC to verify compliance with Permit 18 (Permit). The Permit authorizes the discharge of effluent to Burrard Inlet and to the land from a Chlor-Alkali Plant located at 100 Amherst Avenue, North Vancouver, British Columbia, subject to the terms and conditions of the Permit. The Permit was first issued on October 29, 1957, and last amended on January 19, 2018. Present during the inspection was Tony Gutenberg (EHS Regional Manager-Western Canada, Chemtrade) and Claudia Severin (Quality Systems Leader, Chemtrade). The inspection period covered by this report is from April 1, 2018, to December 31, 2019, and included the review of the following documents:</p> <p>- Quarterly Water Quality Data April 1, 2018 - December 31, 2019 (Quarterly Reports);</p> <p>Compliance Assessment: A review of the Quarterly Reports determined that there was one flow exceedance reported during this inspection period. A flow of 92,800 cubic meters per day was reported on September 30, 2019, which exceeds the Permit limit. All other daily flows were within the Permit limit for this inspection period.</p>
Compliance:	Out
Actions to be taken:	Ensure that the maximum permitted rate of discharge of 90,000 cubic metres per day is not exceeded.
Requirement Description:	<p>1. AUTHORIZED DISCHARGES. 1.1</p> <p>1.1.2: This section applies to the discharge of effluent from a process effluent, cooling water and domestic sewage. The site reference number for this discharge is E208263. 1.1.2 The authorized discharge period is continuous.</p>
Details/Findings:	The Site discharges effluent within the authorized discharge period.

Compliance:	In
Requirement Description:	<p>1. AUTHORIZED DISCHARGES. 1.1</p> <p>1.1.3: This section applies to the discharge of effluent from a process effluent, cooling water and domestic sewage. The site reference number for this discharge is E208263.</p> <p>1.1.3 The characteristics of the discharge must be equivalent to or better than:</p> <p>pH: MAXIMUM: 9 pH Units, MINIMUM: 6 pH Units. ; Total Suspended Solids: MAXIMUM: 130 mg/L, AVERAGE: 20 mg/L. ; Temperature: MAXIMUM: 32 Degrees Celsius. ; Total Chlorine Residual: MAXIMUM: 1 mg/L, AVERAGE: 0.2 mg/L. ; Total Copper: MAXIMUM: 0.02 mg/L. ; Total Nickel: MAXIMUM: 0.02 mg/L. ; Total Zinc: MAXIMUM: 0.02 mg/L. ; Toxicity, Threespine Stickleback 96-hour Single-concentration Test: MAXIMUM: 50% mortality., In a static bioassay, there must be no more than 50% fish mortality in 100% (undiluted) effluent within 96 hours.</p>
Details/Findings:	<p>A review of the Quarterly Reports determined that all reported pH, temperature, and total nickel data were within the Permit limits. However the following total zinc and total copper exceedances were reported:</p> <p>2018 Q4 Report - total copper: 0.047 mg/L collected on November 14, 2018 - total zinc: 0.034 mg/L collected on November 14, 2018</p> <p>Results have been rounded to match the significant digits stipulated in the Permit limits.</p> <p>Following all of these exceedances Chemtrade had further analysis conducted on duplicate samples taken on the same date as the original sample, and it is reported that the results of all the additional sample analyses were below the Permit limits.</p> <p>During the Site inspection, the Officers were informed that in-situ continuous monitoring devices are in place for monitoring of total suspended solids (TSS) and total chlorine residual. Grab samples are not collected for analysis of these parameters to be reported to the Ministry. Using a device to measure TSS and residual chlorine is not in accordance with the procedures described in the British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples (BC Field Sampling Manual), therefore compliance for these two characteristics of the discharge could not be determined for the inspection period.</p>
Compliance:	Out

Actions to be taken:	Ensure characteristics of the discharge are equivalent to or better than the authorized limits specified in the Permit. Sampling for TSS and total chlorine residual must be conducted in accordance with the BC Field Sampling Manual, in accordance with Permit Section
Requirement Description:	1. AUTHORIZED DISCHARGES. 1.1 1.1.4: This section applies to the discharge of effluent from a process effluent, cooling water and domestic sewage. The site reference number for this discharge is E208263. 1.1.4 The authorized works are septic tanks for domestic sewage, a chlorine stripper for direct contact cooling effluent, a submerged outfall and diffuser and related appurtenances approximately located as shown on the Site Plan.
Details/Findings:	<p>During the inspection the Officers observed the pipes containing the effluent used for cooling water (Photo 1) and various storm drains throughout the Site. The Site storm water collected from the various drains meets the cooling water, and then flows past the main effluent gate valve (Photos 2 & 3) to the outfall to be discharged to the Burrard Inlet (Photo 4).</p> <p>During the Site inspection the Officers observed the sodium bisulphite system which is used to treat the Site effluent (Photo 6). The chlorine stripper for direct contact cooling effluent was removed in 2010, and Mr. Gutenberg advised that it became obsolete with the Site's major renovation in that year. This change to the authorized works was documented in the previous inspection record IR-85448 from May 17, 2018, however as the Permit was not amended to reflect this change; therefore, Chemtrade is out of compliance with this Permit Section.</p> <p>In an email sent on February 12, 2020, the Permittee advised that the Site has eight septic tanks, and all the septic tanks but one (Photo 5) drain into the plant's effluent system and ultimately discharge into Burrard inlet. The Permittee confirmed that McRae's vacuum truck service is used to pump and haul the effluent from the one tank which is not connected.</p>
Compliance:	Out
Actions to be taken:	Submit a request to amend the Permit to reflect the changes that have occurred to the authorized works. Information on how to submit a permit amendment request can be found on the Ministry's website at: https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization
Requirement Description:	1. AUTHORIZED DISCHARGES. 1.2 1.2.1: This section applies to the discharge of effluent from the cathode washing operation. The site reference number for this discharge is E208289. 1.2.1 The average rate of discharge is 70 cubic metres per day.

Details/Findings:	A review of the Quarterly Reports determined that the cathode washing operation is no longer in service and has not been operational for a number of years. During the Site inspection the Permittee confirmed that the cathode washing operation has been decommissioned since the 1990's. The Site no longer uses asbestos in their process and there is no discharge from the cathode washing operation; therefore, compliance with this section is not applicable during the inspection period.
Compliance:	Not Applicable
Requirement Description:	1. AUTHORIZED DISCHARGES. 1.2 1.2.2: This section applies to the discharge of effluent from the cathode washing operation. The site reference number for this discharge is E208289. 1.2.2 The maximum rate of discharge is 140 cubic metres per day.
Details/Findings:	The Cathode Washing Operation is no longer operational, see Section 1.2.1 of this inspection record for details. Compliance with this section is not applicable during the inspection period.
Compliance:	Not Applicable
Requirement Description:	1. AUTHORIZED DISCHARGES. 1.2 1.2.3: This section applies to the discharge of effluent from the cathode washing operation. The site reference number for this discharge is E208289. 1.2.3 The authorized discharge period is continuous.
Details/Findings:	The Cathode Washing Operation is no longer operational, see Section 1.2.1 of this inspection record for details. Compliance with this section is not applicable during the inspection period.
Compliance:	Not Applicable

Requirement Description:	<p>1. AUTHORIZED DISCHARGES. 1.2</p> <p>1.2.4: This section applies to the discharge of effluent from the cathode washing operation. The site reference number for this discharge is E208289.</p> <p>1.2.4 The characteristics of the discharge must be equivalent to or better than: pH: MAXIMUM: 11 pH Units, MINIMUM: 6 pH Units.</p>
Details/Findings:	<p>The Cathode Washing Operation is no longer operational, see Section 1.2.1 of this inspection record for details.</p> <p>Although there is no discharge from these works to the infiltration ponds, the ponds are still in place and collect water from a sprinkler system and precipitation. Chemtrade keeps the ponds wet at all times because they may contain waste asbestos from the Site's past process. The liquid in these ponds is sampled and analyzed for pH daily, and all reported pH data during the inspection period were within the authorized pH range. However, as the contents of the ponds is not effluent discharged from the cathode washing operation, compliance for this section is not applicable during the inspection period.</p>
Compliance:	Not Applicable
Actions to be taken:	
Requirement Description:	<p>1. AUTHORIZED DISCHARGES. 1.2</p> <p>1.2.5: This section applies to the discharge of effluent from the cathode washing operation. The site reference number for this discharge is E208289.</p> <p>1.2.5 The authorized works are seawater cathode washing facilities, infiltration ponds and related appurtenances approximately located as shown on the Site Plan.</p>
Details/Findings:	<p>During the inspection the Officers observed the infiltration ponds to be in place. The Permittee informed the Officers that the Site plans to have the ponds closed and undergo remediation work in the future. The Permittee advised that the seawater cathode washing facilities have been decommissioned since the 1990's (see Section 1.2.1 of this inspection record for details). As there is no discharge of effluent from the cathode washing operation compliance with this section is not applicable during the inspection period.</p> <p>In a follow-up to Inspection Record 049012, Chemtrade (formerly Canexus), informed the Ministry that they would submit a permit amendment application to amend Section 1.2 of the Permit as the cathode washing operations were no longer in use. At the time of this inspection, Chemtrade has not submitted a Permit amendment application.</p>
Compliance:	Not Applicable

Actions to be taken:	It is recommended that Chemtrade submit a request to amend the Permit to reflect the changes that have occurred to the authorized works. Information on how to submit a permit amendment request can be found on the Ministry's website at: https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization
Requirement Description:	<p>2. GENERAL REQUIREMENTS. 2.1 Maintenance of Works and Emergency Procedures</p> <p>2.1: The authorized works must be inspected regularly and maintained in good working order. In the event of an emergency or condition beyond the control of the Permittee which prevents effective operation of the authorized works or leads to an unauthorized discharge, the Permittee must take appropriate remedial action and notify the Director immediately. The Director may reduce or suspend operations to protect the environment until the authorized works has been restored and/or corrective steps have been taken to prevent unauthorized discharges.</p>
Details/Findings:	<p>Maintenance of Works: During the Site inspection the Permittee informed the Officers that the entire Site is maintained on a preventative maintenance schedule. Chemtrade manages their maintenance through work orders submitted and then tracked in their internal electronic system.</p> <p>There is someone on Site at all times, and the Site has alarms, ctv cameras in place. The cooling water and storm water effluent is continually monitored by probes and meters for pH, TSS, temperature, total chlorine residual, and if any of these parameters exceed Permit limits the discharge is automatically diverted to a one million gallon diversion tank and Site staff are alerted. If the effluent quality cannot be improved to meet Permit limits within 45 minutes then the Site is shut down and the seawater intake is stopped.</p> <p>Chemtrade's own internal lab, located on Site, takes samples of the effluent daily and compares their findings to the results from the continual monitoring system. On January 30, 2019, a summary of the preventive maintenance routine specific to the authorized works, and maintenance records and work orders for the first week of October in 2018 and 2019, was requested to be submitted to the Ministry. As of February 20, 2020, this information and these records have not been submitted; therefore, compliance with the maintenance of works requirement cannot be determined.</p>
Compliance:	Not Determined
Requirement Description:	<p>2. GENERAL REQUIREMENTS. 2.1 Maintenance of Works and Emergency Procedures</p> <p>2.1: The authorized works must be inspected regularly and maintained in good working order. In the event of an emergency or condition beyond the control of the Permittee which prevents effective operation of the authorized works or leads to an unauthorized discharge, the Permittee must take appropriate remedial action and notify the Director immediately. The Director may reduce or suspend operations to protect the environment until the authorized works has been restored and/or corrective steps have been taken to prevent unauthorized discharges.</p>

Details/Findings:	<p>Emergency Conditions:</p> <p>A review of Ministry records determined that no emergency or condition beyond the control of the Permittee which prevented effective operation of the authorized works or lead to an unauthorized discharge was reported during the inspection period. Therefore, compliance with the emergency conditions requirements of this Section of the Permit is not applicable for the inspection period. Please note the flow meter is not considered to be part of the authorized works, compliance findings related to the flow meter are captured under Section 4.1 of the Permit.</p>
Compliance:	Not Applicable
Requirement Description:	<p>2. GENERAL REQUIREMENTS. 2.2 Bypasses</p> <p>2.2: Any bypass of the authorized works is prohibited unless the approval of the Director is obtained and confirmed in writing.</p>
Details/Findings:	<p>On April 19, 2018, Chemtrade applied for an approval to bypass their treatment system and the automatic interlocks that close the effluent outlet valve for the time it takes for the online instruments to stabilize. The bypass was requested for one hour when establishing seawater flow throughout their plant during startup flow. The bypass was authorized by the Ministry on April 19, 2018, for up to one hour between April 25, 2018 and May 2, 2018. The conditions of this bypass were that the characteristics of the discharge and flow rate must be verified and provided to the Director in writing within 24 hours of final discharge. A review of Ministry records determined that no record of this information was provided to the Director in writing within 24 hours of final discharge. Therefore, the conditions of this bypass were not met. No other bypasses were reported or requested during the inspection period.</p>
Compliance:	Out
Requirement Description:	<p>2. GENERAL REQUIREMENTS. 2.3 Process Modifications</p> <p>2.3: The Director must be notified prior to implementing changes to any process that may adversely affect the quality and/or quantity of the discharge. Despite notification under this section, permitted levels must not be exceeded.</p>

Details/Findings:	<p>The Permittee informed the Officers that there have been no changes to the authorized works during the inspection period. Therefore, this Section is not applicable for the current inspection period.</p> <p>However, changes to the authorized works did occur outside of the inspection period which were captured in the previous inspection record IR-85448 from May 17, 2018. It was recommended that Chemtrade apply to have the Permit amended to reflect these changes in the previous inspection record, but at this time no amendment has occurred.</p>
Compliance:	Not Applicable
Actions to be taken:	Please ensure that the Director is notified prior to implementing changes to any process that may adversely affect the quality and/or quantity of the discharge.
Requirement Description:	<p>2. GENERAL REQUIREMENTS. 2.4 Notification</p> <p>2.4: The Director must be notified of a change in ownership of the works specified in Sections 1.1 and 1.2 within 10 days of an ownership change.</p>
Details/Findings:	No change of ownership occurred during the inspection period, therefore this Section is not applicable for the current inspection period.
Compliance:	Not Applicable
Requirement Description:	<p>3. SAMPLING REQUIREMENTS. 3.1 Sampling Procedures</p> <p>3.1: Sampling is to be carried out in accordance with the procedures described in the "British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples, 2013 Edition", or most recent edition, or by suitable alternative procedures as authorized by the Director. A copy of the above manual is available on the Ministry web page at www.env.gov.bc.ca/epd/wamr/labsys/lab_meth_manual.html.</p>

Details/Findings:	During the Site inspection the Officers were informed that grab samples are collected for quarterly for analysis of total copper, total nickel, total zinc, and toxicity, as prescribed in the most recent edition of the BC Field Sampling Manual.
Compliance:	In
Requirement Description:	3. SAMPLING REQUIREMENTS. 3.2 Analytical Procedures 3.2: Analyses are to be carried out in accordance with procedures described in the "British Columbia Environmental Laboratory Manual, 2013 Edition", or the most recent edition, or by suitable alternative procedures as authorized by the Director. A copy of the above manual is available on the Ministry web page at www.env.gov.bc.ca/epd/wamr/labsys/lab_meth_manual.html
Details/Findings:	During the inspection Site staff confirmed that in-situ continuous monitors are used to analyze pH, TSS, temperature, and total chlorine residual. Using an in-situ continuous monitor for TSS and residual chlorine is not in accordance with the procedures described in the most recent edition of the British Columbia Environmental Laboratory Manual (BC Environmental Laboratory Manual); therefore, Chemtrade is out of compliance with this sampling requirement. It was reported that Chemtrade staff do take daily effluent samples to analyze for TSS and residual chlorine in their in-house lab, and compare with the results of the in-situ continuous monitors; However, this data is being used for quality control purposes at this time and is not reported to the Ministry.
Compliance:	Out
Actions to be taken:	Ensure that analyses for the parameters listed in the Permit is carried out in accordance with the procedures described in the recent edition of the BC Environmental Laboratory Manual which can be found here: https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-environmental-laboratory-

Requirement Description:	<p>3. SAMPLING REQUIREMENTS. 3.3 Quality Assurance</p> <p>3.3: (a) The Permittee must obtain from the analytical laboratory (ies) their precision, accuracy and blank data for each sample set submitted as well as an evaluation of the data acceptability, based on the criteria set by the laboratory. ;</p> <p>(b) During each monitoring period, replicate and blank samples must be prepared and submitted for analysis for each parameter for every 10 monitoring sites, with a minimum of one replicate and blank sample where the number of monitoring sites sampled is less than 10. ;</p> <p>(c) The Permittee must participate in the split sample analysis for performance evaluation under the Environmental Data Quality Assurance Regulation. ;</p> <p>(d) For each test method, the Permittee must use analytical laboratory(ies) that:</p> <ol style="list-style-type: none"> 1. Participate in the Proficiency Testing Program operated by CALA (Canadian Association for Laboratory Accreditation) ; 2. Are listed in the Ministry's Directory of Qualified Laboratories, available online at http://www.env.gov.bc.ca/epd/wamr/labsys/lab_meth_manual.html. ; or 3. Are accredited to ISO 17025 standards for that test method(s).
Details/Findings:	<p>(a) In the quarterly certificates of analysis from Bureau Veritas Laboratories (formerly Maxxam) a quality assurance report is included with data for spiked blanks and method blanks.</p> <p>(b) During the Inspection Site staff informed the Officers that Chemtrade does not prepare replicate and blank samples and submit them for analysis for each parameter every 10 monitoring sites, with a minimum of one replicate and blank sample where the number of monitoring sites sampled is less than 10.</p> <p>(c) No split sample analysis was required during the inspection period for the Site.</p> <p>(d) 1. Analysis of total copper, total nickel, and total zinc, was carried out by Bureau Veritas Laboratories during the inspection period. Toxicity analysis was carried out by Nautilus Environmental Inc. The other monitoring parameters were all analyzed using devices and samples were not taken. On February 4, 2020, a search was conducted, of the BC Directory of Qualified Laboratories which contains records of laboratories which participate in Proficiency Testing Program operated by the Canadian Association for Laboratory Accreditation (CALA). Bureau Veritas Laboratories was found to have participated in proficiency testing in January 2019, for metals, including copper, nickel and zinc. Chemtrade's in-house lab was found to have participated in proficiency testing in March 2019, for TSS, pH, and residual chlorine. Nautilus Environmental Inc. was found to be a fully accredited CALA lab with membership number 3525 and accreditation to conduct toxicity analysis.</p> <ol style="list-style-type: none"> 2. Nautilus Environmental Inc., Bureau Veritas Laboratories, and Chemtrade's in-house lab are all listed in the Ministry's Directory of Qualified Laboratories. 3. CALA's online Directory of Laboratories confirms that Nautilus Environmental Inc. conforms with requirements of ISO/IEC 17025. The Bureau Veritas Laboratories certificates of analysis sent to Chemtrade for the metal analysis contain a statement that they are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. <p>As Chemtrade does not submit replicate and blank samples for analysis as required under part (b) of this Section of the Permit the Site is found to be out of compliance.</p>
Compliance:	Out

Actions to be taken:	Ensure that during each monitoring period, replicate and blank samples are collected and submitted for analysis for each parameter for every 10 monitoring sites, with a minimum of one replicate and blank sample where the number of monitoring sites sampled is less than 10.																								
Requirement Description:	<p>3. SAMPLING REQUIREMENTS. 3.4 Grab Sampling for Discharge Monitoring</p> <p>3.4: A suitable sampling facility must be installed and a grab sample of the effluent specified in Sections 1.1 and 1.2 must be obtained as outlined in the following table. Proper care must be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc. ; Sampling Sites (as shown on the Site Plan): E208263 - effluent at the sampling facility prior to the discharge to Burrard Inlet. , E208289 - centre of the active infiltration pond. ;</p> <p>PARAMETER:</p> <table border="0"> <tr> <td>pH,</td> <td>E208263: daily,</td> <td>E208289: daily. ;</td> </tr> <tr> <td>Total suspended solids, mg/L,</td> <td>E208263: daily,</td> <td>E208289: ----- . ;</td> </tr> <tr> <td>Temperature, degrees Celsius,</td> <td>E208263: daily,</td> <td>E208289: ----- . ;</td> </tr> <tr> <td>Residual Chlorine, mg/L,</td> <td>E208263: daily,</td> <td>E208289: ----- . ;</td> </tr> <tr> <td>Total Copper, mg/L,</td> <td>E208263: quarterly,</td> <td>E208289: ----- . ;</td> </tr> <tr> <td>Total Nickel, mg/L,</td> <td>E208263: quarterly,</td> <td>E208289: ----- . ;</td> </tr> <tr> <td>Total Zinc,</td> <td>E208263: quarterly,</td> <td>E208289: ----- . ;</td> </tr> <tr> <td>Toxicity Rainbow Trout,</td> <td>E208263: quarterly,</td> <td>E208289: ----- .</td> </tr> </table>	pH,	E208263: daily,	E208289: daily. ;	Total suspended solids, mg/L,	E208263: daily,	E208289: ----- . ;	Temperature, degrees Celsius,	E208263: daily,	E208289: ----- . ;	Residual Chlorine, mg/L,	E208263: daily,	E208289: ----- . ;	Total Copper, mg/L,	E208263: quarterly,	E208289: ----- . ;	Total Nickel, mg/L,	E208263: quarterly,	E208289: ----- . ;	Total Zinc,	E208263: quarterly,	E208289: ----- . ;	Toxicity Rainbow Trout,	E208263: quarterly,	E208289: ----- .
pH,	E208263: daily,	E208289: daily. ;																							
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Total Zinc,	E208263: quarterly,	E208289: ----- . ;																							
Toxicity Rainbow Trout,	E208263: quarterly,	E208289: ----- .																							
Details/Findings:	<p>E208263 - effluent at the sampling facility prior to the discharge to Burrard Inlet: During the Site inspection the Officers viewed sample site E208263 where grab samples are collected for quarterly for analysis of total copper, total nickel, total zinc, and toxicity (Photos 2 & 3). As described in the findings of Section 3.1 of this inspection record, the Site does not collect grab samples for the monitoring of TSS and residual chlorine. This is considered to be a non-compliance with the Permit as TSS and residual chlorine analysis requires samples be collected.</p> <p>On the following dates, the following monitoring did not occur for the following parameters: - Q4 2019 - November 16, 2019, the quarterly report states that there was an error in the direction to obtain and record samples taken from the effluent. No pH and temperature data were recorded for this day.</p> <p>On the following dates monitoring data was not reported, and no explanation was provided, therefore it cannot be determined if monitoring occurred: - Q3 2018 - no quarterly sample data was reported to be analyzed for total copper, total nickel, and total zinc; - Q1 2019 - temperature was not reported for the entire quarter from January 1, 2019 to March 31, 2019;</p> <p>E208289 - centre of the active infiltration pond: As there was no effluent discharging from the Cathode Washing Operation to the infiltration ponds during the inspection period, the requirement to monitor at E208289 was not applicable for the inspection period.</p>																								

Compliance:	Out
Actions to be taken:	Please ensure that grab samples of the effluent are collected for the parameters specified in Sections 1.1 at the correct frequency defined in the Permit.
Requirement Description:	<p>3. SAMPLING REQUIREMENTS. 3.5 Grab Sampling for Receiving Environment Monitoring</p> <p>3.5: A suitable sampling facility must be installed and grab samples of the receiving environment must be obtained as outlined in the following table. Proper care must be taken in sampling, storing and transporting the samples to adequately control temperature and avoid contamination, breakage, etc. ; Sampling Sites (as shown on the Site Plan): E208291 - surface of Burrard Inlet above the point of discharge., E208292 - groundwater monitoring well., E208293 - tide pool in the mudflat area at low tide. ;</p> <p>PARAMETER: pH, E208291: ----- , E208292: monthly, E208293: monthly. ; Residual Chlorine, mg/L, E208291: monthly, E208292: -----, E208293: ----- .</p>
Details/Findings:	<p>During the inspection due to heavy rainfall the Officers did not view sampling facilities E208291, E208292, and E208293. After the inspection upon request the Permittee provided photos of the three receiving environment sampling locations (Photos 7-9).</p> <p>Following a review of the Quarterly Reports it was determined that grab samples of the receiving environment were obtained monthly with the exception October 2018 at site E208293, the tide pool in the mudflat area at low tide. No data was provided for site E208293 in October 2018, so it cannot be determined if sampling occurred.</p>
Compliance:	Not Determined
Actions to be taken:	Ensure receiving environment monitoring occurs monthly at all sites specified in the Permit, for all parameters required by the Permit.
Requirement Description:	<p>4. OPERATIONAL REQUIREMENTS FOR EFFLUENT DISCHARGES. 4.1 Flow Measurement</p> <p>4.1: Provide and maintain a suitable flow measuring device and record once per day the effluent volume discharged over a 24-hour period.</p>

Details/Findings:	<p>From information gathered during the onsite inspection and during the data review it was determine that the flow measuring device was not maintained, and effluent flow was not recorded once per day during this inspection period.</p> <p>On December 19, 2019, Chemtrade submitted a reported to EEP (DGIR 193229) stating that the Site flow meter had failed, and that they were in the process of making repairs. In this report it is stated that Chemtrade excepted the flow meter to be repaired by the end of 2019.</p> <p>During the Site inspection the Permittee informed the Officers he would would confirm what the type of flow meter is being used on Site. On the following day, January 30, 2019, the Permittee discovered that the flow meter had not been repaired in 2019 and that the flow meter had been damaged beyond repair and needed to be replaced. This was reported to the Ministry in DGIR 193832, submitted on January 30, 2019. Following further conversation with the Permittee, it was reported that a new flow meter had been ordered and was expected to arrive in mid-February. On February 12, 2020, the Permittee sent an email advising that the new flow meter is a Signature Flow Meter 12VDC 4.0A, with a photo of the product label. On February 21, 2020, the Permittee advised that the new flow meter was installed on February 6, 2020, and became operational on February 19, 2020. As the Site failed to maintain a suitable flow measuring device from December 19, 2019, to February 19, 2020, Chemtrade is found to be out of compliance with this Section of the Permit.</p> <p>Following a review of the Quarterly Reports it was determined that effluent volume discharged over a 24-hour period was not monitored daily during the inspection period.</p> <p>On the following dates no flow monitoring occurred due to issues with the flow meter:</p> <ul style="list-style-type: none"> - August 19 to 22, 2018; - September 16 to 20, 2018; - September 27 to 30, 2018; - October 14-16, 2019; and, - December 18, 2019 to January 30, 2020, and ongoing, with no update as of February 20, 2020. <p>On the following dates no flow data was reported and no reason was given, thus it could not be determined if monitoring occurred:</p> <ul style="list-style-type: none"> - April 1, 2018; and, - Oct 1 to 3, 2018.
Compliance:	Out
Actions to be taken:	Ensure that the Site has, and maintains a suitable flow measuring device, and record once per day the effluent volume discharged over a 24-hour period.
Requirement Description:	<p>4. OPERATIONAL REQUIREMENTS FOR EFFLUENT DISCHARGES. 4.2 Foam</p> <p>4.2: Should foam, attributable to the effluent, become objectionable in receiving waters, the Director may require additional treatment to remove the foam or eliminate the cause of the foam.</p>

Details/Findings:	During the Site inspection the Officers did not observe any foam in the receiving waters. Following a review of Ministry files, no letter from the Director Requiring additional treatment to remove the foam or eliminate the cause of the foam was found; therefore, compliance with this requirement is not applicable.
Compliance:	Not Applicable
Requirement Description:	<p>4. OPERATIONAL REQUIREMENTS FOR EFFLUENT DISCHARGES. 4.3 Infiltration Pond</p> <p>4.3: The infiltration pond must be operated such that:</p> <p>(a) there is no overflow from the infiltration pond to the surrounding environment. ;</p> <p>(b) surface drainage is diverted away from the infiltration pond. ; and</p> <p>(c) a minimum freeboard of 0.5 metres is maintained at all times. ;</p> <p>The residue, removed from the infiltration pond, must be disposed of in a manner authorized by the Director, or as authorized by regulation under the Environmental Management Act.</p>
Details/Findings:	During the Site inspection the infiltration ponds were observed to be operated in accordance with the requirements set out in Section 4.3 of the Permit. The Permittee confirmed that no residue was removed from the infiltration ponds during the inspection period, as the Site no longer discharges to them from their authorized works.
Compliance:	In
Requirement Description:	<p>5. REPORTING REQUIREMENTS. 5.1 Reporting</p> <p>5.1: Maintain data of analyses, lab quality assurance data, flow measurements and field measurement data for inspection and submit the data, suitably tabulated, to the Director, for the previous quarter. All reports must be submitted within 31 days of the end of each quarter.</p> <p>Each report must include a statement outlining the number of exceedances of permitted levels that occurred during the reporting period. The dates of the exceedances must be clearly identified in the data submission and an explanation as to the cause of the exceedances and a description of the measures taken to rectify the situation must be provided. Should no exceedances have occurred over the reporting period, a statement to that effect must be included.</p> <p>Sample analysis data and field measurement data must be submitted in an electronic format and entered into the provincial database system known as EMS (Environmental Monitoring System) within 30 days after the sampling date.</p>

Details/Findings:	<p>All the Quarterly Reports were submitted within 31 days of the end of each quarter. These reports contained data of analyses, flow measurements and field measurement data, suitably tabulated, with the exception of the following occurrences:</p> <ul style="list-style-type: none"> - The 2018 Q2 and Q3 reports and the 2019 Q1 report did not contain lab quality assurance data; - On the following dates no flow rate data was reported and no explanation was provided the associated quarterly report: April 1, 2018 and October 1 to October 3, 2018; - No data was reported for the required receiving environment monitoring at site E208293, the tide pool in the mudflat area at low tide in October 2018; - No effluent temperature monitoring data from E208263 was reported for all of 2019 Q1 January 1, 2019 to March 31, 2019; and, - No quarterly effluent monitoring data was reported during 2018 Q3 for total copper, total nickel, and total zinc from E208263 <p>Additionally, the Permittee confirmed that Chemtrade has not been entering sample analysis data and field measurement data for the discharges specified in Sections 1.1, 1.2 and from receiving environment monitoring have not been entered into the provincial database system know as EMS (Environmental Monitoring System) during the inspection period.</p>
Compliance:	Out
Actions to be taken:	<p>Please ensure that all data of analyses, lab quality assurance data, flow measurements and field measurement data is suitably tabulated, and to the Director, for the previous quarter. If there was an occurrence of no discharge, and therefore no monitoring data, a statement explaining this should be included.</p> <p>Sample analysis data and field measurement data must be submitted in an electronic format and entered EMS within 30 days after the sampling date.</p>
Requirement Description:	<p>5. REPORTING REQUIREMENTS. 5.2 Non-compliance Reporting</p> <p>5.2: The Permittee must immediately notify the Director or designate of any non-compliance with the requirements of this Permit and take appropriate remedial action. Written confirmation of all non-compliance events, including available test results is required by facsimile within 24 hours of the original notification unless otherwise directed by the Director, Environmental Protection. With 30 days of the non-compliant event, the Permittee must submit to the Director, Environmental Protection, a written report including, but not necessarily limited to, the following:</p> <ul style="list-style-type: none"> (a) All relevant test results related to the noncompliance. ; (b) An explanation of the most probable cause(s) of the noncompliance. ; and (c) remedial action planned and/or taken to prevent similar noncompliance(s) in the future.

Details/Findings:	<p>A review of Ministry records determined that the following non-compliances were reported during the inspection period:</p> <ul style="list-style-type: none"> - On November 26, 2018, an exceedance of the Permit limits for total zinc and total copper sampled at E208263 on November 14, 2018 was reported to EEP (DGIR 183081). This notification was sent immediately after Chemtrade received the results of their sample analysis. However, available test results were not sent to the Ministry within 24 hours. On December 21, 2018 a written report was submitted to the Ministry, which included all the required information. - On December 19, 2019, Chemtrade reported that the Site flow meter was broken to EEP (DGIR 193229). In this DGIR it is stated that Chemtrade had ordered replacement parts for the flow meter and expected it to be repaired by the end of 2019. No written confirmation of this non-compliance event was submitted within 24 hours of the original notification. No report was submitted to the Director within 30 days of the non-compliant event. - On January 30, 2020, Chemtrade reported that the Site flow meter was still broken and had been broken since December 19, 2019 to EEP (DGIR 193832). Written confirmation of this non-compliance event was submitted within 24 hours of the original notification. Upon request, Chemtrade sent a written report of this incident to Compliance Reporting Mailbox on February 3, 2020. <p>The following non-compliance were noted during the inspection, however no reports of these incidents were found in Ministry files:</p> <ul style="list-style-type: none"> - flow rate exceedance on September 30, 2019, possibly due to issues with the flow meter; - missed monitoring of effluent quality multiple times (see Findings for Section 3.4); - no flow monitoring on the multiple dates (see Findings for Section 4.1); and, - no suitable flow measuring device in place during the time period where the flowmeter was inoperable (see Findings for Section 4.1). <p>As Chemtrade failed to report multiple non-compliances, and the non-compliance reports that were submitted did not meet the requirements of this Section of the Permit, the Site is found to be out of compliance with this Section.</p>
Compliance:	Out

Actions to be taken:	<p>Report all non-compliances with the Permit to the Ministry immediately, through the Compliance Reporting Mailbox (EnvironmentalCompliance@gov.bc.ca). Ensure that within 24 hours of this original written report that any available test results are also emailed to the Director (Compliance Reporting Mailbox).</p> <p>Within 30 days of the non-compliant event, submit a written report to the Director (Compliance Reporting Mailbox) including, but not limited to the information sated in (a) through (c) of this Permit section.</p> <p>It is recommended that Chemtrade staff review the ministry web page on the Compliance Reporting Mailbox found here: https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/compliance-reporting-mailbox. A template for non-compliance reporting can be found on this web page. Please note spills must also be reported in compliance with the requirements of the Spill Reporting Regulation.</p>
Requirement Description:	<p>5. REPORTING REQUIREMENTS. 5.3 Noncompliance Reporting of Toxicity</p> <p>5.3: Immediately notify the Director of any toxicity failures.</p>
Details/Findings:	<p>No toxicity failures occurred during the inspection period, therefore, compliance with this requirement is not applicable.</p>
Compliance:	<p>Not Applicable</p>
Requirement Description:	<p>5. REPORTING REQUIREMENTS. 5.4 Spill Reporting</p> <p>5.4: All spills to the environment (as defined in the Spill Reporting Regulation) must be reported immediately in accordance with the Spill Reporting Regulation. Notification shall be via the Provincial Emergency Program at 1-800-663-3456.</p>

<p>Details/Findings:</p>	<p>Following a review of Ministry files several spills were found to be reported during the inspection period. All of these spills were immediately reported to EEP in line with the Spill Reporting Regulation, and written report on the spill was submitted to the director within 30 days after the emergency response completion date for that spill. Below is a list of spills that were reported to the Ministry during the inspection period:</p> <ul style="list-style-type: none"> - On September 30, 2018, an estimated volume of less than 5 liters of sodium hydroxide was spilled to the Burrard Inlet. DGIR 182379 was issued. - On February 14, 2019, approximately 90 kg of Freon- 507 (Pentafluoroethane) was released DGIR 183822 was issued.
<p>Compliance:</p>	<p>In</p>

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 non-compliance. Using the Non-Compliance Decision Matrix, the compliance determination for this inspection has been assessed as a **Level 2, Category B, Warning**.

Compliance History:

2018-05-17 - IR 085448 - Advisory - 1 B
2017-03-13 - IR 049012 - Advisory - 1 A
2017-03-13 - IR 047393 - Advisory - 1 A
2017-03-01 - IR 049444 - Advisory - 2 A
2015-02-26 - IR 020005 - Advisory

The findings of this inspection record will become part of a sector compliance audit of the Chemical and Chemical Products Sector. Please refer to Inspection Report (IR) 144623 for compliance findings regarding the Site refuse discharge Permit PR-1698, and refer to IR 145550 for compliance findings regarding the Hazardous Waste Regulation.

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: gov.bc.ca/environmentalcompliance

Non-Compliance Decision Matrix information:

www.gov.bc.ca/environment/how-compliance-is-assessed

Reporting and data submission requirements (to be sent to: EnvAuthorizationsReporting@gov.bc.ca):

www.gov.bc.ca/submit-waste-authorization-

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 warning, please contact the undersigned.

Yours truly,

Katelyn Dick
Environmental Protection Officer

cc:

Attachments:

1) 2020-02-11 IR144618 photo record PE18.pdf IR144618 photo record PE18

Deliver via:

Email: Fax: Mail:
Registered Mail: Hand Delivery:

**Ministry of Environment
and Climate Change
Strategy**

Compliance
Environmental
Protection Division

Mailing Address:
2nd Fl
10470-152nd St
Surrey BC V3R 0Y3

Telephone: 604 582 5200
Facsimile: 604 930 7119
Website: www.gov.bc.ca/env

DISCLAIMER:

Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of the regulations and codes of practices please visit
<http://www.bclaws.ca>

If you require a copy of the original permit, please contact the inspector noted on this inspection record.

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

PE- 18	Chemtrade Electrochem Inc.
IR #: 144618	Photos 1-6 taken on Jan. 30, 2020. Photos 7-9 sent on Feb. 12, 2020

Photo 1: The sea water pumped into the Site to be used as cooling water is transported around the Site in green pipes.



Photo 2: main effluent gate valve and location where effluent monitoring occurs, and quality control samples are collected.



PE- 18	Chemtrade Electrochem Inc.
IR #: 144618	Photos 1-6 taken on Jan. 30, 2020. Photos 7-9 sent on Feb. 12, 2020

Photo 3:
Sampling
facility and :
main effluent
gate valve



Photo 4: Outfall



PE- 18	Chemtrade Electrochem Inc.
IR #: 144618	Photos 1-6 taken on Jan. 30, 2020. Photos 7-9 sent on Feb. 12, 2020

Photo 5:
Location of
septic tank not
connected to
the Site
effluent
system.



Photo 6:
sodium
bisulphite
system
(circled)



PE- 18	Chemtrade Electrochem Inc.
IR #: 144618	Photos 1-6 taken on Jan. 30, 2020. Photos 7-9 sent on Feb. 12, 2020

Photo 7:
Receiving environment monitoring sample location E208291, Burrard Inlet.



Photo 8:
Receiving environment monitoring sample location E208292, groundwater monitoring well



PE- 18	Chemtrade Electrochem Inc.
IR #: 144618	Photos 1-6 taken on Jan. 30, 2020. Photos 7-9 sent on Feb. 12, 2020

Photo 9:
Receiving
environment
monitoring
sample location
E208293,
tidepool and
mudflat area



Document : 2020-02-11 IR144618 photo record PE18.pdf

Document comment: IR144618 photo record PE18