



Report Date: March 09, 2023

File: 1497

Report Number: 203054

Duncan-North Cowichan Joint Utilities Board
PO Box 278
Duncan, BC V9L 3X4

Dear Duncan-North Cowichan Joint Utilities Board,

Re: Non-compliance Advisory Letter, Operational Certificate 1497

On February 14, 2023, Ministry of Environment and Climate Change Strategy (Ministry) Environmental Protection Officer Jesse Francisco (Ministry Staff) conducted a planned on-site inspection of the wastewater treatment facility (Facility) located east of 1091 Marchmont Road in Duncan, BC, and operated by the Municipality of North Cowichan (North Cowichan) on behalf of the Duncan - North Cowichan Joint Utilities Board (DNC JUB). The purpose of the inspection was to assess the DNC JUB's compliance with Operational Certificate 1497 (OC), which authorizes the discharge of effluent from the Facility to the Cowichan River and to agricultural and forest land for irrigation, subject to the terms and conditions of the OC. The OC was first issued on November 29, 1972, and was last amended on June 11, 2022. Robert Bell (Manager of Utilities, North Cowichan) and Brent Wentz (Foreperson, North Cowichan) accompanied Ministry Staff during the inspection.

This Advisory and the alleged violations and the circumstances to which it refers will form part of the compliance history of the DNC JUB, and will be taken into account in the event of future non-compliance.

Please note that this authorization is considered to be out of compliance until such a time as it can be confirmed to meet the authorization requirements.

Inspection Details:

The inspection assessed compliance for the period of April 17, 2020, to February 14, 2023 (Inspection Period), and included a review of the following documents:

- JUB 2020-23 Effluent Data for the period of January 1, 2020, to March 1, 2023, submitted to Ministry Staff on March 1, 2023 (Tabulated Data);
- MOE Quarterly Effluent Flow and Quality Reports, Q1 2020 to Q4 2022, prepared by North Cowichan (WQ Reports);
- The District of North Cowichan/City of Duncan Joint Utilities Board, JUB Wastewater Treatment Lagoons Facility, Annual Report 2021, dated March 15, 2022, prepared by North Cowichan (2021 Annual Report);
- The District of North Cowichan/City of Duncan Joint Utilities Board, JUB Wastewater Treatment Lagoons Facility, Annual Report 2020, dated April 9, 2021, prepared by North Cowichan (2020 Annual Report); and
- Cowichan Valley Regional District, Central Sector Liquid Waste Management Plan, dated August 1999, prepared by Dayton & Knight Ltd. (CSLWP).

Below are the clauses from the OC that were assessed for compliance during the inspection, as well as the associated details/findings and required actions.

Requirement Description:	<p>1. AUTHORIZED DISCHARGES, 1.1</p> <p>1.1.1: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.1 The maximum authorized rate of discharge is 49,000 m³/d.</p>
Details/Findings:	<p>The WQ Reports show that the discharge from the Facility did not exceed 49,000 m³/day during the Inspection Period.</p>
Compliance:	<p>In</p>
Requirement Description:	<p>1. AUTHORIZED DISCHARGES, 1.1</p> <p>1.1.2: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.2 After June 30, 2005 the maximum authorized mass of total phosphorus that may be discharged to the Cowichan River from July 1 to September 30 (inclusive) each year is 18 kg/d.</p>

<p>Details/Findings:</p>	<p>The WQ Reports show the discharge from the Facility exceeded 18 kg/d of total phosphorus on the following occasions during the Inspection Period:</p> <p>2020:</p> <ul style="list-style-type: none"> • August 6 - 19.0 kg/d • August 7 - 18.7 kg/d • August 21 - 19.6 kg/d • September 30 - 31.8 kg/d <p>The Tabulated Data shows the discharge from the Facility exceeded 18 kg/d of total phosphorus on the following occasions during the Inspection Period:</p> <p>2021:</p> <ul style="list-style-type: none"> • July 2 - 18.5 kg/d • September 29 - 33.8 kg/d • September 30 - 40.3 kg/d <p>2022:</p> <ul style="list-style-type: none"> • July 1 - 19.2 kg/d • July 5 - 22.5 kg/d • July 6 - 19.6 kg/d • July 7 - 18.8 kg/d • September 28 - 19.2 kg/d • September 29 - 19.3 kg/d • September 30 - 19.2 kg/d
<p>Compliance:</p>	<p>Out</p>
<p>Actions to be taken:</p>	<p>Ensure the discharge from the Facility to the Cowichan River does not exceed the total phosphorus limit of 18 kg/d during July 1 to September 30 (inclusive) each year.</p>
<p>Requirement Description:</p>	<p>1. AUTHORIZED DISCHARGES, 1.1</p> <p>1.1.3: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.3 The characteristics of the discharge shall not exceed: 5-day Biochemical Oxygen Demand - 30 mg/L Total Suspended Solids - 40 mg/L Fecal Coliform - 200 CFU/100ml (median of 7 consecutive tests) - 800 CFU/100ml (in any sample) Toxicity (LC50 - 96 hour) - 100 percent effluent pH - 6.0 - 9.0</p>

Details/Findings:	<p>The WQ Reports show the discharge from the Facility exceeded municipal effluent quality requirements on the following occasions during the Inspection Period:</p> <p>5-day Biochemical Oxygen Demand (BOD5):</p> <ul style="list-style-type: none"> • June 16, 2020 - 40.1 mg/L • March 15, 2022 - 30.7 mg/L • March 22, 2022 - 37.9 mg/L <p>Total Suspended Solids (TSS):</p> <ul style="list-style-type: none"> • April 15, 2020 - 46.0 mg/L • July 28, 2022 - 42.0 mg/L • September 6, 2022 - 48.0 mg/L <p>Toxicity (LC50 - 96 hour):</p> <ul style="list-style-type: none"> • September 28, 2022 - 77.1% • September 27, 2022 - 70.71% <p>pH:</p> <ul style="list-style-type: none"> • November 1, 2022 - 5.48
Compliance:	Out
Actions to be taken:	Ensure the characteristics of the discharge from the Facility do not exceed the limits imposed under this section.
Requirement Description:	<p>1. AUTHORIZED DISCHARGES, 1.1</p> <p>1.1.4: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.4 The authorized works are influent pumping facilities, mechanical screens, grit removal tanks, one complete mix aerated lagoon, three polishing lagoons, tertiary treatment works, chlorination and de chlorination facilities, a biosolids storage lagoon, an outfall with diffuser, and related appurtenances approximately located as shown on attached Site Plan A.</p>
Details/Findings:	<p>The Manager of Utilities confirmed the Facility consists of influent pumping facilities, mechanical screens, grit removal tanks, one complete mix aerated lagoon, three polishing lagoons, tertiary treatment works, chlorination and de chlorination facilities, a biosolids storage lagoon, an outfall with diffuser, and related appurtenances. Ministry Staff observed the Authorized Works located as shown on Site Plan A during the on-site inspection.</p>

Compliance:	In
Requirement Description:	<p>1. AUTHORIZED DISCHARGES, 1.1</p> <p>1.1.5: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.5 The authorized works must be complete and in operation as follows: - influent pumping facilities, mechanical screens, grit removal tanks, one complete mix aerated lagoon, three polishing lagoons, chlorination and de-chlorination facilities, a biosolids storage lagoon, on and from the date of this operational certificate; - tertiary treatment works and/or a reclaimed water pumping station, and a force main for seasonal irrigation identified in Subsection 1.2.4 on or before August 1, 2002.</p>
Details/Findings:	<p>The Manager of Utilities informed Ministry Staff that the Authorized Works under this section were complete and in operation during the Inspection Period, with the exception of the reclaimed water pumping station and force main for seasonal irrigation. The Manager of Utilities stated that water has never been reclaimed at the Facility, and as such, a reclaimed water pumping station and force main for seasonal irrigation are not part of the Authorized Works. Ministry Staff observed the tertiary treatment works which included an injection or mixing facility for removing phosphorus from the effluent, situated at the south edge of cell 3.</p>
Compliance:	In
Requirement Description:	<p>1. AUTHORIZED DISCHARGES, 1.1</p> <p>1.1.6: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.6 The location of the facilities from which the discharge originates is Lots 27-1-1, 27-A-1, 28-1-1, 26-1, 27-1 and 42-1, Sections 16 and 17, Range 8, Quamichan District, on the Cowichan Indian Reserve No. 1.</p>
Details/Findings:	<p>Ministry Staff accessed the Land Act Survey Parcel spatial layer in iMapBC and confirmed that the location of the Facility from which the discharge originates is consistent with the legal description specified under this section.</p>
Compliance:	In

Requirement Description:	1. AUTHORIZED DISCHARGES, 1.1 1.1.7: This subsection applies to the discharge of effluent to the Cowichan River from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E100569. 1.1.7 The location of the point of discharge is the Cowichan River.
Details/Findings:	Ministry Staff observed the outfall terminus at the Cowichan River during the on-site inspection.
Compliance:	In
Requirement Description:	1. AUTHORIZED DISCHARGES, 1.2 1.2.1: This subsection applies to the discharge of reclaimed water to agricultural and forest land for irrigation, from a MUNICIPAL SEWAGE TREATMENT FACILITY. The site reference number for this discharge is E241964. 1.2.1 The rate of discharge will be in accordance with the approved operational plan required in Subsection 2.13.
Details/Findings:	The Manager of Utilities informed Ministry Staff that water from the Facility has never been reclaimed and applied to agricultural and forest land for irrigation. Therefore, compliance with the requirements under Section 1.2 were not applicable during the Inspection Period.
Compliance:	Not Applicable
Requirement Description:	1. AUTHORIZED DISCHARGES, 1.3 1.3.1: This subsection applies to the discharge of effluent to the Cowichan River and reclaimed water to agricultural and forest land for irrigation from a MUNICIPAL SEWAGE TREATMENT FACILITY. 1.3.1 The combined average daily rate of discharge to the Cowichan River (authorized in Subsection 1.1) and to the agricultural and forest land irrigation sites (authorized in Subsection 1.2), based on an annual averaging period, is as follows: Year Average; Daily Discharge m3/d 2000; 11,430 2001; 11,700 2002; 11,990 2003; 12,270 2004; 12,570 2005; 12,870 2006; 13, 180 2007; 13,500 2008; 13,820 2009; 14,150 2010; 14,490 2011; 14,840 2012; 15,190 2013; 15,560 2014; 15,930 2015; 16,310 2016; 16,700 2017; 17,110 2018; 17,520

<p>Details/Findings:</p>	<p>The Average Flow Email in the Ministry's files show the following average flow calculations applicable to the Inspection Period:</p> <ul style="list-style-type: none"> • 2020 - 18,361 m3/day • 2021 - 18,801 m3/day • 2022 - 19,252 m3/day <p>The Manager of Utilities informed Ministry Staff that water has never been reclaimed at the Facility and applied to agricultural and forest land for irrigation. Therefore, the limits specified under this section are applicable to the discharge from the Facility to the Cowichan River.</p> <p>The WQ Reports show the average daily discharges from the Facility, based on an annual averaging period, did not exceed the limits listed above during the Inspection Period.</p>
<p>Compliance:</p>	<p>In</p>
<p>Requirement Description:</p>	<p>2. GENERAL REQUIREMENTS, 2.1 Maintenance of Works and Emergency Procedures</p> <p>2.1 : The Duncan - North Cowichan Joint Utilities Board shall inspect the authorized works regularly and maintain them in good working order. In the event of an emergency or condition beyond the control of the Duncan - North Cowichan Joint Utilities Board which prevents effective operation of the approved method of pollution control, the Duncan - North Cowichan Joint Utilities Board shall notify the Regional Waste Manager immediately and take appropriate remedial action. The Regional Waste Manager may reduce or suspend the operation of the Duncan - North Cowichan Joint Utilities Board to protect the environment until the approved method of pollution control has been restored.</p>
<p>Details/Findings:</p>	<p>The Manager of Utilities informed Ministry Staff that the Facility had been regularly inspected and maintained in good working order throughout the Inspection Period. Ministry Staff reviewed a sample of inspection and maintenance records during the on-site inspection. No emergencies or conditions beyond the control of the DNC JUB which would prevent effective operation of the Facility were observed by Ministry Staff during the inspection.</p> <p>The Manager of Utilities stated that historically during high precipitation events, effluent would pass between cells 2 and 5, thereby bypassing portions of the authorized works; however, this issue was rectified by raising the berm around the cells.</p> <p>The Manager of Utilities advised Ministry Staff of two emergency events that occurred during the Inspection Period: during periods of heavy rainfall in approximately October 2020 and November 2021, North Cowichan staff bypassed the outfall by pumping effluent directly from cell 5 to the Cowichan River in order to prevent overflows from cell 5 and the adjoining cells.</p> <p>The Ministry's files do not contain records indicating that the DNC JUB notified the Ministry of the above two emergency events.</p>

Compliance:	Out
Actions to be taken:	In the event of an emergency or condition beyond the control of the DNC JUB which prevents effective operation of the approved method of pollution control, notify the Ministry immediately at EnvironmentalCompliance@gov.bc.ca and take appropriate remedial action.
Requirement Description:	2. GENERAL REQUIREMENTS, 2.2 Bypasses 2.2: The Duncan - North Cowichan Joint Utilities Board shall ensure that no waste is discharged without being processed through the authorized works unless prior written approval is received from the Regional Waste Manager.
Details/Findings:	The Manager of Utilities informed Ministry Staff that no planned bypasses occurred during the Inspection Period. In addition, Ministry Staff did not observe any bypass of the authorized works during the on-site inspection. As described under section 2.1 in this report, two bypasses occurred during the Inspection Period; however, the bypasses were a result of emergencies beyond the control of the DNC JUB, and therefore, prior written approval was not applicable.
Compliance:	In
Requirement Description:	2. GENERAL REQUIREMENTS, 2.3 Plans - New Works 2.3: Plans and specifications of the tertiary treatment works, reclaimed water pumping station and force main for seasonal irrigation shall be certified by a qualified professional licensed to practice in the Province of British Columbia, and submitted to the Regional Waste Manager for review prior to the start of construction. A qualified professional licensed to practice in the province of British Columbia must certify that the works have been constructed in accordance with the submitted plans.

Details/Findings:	<p>The Manager of Utilities informed Ministry Staff that water has never been reclaimed at the Facility, and that a reclaimed water pumping station and force main for seasonal irrigation have not been installed.</p> <p>Ministry Staff observed the tertiary treatment works which included a storage/control building for adding alum to the effluent for phosphorus removal, and the associated injection or mixing station situated at the south edge of cell 3.</p> <p>However, Ministry Staff did not find plans and specifications of the tertiary treatment works in the Ministry's electronic files. Therefore, the DNC JUB is out of compliance with this section.</p>
Compliance:	Out
Actions to be taken:	Submit plans and specifications of the tertiary treatment works, including certification from a qualified professional that the works have been constructed in accordance with the submitted plans, to Authorizations.South@gov.bc.ca.
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.4 De-Chlorination</p> <p>2.4: The effluent shall be de-chlorinated prior to discharge to reduce the total chlorine residual to less than 0.01 mg/L.</p>
Details/Findings:	<p>Non-compliance reports (NCRs) submitted by North Cowichan during the Inspection Period show that the discharge from the Facility exceeded the total chlorine residual limit of 0.01 mg/L, as follows:</p> <ul style="list-style-type: none"> • NCR #6730, date of exceedance: May 11, 2021, total chlorine residual: 0.02 mg/L • NCR #7187, date of exceedance: September 28, 2021, total chlorine residual: 0.02 mg/L • NCR #8131, date of exceedance: March 22, 2022, total chlorine residual: 0.04 mg/L
Compliance:	Out
Actions to be taken:	De-chlorinate effluent prior to discharge to reduce the total chlorine residual to less than 0.01 mg/L.

Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.5 Sludge Reuse and Disposal</p> <p>2.5: Sludge generated by the treatment plant shall be managed in a manner approved by the Regional Waste Manager and in accordance with the sludge management strategies developed in the Central Sector Liquid Waste Management Plan.</p>
Details/Findings:	<p>The Manager of Utilities stated that sludge does not need to be removed from the Facility as it is treated with "Acti-Zyme", which is a biocatalyst product for improved breakdown and digestion of built up sludge in wastewater systems.</p> <p>Section 3 in Appendix 5 of the Central Sector Liquid Waste Manager Plan mentions potential uses of biosolids but does not specifically address sludge management at the Facility.</p> <p>Ministry Staff searched the Ministry's electronic files and did not find an approval for the use of Acti-Zyme for sludge management at the Facility. Therefore, the DNC JUB is out of compliance with this section.</p>
Compliance:	Out
Actions to be taken:	Request approval to use Acti-Zyme for sludge management at the Facility by emailing Authorizations.South@gov.bc.ca
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.6 Posting of Outfall</p> <p>2.6: The Duncan - North Cowichan Joint Utilities Board shall erect a sign along the alignment of the outfall above high water mark. The sign shall identify the nature of the works. The wording and size of the sign requires the approval of the Regional Waste Manager.</p>
Details/Findings:	<p>The Manager of Utilities informed Ministry Staff that the outfall sign is taken down each year from September or October until April of the following year. They explained that the water levels around the outfall sign rise significantly during the fall and winter months, and that if the sign were to be left in place during that time it would be damaged or destroyed.</p> <p>Ministry Staff observed the outfall sign being stored on the ground adjacent to the air blower building. The sign was labelled "OUTFALL" in large black font.</p> <p>Ministry Staff searched the Ministry's electronic files and did not find an approval pertaining to the wording and size of the sign. Therefore, DNC JUB is out of compliance with this section.</p>

Compliance:	Out
Actions to be taken:	Request approval of the wording and size of the sign by emailing Authorizations.South@gov.bc.ca
Requirement Description:	2. GENERAL REQUIREMENTS, 2.7 Outfall Inspection 2.7: The Duncan - North Cowichan Joint Utilities Board shall conduct an inspection of the outfall every five years or as may otherwise be required by the Regional Waste Manager.
Details/Findings:	The Manager of Utilities informed Ministry Staff that the outfall is inspected at least annually in the summer time when water levels in the Cowichan River are low enough to expose the terminus of the outfall.
Compliance:	In
Requirement Description:	2. GENERAL REQUIREMENTS, 2.8 Standby Power 2.8: The Duncan - North Cowichan Joint Utilities Board shall provide auxiliary power facilities to insure that during power outages, the discharge from the authorized works continue to meet the effluent criteria specified in this operational certificate.
Details/Findings:	Ministry Staff observed a backup generator at the Facility during the on-site inspection.
Compliance:	In
Requirement Description:	2. GENERAL REQUIREMENTS, 2.9, Odour Control 2.9: Should objectionable odours, attributable to the operation of the sewage treatment plant, occur beyond the property boundary, as determined by the Regional Waste Manager, measures or additional works will be required to reduce odour to acceptable levels.

Details/Findings:	<p>The Manager of Utilities informed Ministry Staff that North Cowichan received approximately two odour complaints from the public each year, during the summer throughout the Inspection Period. The odours are believed to be caused from shutting off the blowers periodically, which the Manager of Utilities stated they plan to run continuously in the future.</p> <p>Ministry Staff did not find any records in the Ministry's electronic files indicating that measures or additional works are required to reduce odours to acceptable levels. Therefore, compliance with this section was not applicable during the Inspection Period.</p>
Compliance:	Not Applicable
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.10 Effluent Upgrading</p> <p>2.10: Based on receiving environment monitoring data and/or other information obtained in connection with this discharge, the Duncan - North Cowichan Joint Utilities Board may be required to provide additional treatment facilities.</p>
Details/Findings:	<p>Ministry Staff did not find any records in the Ministry's electronic files indicating that the DNC JUB was required to provide additional treatment facilities. Therefore, compliance with this section was not applicable during the Inspection Period.</p>
Compliance:	Not Applicable
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.11 Facility Classification and Operator Certification</p> <p>2.11: The Duncan - North Cowichan Joint Utilities Board shall have the works authorized by this operational certificate classified (and the classification shall be maintained) by the Environmental Operators Certification Program Society (Society). The works shall be operated and maintained by persons certified within and according to the program provided by the Society. Certification must be completed to the satisfaction of the Regional Waste Manager. In addition, the Regional Waste Manager shall be notified of the classification level of the facility and certification level of the operators, and changes of operators and/or operator certification levels within 30 days of any change. Alternatively, the works authorized by this operational certificate shall be maintained by persons who the Duncan - North Cowichan Joint Utilities Board can demonstrate to the satisfaction of the Regional Waste Manager, are qualified in the safe and proper operation of the facility for the protection of the environment.</p>

Details/Findings:	<p>Ministry Staff searched the Environmental Operators Certification Program (EOCP) database and determined that the Facility, referred to as "Joint Utility Board Wastewater Treatment Facility" in the database (facility number 207), was granted Wastewater Treatment (WWT) Level III classification on June 27, 2019, and which expires on January 30, 2024.</p> <p>The Manager of Utilities provided Ministry Staff with the following list of operators for the Facility:</p> <ul style="list-style-type: none"> • Robert Bell - Manager, Utilities, EOCP Level III WWTF, Certificate #878 • Brent Wentz - Foreperson, EOCP Level III WWTF, Certificate #4484 • Vance Beatty - Operator, EOCP Level I WWTF, Certificate #1000799 <p>Ministry Staff searched the EOCP database and verified the above information is correct, and that all operators are in good standing with the EOCP.</p> <p>Ministry Staff did not find any records in the Ministry's files indicating that certification was completed to the satisfaction of the Director, or that the Director was notified of the classification level of the Facility and certification level of the operators. Compliance with this portion of the requirement was not determined.</p> <p>The Manager of Utilities informed Ministry Staff that the previous chief operator at the Facility, James Robinson, retired less than one month ago. North Cowichan is currently in the process of filling the vacancy.</p>
Compliance:	In
Actions to be taken:	Notify the Director of any changes of operators and/or operator certification levels within 30 days of any change.
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.12 Infiltration and Inflow Reduction</p> <p>2.12: The Duncan - North Cowichan Joint Utilities Board shall take measures, in accordance with the strategies developed in the Central Sector Liquid Waste Management Plan, to reduce the inflow and infiltration into the sewage collection system. A report shall be submitted once every year to the Regional Waste Manager that provides details of the measures taken in the preceding year to reduce inflow and infiltration. The first report shall be submitted on or before June 30, 2001.</p>

Details/Findings:	<p>Ministry Staff did not review the Central Sector Liquid Waste Management Plan and the measures taken by the DNC JUB to determine compliance with the first portion of this requirement.</p> <p>Section 6 of the 2020 and 2021 Annual Reports detail measures taken by North Cowichan to reduce inflow and infiltration. The 2020 Annual Report was submitted to the Ministry on April 19, 2021, and the 2021 Annual Report was submitted on May 9, 2022. However, they do not specifically detail measures taken in the preceding years to reduce inflow and infiltration, and therefore the DNC JUB is out of compliance with this section.</p> <p>The annual report for 2022 has not yet been submitted, and therefore compliance with that portion of the Inspection Period was not determined.</p>
Compliance:	Out
Actions to be taken:	Submit a report once every year to EnvAuthorizationsReporting@gov.bc.ca that provides details of the measures taken in the preceding year to reduce inflow and infiltration.
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.</p> <p>2.13: The Duncan - North Cowichan Joint Utilities Board shall develop an Operational Plan, to be prepared by a qualified professional, which provides details for the proper operation and maintenance of sewage conveyance, treatment, disposal and reclaimed water reuse facilities, including the monitoring details. The plan shall provide details of the areas to be irrigated, irrigation schedule and application rates as determined by a registered professional Agrologist. The plan shall be certified by the qualified professional that it is adequate for the works being installed and the water reuse being proposed. The plan shall be submitted to the Regional Waste Manager for review prior to commencement of irrigation using reclaimed water.</p>
Details/Findings:	The Manager of Utilities informed Ministry Staff that the DNC JUB does not have an Operational Plan developed for the Facility.
Compliance:	Out

Actions to be taken:	Develop an operational plan in accordance with this section.
Requirement Description:	<p>2. GENERAL REQUIREMENTS, 2.14 Agricultural and Forest Land Irrigation</p> <p>2.14: Construction and operation of the reclaimed water irrigation facilities shall be in accordance with the Municipal Sewage Regulation Appendix 3 to Schedule 7 - Health and Safety Criteria for Use of Reclaimed Water. Surface ponding and/or runoff due to irrigation is prohibited. Irrigation using reclaimed water is only permitted during the period from April 1 to September 30 and only on the areas identified in the Operational Plan required in Subsection 2.13. Depending on local climatic conditions, the irrigation period may be reduced or extended by the Regional Waste Manager.</p>
Details/Findings:	The Manager of Utilities informed Ministry Staff that water has never been reclaimed at the Facility, and that reclaimed water irrigation facilities have not been constructed. Therefore, compliance with this section was not applicable during the Inspection Period.
Compliance:	Not Applicable
Requirement Description:	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.1 Discharge Monitoring, 3.1.1 Sampling and Analysis</p> <p>3.1.1: The Duncan - North Cowichan Joint Utilities Board shall install a suitable facility and obtain samples of the effluent for analysis as follows: Parameter; Frequency; Sample Type 5-day Biochemical Oxygen Demand; monthly; grab Total Suspended Solids; monthly; grab Ammonia Nitrogen (N); monthly; grab Ortho Phosphate Phosphorus (P); monthly; grab Total Phosphorus; monthly; grab Fecal Coliform; monthly; grab Toxicity; quarterly; grab Additionally, during the discharge of reclaimed water to agricultural and forest land for irrigation, effluent samples shall be collected and analysed in accordance with the following schedule: Parameter; Frequency; Sample Type Fecal Coliform; weekly; grab pH; weekly; grab</p>
Details/Findings:	<p>The WQ Reports show that effluent was not analyzed in accordance with this section during the Inspection Period, as follows:</p> <ul style="list-style-type: none"> • Ortho Phosphate Phosphorus (P) was not analyzed monthly. • Fecal Coliforms were not analyzed in August 2020, January 2021, July 2021, August 2021, November 2021, December 2021, January 2022, and March 2022. <p>However, the Manager of Utilities provided Ministry Staff with the Tabulated Data on March 1, 2023, which included analytical results for the above parameters and dates.</p>

Compliance:	In
Requirement Description:	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.1 Discharge Monitoring, 3.1.2 Flow Measurement</p> <p>3.1.2: Provide and maintain a suitable flow measuring device and record once per day the effluent volume discharged to the Cowichan River and to the reclaimed water irrigation facilities over a 24-hour period.</p>
Details/Findings:	<p>Ministry Staff observed the flow measuring device in a chamber adjacent to the inflow end of the outfall. The Manager of Utilities confirmed the device is a Endress Hauser Proline Promag W400 flow meter.</p> <p>The WQ Reports show that the effluent volume discharged over a 24-hour period was recorded once per day during the Inspection Period.</p>
Compliance:	In
Requirement Description:	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.2 Receiving Environment Monitoring, 3.2.1 Sampling Stations</p> <p>3.2.1: The permittee shall establish and maintain two Cowichan River monitoring stations as follows: Station #1: Approximately 50 m upstream of outfall PE-01497; Station #2: Approximately 200 m downstream of outfall PE-01497. The exact sampling locations are subject to the approval of the Regional Waste Manager.</p>
Details/Findings:	<p>Section 5 of the 2020 and 2021 Annual Reports confirm that North Cowichan established and maintained a monitoring station at approximately 50 m upstream of the outfall. Both reports note that "operators had a difficult time safely accessing the 200m downstream site for a portion of the year due to down trees. Therefore, during this period some of the sampling was conducted at the 600m downstream site (Quamichan Village)."</p>
Compliance:	Out

<p>Actions to be taken:</p>	<p>Ministry Staff did not find any records in the Ministry's electronic files indicating that the modified sampling location was approved by the Director.</p> <p>Request approval of the exact sampling locations by emailing Authorizations.South@gov.bc.ca</p>
<p>Requirement Description:</p>	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.2 Receiving Environment Monitoring, 3.2.2 Sampling and Analyses</p> <p>3.2.2: (a) Substrate Sampling The permittee shall collect a sample of the substrate at three sampling sites at each station once during the first 10 days of August each year, once during the third week of August each year and once during the first 10 days of September each year, commencing in the year 2001. Each sample shall be analyzed for Chlorophyll-a.</p> <p>(b) River Water Sampling The permittee shall collect a sample of the river water at each station and a sample of the authorized discharge once during the first 10 days of August each year, once during the third week of August each year and once during the first 10 days of September each year, at the same time the substrate samples are collected, commencing in the year 2001. Obtain analyses of the samples for the following: Total Phosphorus (P); Ortho Phosphorus (P); Total Nitrogen (N); Ammonia Nitrogen (N); pH; Temperature.</p>

Details/Findings:	<p>The 2020 and 2021 Annual Reports show that samples of the substrate at three sampling sites at each station were collected and analyzed for chlorophyll-a once during the first 10 days of August, once during the third week of August, and during the first 10 days of September in 2020 and 2021. However, no substrate samples were collected and analyzed for chlorophyll-a during the first 10 days of August at the upstream sampling site (Station #1).</p> <p>The 2020 Annual Report shows that river water samples were collected in 2020 concurrently with the substrate samples, and subsequently analyzed for total phosphorus (P), ortho phosphorus (P), total nitrogen (N), ammonia nitrogen (N), pH, and temperature, with the following exceptions:</p> <ul style="list-style-type: none"> • No samples were collected and analyzed for ammonia nitrogen at the downstream sampling site. • No sample was collected and analyzed for pH during the third week of August at the upstream sampling site. • No sample was collected and analyzed for pH during the first 10 days of August or the third week of August at the downstream sampling site. • No sample was collected and analyzed for temperature during the first 10 days of September at the upstream sampling site. • No samples were collected and analyzed for total nitrogen. <p>The 2021 Annual Report shows that river water samples were collected in 2021 concurrently with the substrate samples, and subsequently analyzed for total phosphorus (P), ortho phosphorus (P), total nitrogen (N), ammonia nitrogen (N), pH, and temperature, with the following exceptions:</p> <ul style="list-style-type: none"> • No sample was collected and analyzed for total phosphorus during the third week of August at the upstream sampling site. • No sample was collected and analyzed for ortho phosphorus during the first 10 days of September at the downstream sampling site. • No sample was collected and analyzed for ammonia nitrogen during the third week of August at the downstream sampling site. • No samples were collected and analyzed for ammonia nitrogen at the downstream sampling site. • No samples were collected and analyzed for total nitrogen. <p>The annual report for 2022 has not yet been submitted to the Ministry; therefore, compliance with that portion of the Inspection Period was not determined.</p> <p>As described above, the substrate and river water sampling and analysis was not completed in accordance with this section; therefore, the DNC JUB is out of compliance with this section.</p>
Compliance:	Out
Actions to be taken:	Complete the substrate and river water sampling and analysis in accordance with this section.

Requirement Description:	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.3 Monitoring Procedures, 3.3.1 Sampling and Analytical Procedures</p> <p>3.3.1: Flow Measurement shall be carried out in accordance with the procedures described in "Field Criteria for Sampling Effluents and Receiving Waters", April 1989, or by suitable alternative procedures as authorized by the Regional Waste Manager. Copies of the above manual may be obtained from the Environmental Protection Division, Ministry of Water, Land and Air Protection, P.O. Box 9342, Stn. Prov. Govt. Victoria, British Columbia V8W 9M1. The manual is also available for review at all Environmental Protection Offices.</p>
Details/Findings:	<p>Ministry Staff did not review the procedures employed at the Facility for measuring flow. Therefore, compliance with this section was not determined for the Inspection Period.</p>
Compliance:	<p>Not Determined</p>
Requirement Description:	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.3 Monitoring Procedures, 3.3.2</p> <p>3.3.2: Sampling shall be carried out in accordance with the procedures described in the "British Columbia Field Sampling Manual for Continuous Monitoring Plus the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples. 1996 Edition (Permittee)", or by suitable alternative procedures as authorized by the Regional Waste Manager. Analyses are to be carried out in accordance with procedures described in the "British Columbia Environmental Laboratory Manual for the Analysis of Water, Wastewater, Sediment and Biological Materials (March 1994 Permittee Edition)", or by suitable alternative procedures as authorized by the Regional Waste Manager. Copies of the above manuals may be purchased from the Queen 's Printer Publications Centre, P. O. Box 9452, Stn. Prov. Gov't. Victoria, British Columbia, V8W 9V7 (1-800-663-6105 or (250) 387-6409), and are also available for inspection at all Environmental Protection offices.</p>
Details/Findings:	<p>Ministry Staff did not observe or review the sampling procedures employed at the Facility. Therefore, compliance with this section was not determined for the Inspection Period.</p>
Compliance:	<p>Not Determined</p>

Requirement Description:	<p>3. MONITORING AND REPORTING REQUIREMENTS, 3.4 Reporting</p> <p>3.4: Maintain data of analyses and flow measurements for inspection and every quarter submit the data, suitably tabulated, to the Regional Waste Manager for the previous quarter. The first report is to be submitted by June 30, 2001. Based on the results of the monitoring program, the Duncan - North Cowichan Joint Utilities Board monitoring requirements may be extended or altered by the Regional Waste Manager. An annual report shall be prepared by an independent qualified professional which includes a summary and interpretation of the discharge and receiving environment monitoring results for the previous year. The report shall provide an assessment of the impact of this discharge on the receiving environment and recommended changes (if any) to the monitoring program. The first report shall be submitted by December 31, 2002.</p>
Details/Findings:	<p>The Ministry's electronic records show that North Cowichan did not submit data of analyses and flow measurements in accordance with this section on the following occasions:</p> <ul style="list-style-type: none"> • Data for Q1 - Q3 2021 was not submitted until March 9, 2022. • Analytical results for ortho phosphate phosphorus (P) were not included in any of the WQ Reports. • Analytical results for ammonia nitrogen were not included in the WQ Report for Q2 and Q3 2020. • Analytical results for fecal coliforms were not included in the WQ Reports for August 2020, January 2021, Q2 2021, July 2021, August 2021, November 2021, December 2021, January 2022, and March 2022. • Toxicity results were not included in the WQ Reports for Q2 and Q3 2020 and Q1 - Q3 2022. <p>The Manager of Utilities provided the above information to Ministry Staff in the Tabulated Data via email on March 1, 2023.</p> <p>The 2020 and 2021 Annual Reports provide a summary and interpretation of the discharge and receiving environment monitoring results for the previous year, as well as an assessment of the impact of the discharge on the receiving environment. No recommended changes to the monitoring program are included in the reports. The Annual Reports were prepared by the Manager of Utilities, not an independent qualified professional.</p> <p>As data of analyses were not submitted quarterly and the annual reports were not prepared by an independent qualified professional, the DNC JUB is out of compliance with this section.</p>
Compliance:	Out
Actions to be taken:	<p>Maintain and submit data of analyses and flow measurements quarterly to EnvAuthorizationsReporting@gov.bc.ca</p> <p>Ensure that annual reports are prepared by an independent qualified professional in accordance with this section.</p>

Compliance History:

- 2020-04-16 IR 147828 Advisory: AUTHORIZED DISCHARGES 1.1.2; 1.1.3, De-Chlorination 2.4, Reporting 3.4
- 2017-03-02 IR 49627 Notice:

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 A, Advisory**.

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:

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

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

<https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/comply>

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

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

Yours truly,

Jesse Francisco
Environmental Protection Officer

Attachments:

Deliver via:

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

**Ministry of Environment
and Climate Change
Strategy**

Compliance and
Environmental
Enforcement Branch

Mailing Address:
2080-A
Labieux Rd
Nanaimo BC V9E 6J9

Telephone: 250 751 3100
Facsimile: 250 751 3103
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.