Village of Hines Creek Council
Request for Decision (RFD)

Meeting:	Regular Council Meeting
Meeting Date:	February 13, 2020
Originated By:	Leanne Walmsley, Chief Administrative Officer
Title:	New Business – Alberta Environment Waterworks Inspection Report
File:	0305 & 0307

BACKGROUND/PROPOSAL:

On January 24, 2020 James McCallum from Alberta Environment came and preformed an annual inspection on our Water Treatment Plant.

Attached is the Inspection Report for your review.

DISCUSSION/OPTIONS/BENEFITS/DISADVANTAGES

COSTS/SOURCE OF FUNDING (if applicable)

RECOMMENDED ACTION:

That Council receive the 2020 Alberta Environment Annual Inspection Report for information.

Initials show support- Reviewed by:	Manager:	C.A.O.

AEP WATERWORKS

INSPECTION REPORT

Submitted

Health Risk: PASS
Operational Risk: PASS
Administrative Risk: PASS

Waterworks System Name: Hines Creek
Approval Registration# 783-03-01
Approval Holder: Village of Hines Creek
Approval Expiry Date: 2025-10-01
Plant Classification (Type): Surface Water
Plant Classification (Level): WT Level 2 (Water Treatment) WD Level 1 (Water Distribution)

FACILITY

Address: Street: 212 10 Street PO Box 421
Town: Hines Creek Province: AB Postal Code: T0H 2A0
Facility Contact Number: 780 - 494 - 3315
Facility Emergency Contact Number: 780 - 835 - 1329
Facility Location GPS: Latitude: (e.g. 51.1235) 56.248263
Longitude: (e.g.-114.2168) 118.602345
Diversion Location GPS: Latitude: (e.g. 51.1235)
Longitude:(e.g.-114.2168)
Water Diversion Licence No:
Municipal/Industrial Facility: Municipal
Source: Jack Creek
Daily Peak Flows (m3): 293
Population served: 373
Number of Connections: 200
Renewal Application Submitted(yes/no): Yes ○ No: ◉
Daily Average Flows (m3): 120

OPERATOR AND INSPECTOR

Operator's Certification Level: (Interviewed only)

Operator's Name: Jason Cox
Select Water Treatment Certification Level: WT Level 2
Select Water Distribution Certification Level: WD Level 1
Inspector's Name: James.McCallum
Inspector's District: PR
Inspection Number: January2019
Date and Time of Inspection: 2020-01-24 10:15 AM
Date of previous Inspection:

GENERAL CONDITIONS

A. Are there any Short-Term Approval Conditions? Yes ○ No ◉ (If Yes, answer B & C)

B. What are the Short Term Approval Condition required due dates?

C. Have these Short Term Approval Conditions been achieved?

D. Have there been any changes to the waterworks system since the last AEP inspection?

INSPECTION SUMMARY COMMENTS

Health Risk Assessment Questions

1 Are chlorine/ozone residual and contact time (CT) ratio requirements met entering the distribution system at the point where CT is calculated? This question applies to all waterworks facilities that have chlorine/ozone residual and contact time limits (for either Giardia and/or viruses) specified in their Approval or Code of Practice (COP) Registration.

- ○ N/A
- ○ 1. Unreported failure to achieve Approval/COP limit.
- ○ 2. Reported failure to achieve Approval/COP limit but appropriate follow up actions were not taken by the operator(s) and a drinking water safety concern resulted.
- ○ 3. Meets Approval/COP limits at all times or if a contravention is reported the incident response resolved the issue so that no drinking water safety concerns resulted.
- ◉ 4. Meets best practice with chlorine residuals between 0.2-2.00 mg/L at the point that CT's were achieved and all CT Disinfection ratios were greater than 1.0.

Comments:
0.65 - 1.58 mg/l free chlorine residual; 5 - 23 daily calculated CT Ratio values (May 2019). Daily free and total chlorine residual monitoring conducted.

2 Are treated water turbidity (prior to entering clearwell reservoir) limits met?

- ○ N/A
- ○ 1. Unreported failure to achieve approval limit.
- ○ 2. Reported failure to achieve Approval/COP limit but appropriate follow up actions were not taken by the operator(s) and a drinking water safety concern resulted.
- ○ 3. Meets approval limits for the monitoring required or if a turbidity contravention is reported the incident response resolved the issue so that no drinking water safety concerns resulted.
- ◉ 4. The waterworks system has been upgraded to meet AEP's 2012 Standards and Guidelines for turbidity reduction for each filter (i.e. <0.3 NTU for dual media filtration systems or <0.1 NTU for membrane filtration systems in 99% of the samples) with continuous monitoring and data capture off each filter are in place to verify that treated water turbidity limits were met. The system also has filter to waste capability.

Comments:
0.01 - 0.04 NTU (May 2019).

3 Are UV disinfection approval requirements met (Typically includes UV reactor flow limits, UV transmittance (%T) limits and UV dose limits)?

- ◉ N/A
- ○ 1. Unreported failure to achieve Approval limit.
- ○

2. Reported failure to achieve Approval/COP limit but appropriate follow up actions were not taken by the operator(s) and a drinking water safety concern resulted.

○ 3. Meets Approval limits at all times or if a contravention is reported the incident response resolved the issue so that no drinking water safety concerns resulted.

○ 4. Meets Approval limits at all times for UV reactor flow, UV dosage, and UV transmittance with alarms and system shutdowns in place to prevent any improperly UV disinfected water from entering the clearwell/distribution system. The approval/registration holder calibrates the UV sensor against a reference sensor on an annual basis (this device will compare the UV sensor dose generated by the reactor to a reference standard).

Comments:

No UV disinfection at this waterworks system.

4 Is the operator's certification (includes back-up operators) appropriate for the facility?

○ N/A

○ 1. Operator(s) is under certified with no supervision (or back-up) by an appropriately certified operator.

○ 2. Operator(s) is under certified and is working under the remote supervision of an appropriately certified operator(s) but does not meet the requirements of the 'Waterworks Systems Attendance' section of the Water and Wastewater Operators' Certification Guidelines.

○ 3. Attending operator(s) is certified to the level of the facility and meets the requirements of the 'Waterworks Systems Attendance' section of the Water and Wastewater Operators' Certification Guidelines. Back-up operator(s) can be under certified, but working under the direction of a certified operator(s).

◉ 4. For each level of certified operator required by the Approval or Code of Practice an equivalent number of certified operators must be available as back up. Note: A conditional certificate can't be used to achieve a rating of four.

Comments:

Two Water Treatment II Operators.

5 Are Approval/Code of Practice (COP) chlorine residual (secondary disinfection in the distribution system) limits met?

○ N/A

○ 1. Unreported failure to achieve Approval/COP limit.

○ 2. Reported failure to achieve Approval/COP limit but appropriate follow up actions were not taken by the operator(s) and a drinking water safety concern resulted.

○ 3. Meets Approval/COP limits at all times or if a contravention is reported the incident response resolved the issue so that no drinking water safety concerns resulted.

		◉ 4. Meets best practices (residuals between 0.1 – 2.0 mg/L) at all times.

Comments:

1.01 - 1.32 mg/l free chlorine residual (May 2019). Daily free and total chlorine residual monitoring conducted.

		○ N/A
		○ 1. Unreported failure to meet bacteriological monitoring frequency requirement.
6	Is the monitoring frequency being met for treated water bacteriological sampling in the distribution system as specified by the approval or COP registration, the "Guidelines for Canadian Drinking Water Quality (GCDWQ)" and "Action Protocol for Failed Bacteriological Sampling Results in Drinking Water" (Bac-T protocol)? Notes: - for Code of Practice for a Waterworks System Consisting Solely of a Water Distribution System for a small water system (less than 1500 people and less than 10 km of distribution system), only 1 sample per 500 population per month. - it is not considered additional bacteriological monitoring when bacteriological samples are collected once per week and 5 sample weeks occur in the month.	○ 2. Reported failure to meet required bacteriological monitoring but appropriate follow up actions were not taken by the operator(s) and a drinking water safety concern resulted. ○ 3. The bacteriological monitoring conducted in the distribution system consists of evenly spaced, weekly samples collected throughout the distribution system as specified or if a contravention is reported the incident response resolved the issue so that no drinking water safety concerns resulted. ◉ 4. In addition to the requirements in 3, additional monthly bacteriological monitoring is conducted in each month of the year in the distribution system, in conjunction with chlorine residual monitoring. Re-samples and samples collected after repairs have been made in the distribution system are not counted for the purposes of additional compliance monitoring.

Comments:

Two water distribution system bacteriological samples collected each week.

		○ N/A
7	Were emergency situations (such as failure to meet chlorine/ozone residual limits, contact times, ultra violet disinfection limits, membrane log reduction credits, turbidity limits, bacteriological quality requirements, loss of positive pressure, etc.) & nbsp;dealt with as required by the Approval, Code of Practice (COP), or legislation? Definition: an emergency is defined as a situation where one or more of the treatment or disinfection barriers (coagulation, filtration, chlorine, ozone or UV) fail, an exceedance of the treated water quality limits specified in the approval/COP or an issue in the water distribution system that has or may, impact potable water quality (i.e. reservoir contamination, major or uncontrolled loss of pressure or possible contamination of water supply). This includes when a Boil Water Advisory or Water Use Advisory has been issued by Alberta Health Services.	○ 1. Operators did not recognize emergency situations where action was mandated or failed to take the appropriate actions necessary to address emergency situations. ○ 2. Some emergency actions taken, but not as required. ○ 3. Appropriate emergency actions taken as required, and reported in a complete and timely manner. ◉ 4. No emergency actions were necessary during the previous two (or more) years or where emergency actions were required the Drinking Water Safety Plan was reviewed and/or revised to reflect the lessons learned from the emergency incident.

Comments:

8	Have Approval/Code of Practice (COP) and Potable Water Regulation contraventions for the primary assessment been properly reported?	○ N/A ○ 1. Have had unreported contraventions, or operator(s) failed to notice when contraventions occurred that should have been reported.

- ○ 2. Contraventions are reported but not as required (i.e. no written report(s) submitted, late reports, incomplete reports, or reports sent to the wrong location).
- ○ 3. Contraventions reported properly with complete and appropriate written follow-up that resulted in the resolution of the issue(s) or no health related contravention reports were required during the reporting period
- ◉ 4. In addition to the requirements of point 3 above, contraventions are tracked and reviewed to identify any reoccurring incidents or issues in an effort to minimize or prevent future reoccurrences.

Comments:

HEALTH RISK ASSESSMENT: **PASS**

HEALTH RISK ASSESSMENT COMMENTS:

Operational Risk Assessment Questions

9 Is the monitoring equipment (portable, bench top, and continuous on-line meters) used to verify compliance properly maintained and calibrated? Has a data validation program been implemented and is it being followed? These components are to be completed by a qualified person(s). Notes: - the data validation portion of this question does not apply to those waterworks systems that do not use continuous monitoring equipment to verify compliance with their Approval or COP Registration. -All continuous monitoring equipment including turbidity/chlorine meter readings, flow rates, volumes, particle counts, UV Intensity/dose and Transmittance readings, etc., must be validated to ensure that the results reflect the actual quality of the water being sampled. Examples of erroneous data results are when air bubbles in the turbidity meter affect the readings or when reduced/increased sample flow through the chlorine residual analyzer or turbidity meter changes the readings. - A data validation program should also include an established protocol to compare continuous analyzer results with those of another representative sample and with tolerance limits established for how far apart the comparison readings shall be. Examples where comparable grab sample results are easily attainable include chlorine residuals, filter turbidity and UV transmittance readings.

- ○ N/A
- ○ 1. Equipment maintenance, calibration or accuracy checks are not being completed.
- ○ 2. Some equipment maintenance, calibration or accuracy checks are being completed but supporting documentation is incomplete.
- ○ 3. Annual equipment maintenance, calibration or accuracy checks (on meters utilized for compliance monitoring) have been completed with supporting documentation available.
- ◉ 4. All monitoring equipment reflects best available technology, maintenance, and calibration is done annually by a qualified person(s), and accuracy checks (i.e. using primary or secondary standards) are performed at minimum on a monthly basis, and all supporting documents are available as verification. Definition: a qualified person is an instrumentation technician, a representative of the manufacturer of the instrument(s) or an operator certified to the level of the waterworks.

Comments:
Annual Hach Canada service/maintenance cycles. Next due September 2020.

10 Were treated water sample(s) taken as required, for all listed parameters at the required frequency and location and analyzed by a lab that is accredited to ISO/IEC 17025 standard for the parameters (accrediting bodies are CALA (Canadian Association for Laboratory Accreditation) or Standards Council of Canada)?

- ○ N/A
- ○ 1. Samples were not taken.

2. Samples were taken, but did not meet frequency requirements and/or include all parameters.

○ 3. All required samples were taken at the required frequency and analyzed for the required parameters by an appropriately accredited lab. The approval holder reviewed and understood the lab sample results and immediately reported any results which exceed the Maximum Acceptable Concentration values.

◉ 4. In addition to point 3 all applicable parameters with maximum acceptable concentrations (MAC) and aesthetic objectives (AO) are being trended to show if water quality is changing over time (To show if any of the parameters tested are increasing/decreasing from historical values).

Comments:
ALS Laboratories used; 2019 sampling/analyses year completed.

11 Does treated water meet the GCDWQ parameters based on the sampling required for the facility?

○ N/A

○ 1. One or more parameters exceed the Maximum Acceptable Concentration (MAC), or required MAC sampling data is incomplete.

○ 2. All Maximum Acceptable Concentration requirements are met except Trihalomethanes (THMs), Halo Acetic Acids (HAA's), or bromate where required or one of the above parameters were missed.

○ 3. All Maximum Acceptable Concentration requirements are met for the parameters required to be tested

◉ 4. All Maximum Acceptable Concentration and Aesthetic Objective (AO) requirements are met. (Note: For a water distribution system to achieve a (4) rating additional sampling is required by the registration holder or the most recent sample results from their treated water supplier are to be obtained and provided to AEP).

Comments:
No GCDWQ exceedances noted.

12 Are filter(s) effluent turbidity monitoring (entering clearwell reservoir) requirements met?

○ N/A

○ 1. No filter effluent turbidity monitoring

○ 2. Common header turbidity (continuous/grab) monitoring.

○ 3. Individual filter continuous monitoring or meets approval requirements.

◉

4. Individual filter continuous turbidity monitoring with data trending, limit alarms and system shutdowns (before the turbidity exceeds the approval limits). Definition: data trending is the recording of continuous analyzer results in a format that enables the operator to look back over time and see the values produced by an analyzer (at a minimum of 5 minute intervals). This verifies that the data produced by the continuous analyzer is valid.

Comments:
Continuous turbidity and particle count monitoring.

13 Are treated water chlorine residual monitoring (entering distributon system at the point where CT's have been achieved) Approval/COP requirements met?

- ○ N/A
- ○ 1. Chlorine residual monitoring not conducted.
- ○ 2. Chlorine residual monitoring conducted, but not with adequate frequency.
- ○ 3. Continuous chlorine residual monitoring conducted or meets approval/COP requirements.
- ◉ 4. Continuous chlorine residual monitoring is conducted with data trending, limit alarms and operator call outs when limits are not met. Operators are using the lowest chlorine residual (off the continuous analyzer) for the day to calculate their CT disinfection ratio. Definition: data trending is the recording of continuous analyzer results in a format that enables the operator to look back over time and see the values produced by an analyzer (at a minimum of 5 minute intervals). This verifies that the data produced by the continuous analyzer is valid.

Comments:
Continuous free chlorine residual monitoring.

14 Are treated water chlorine residual monitoring (in the distribution system) requirements met?

- ○ N/A
- ○ 1. Chlorine residual monitoring frequency not met.
- ○ 2. Some distribution system chlorine residual monitoring is conducted, but not at random locations throughout the system.
- ○ 3. Required approval/Code of Practice (COP) distribution system chlorine residual monitoring conducted at random locations throughout the distribution system.
- ◉ 4. Additional daily distribution system chlorine residual monitoring is routinely conducted, with excellent representative coverage of the entire system. Definition: additional daily monitoring means that chlorine residuals are monitored, one or more days, per week than what is required by the approval or COP.

Comments:

Daily free/total chlorine residual monitoring.

15 Is the approval/registration holder diligent in ensuring that all bacteriological sampling is done properly - as determined by the Bac-T Protocol and the Environmental Public Health Field Manual for Private, Public and Communal Drinking Water Systems in Alberta?

- ○ N/A
- ○ 1. Bacteriological re-sampling required due to initial sampling error (total coliforms or E. coli present) and operator did not follow the Bac-T Protocol when re-sampling, or poor re-sample techniques were used resulting in additional false positives.
- ○ 2. Bacteriological re-sampling required due to operator sampling error (total coliforms or E. coli present) but operator followed the Bac-T Protocol. There are ongoing issues with sample management and delivery (i.e. no ice packs included, incorrect labelling, courier issues, etc.).
- ◉ 3. All bacteriological samples are collected and submitted properly with no repeat samples required as a result of operator sampling errors. If bacteriological re- sampling was required due to the presence of total coliforms or E. coli the operator followed the Bac-T Protocol and no other sample management issues were identified. A Bacteriological Quality Monitoring Plan has been developed as part of the Operations program.
- ○ 4. All bacteriological samples are collected and submitted properly with no repeat samples required or samples rejected as a result of sample management issues. The system operator is following the Bacteriological Quality Monitoring Plan as set out in their Operations Program (i.e. where, when and how to sample).

Comments:

Extra bacteriological samples submitted to ensure minimums are met in the event of rejected samples at the Provincial Laboratory.

16 Are treated water fluoride concentration limits and monitoring requirements met?

- ◉ N/A
- ○ 1. Fluoride monitoring not conducted and/or unreported Approval/COP (Code of Practice) limit failure occurred.
- ○ 2. Fluoride monitoring conducted, but not with adequate frequency and/or reported Approval/COP limit failure occurred.
- ○ 3. Daily fluoride grab monitoring conducted and limits meet requirements of Approval/COP or if a contravention is reported the incident response resolved the issue so that no drinking water safety concerns resulted.
- ○ 4. In addition to the requirements of (3) above, the Approval/Registration Holder is splitting their samples and submitting (at least on a monthly basis) a fluoride sample to an accredited lab for comparison analysis.

Comments:

No fluoridation at this waterworks system.

17 Are system water volumes metered?

- ○ N/A

- ○ 1. No metering of water volumes.
- ○ 2. Facility influent or effluent water volumes metered.
- ◉ 3. Facility influent (from the source) and effluent water volumes metered.
- ○ 4. Facility influent and effluent water volumes metered, including backwash/filter to waste volumes (or calculate) and a full water distribution system metering program is in place. Water balancing is conducted and a program is in place to address water losses that occur throughout the waterworks system (plan to systematically replace leaking valves, water lines, etc.).

Comments:

Some commercial customers are metered.

18 Are the chemicals used at the Water Treatment Plant (includes both direct and indirect additives) listed and used as specified by ANSI (American National Standards Institute)/NSF (National Sanitation Foundation) Standard 60 or IISO/IEC 9000 or ISO (International Standards Organization)/IEC 14001?

- ○ N/A
- ○ 1. Not all of the chemicals used at the facility are listed in the ANSI/NSF Standard and/or the operator is not aware of this requirement.
- ○ 2. All of the chemicals used at the facility are listed in the ANSI/NSF Standard, but the chemical feed dosage exceeds the dosage specified as the Maximum Use Limit (specified in NSF Standard 60) or the limits set out in a Letter of Authorization (LOA) issued by the Director.
- ○ 3. All of the chemicals are specified in the ANSI/NSF Standard and the chemical feed dosages do not exceed the dosage specified as the Maximum Use Limit (MUL) or the Letter of Authorization limits.
- ◉ 4. In addition to meeting the requirements of (3) above, all chemicals are stored properly with spills immediately cleaned up, secondary containment in place around the chemical storage area and current SDS records are kept on site. Operator(s) is aware of the Maximum Use Limits for all the chemicals added to the water supply.

Comments:

ClearTech supplies chemicals. SDS's are maintained and kept in water treatment facility lab/office.

19 Have Approval/Code of Practice (COP) and Potable Water Regulation contraventions for the secondary assessment been properly reported?

- ○ N/A
- ○ 1. Have had unreported contraventions, or operator(s) failed to notice when contraventions occurred that should have been reported.
- ○ 2. Contraventions are reported but not as required (i.e. no written report(s) submitted, late reports, incomplete reports, or reports sent to the wrong location).
- ○ 3. Contraventions reported properly with complete and appropriate written follow-up that resulted in the resolution of the issue(s) or no contravention reports were required as the facility was operated to meet Approval/COP requirements.
- ◉ 4. Addition to the requirements of point 3 above, contraventions are tracked and reviewed to identify any reoccurring incidents or issues in an effort to minimize or prevent future reoccurrences.

Comments:

OPERATIONAL RISK ASSESSMENT: **PASS**

OPERATIONAL RISK ASSESSMENT COMMENTS:

Administrative Risk Assessment Questions

20 Have preventative maintenance measures been established in the distribution system and treated water reservoir(s) to minimize adverse effects to water quality? Preventative maintenance program includes: a protocol that outlines when/how valves are to be exercised (annual exercising is recommended), a protocol for the scouring of water mains by high velocity unidirectional flushing, pigging of water mains or by other means, inspection/cleaning of clearwells/reservoirs, installation/inspection of backflow preventers (AEP Standards require backflow preventers at the entry into the waterworks system or at a truck fill station), a cross connection control program, a protocol for the return to service of a water main that has been repaired or for a newly installed water main.

- ○ N/A
- ○ 1. No scheduled maintenance program (valve exercising, water main flushing, treated water reservoir inspection) for the distribution system and treated water reservoir (s). Backflow preventers or air gaps are not installed on truck fill. No cross connection control program is in place.
- ○ 2. Distribution system maintenance and treated water reservoir inspection completed but no documentation is available to demonstrate when it was completed and/or water main breaks occur each year resulting in a widespread loss of positive pressure and interruption of key water services.
- ○ 3. Distribution system maintenance and treated water reservoir inspection completed with supporting documentation available to demonstrate when it was completed. Cross connection (connections with a wastewater system, a storm water system or another unapproved waterworks system) control inspection program is in place. Documented return to service protocol in place for new and repaired water mains.
- ◉ 4. A full preventative maintenance program is in place that includes the requirements of point 3 as well as the completion of the following: a documented uni-directional flushing program, water valves to isolate water lines for repairs are located and exercised to ensure they are operational, documentation of a water main and valve replacement schedule and future life expectancy is completed. The water distribution system infrastructure has the ability to maintain service to the rest of the community, and minimize disruption to consumers, while repairs are conducted on isolated sections (i.e. looped water lines to allow water to be distributed from multiple directions).

Comments:
Annual (Fall) fire hydrant flushing program. Village Fire Department participates.

21 Are raw water wells located, protected, and maintained in a sanitary manner (including Groundwater Under Direct Influence Systems)? Definition: a preventative well maintenance program includes but not limited to: documented regular well site inspections, documentation of when the last shock chlorination occurred, when the next one is due, documented protocol, schedule for pulling the well pump and screen for inspection and/or cleaning.

- ◉ N/A
- ○ 1. The well(s) are in a poor location (low lying area, in close proximity to a watercourse, subject to runoff, accessible by livestock, or subject to contamination from other sources (i.e. manure is being spread close to the well site).
- ○

2. The well(s) are in a good location but do not have protection measures in place (fencing, caplocks installed, well head is accessible for maintenance, well casing is vented, casing(s) that extend above the snowline, or have watertight caps, etc.).

○ 3. The well(s) are in a good location with protection measures in place (fencing, caplocks installed, well head is accessible for maintenance, well casing is vented, casing(s) that extend above the snowline, or have watertight caps, etc.).

○ 4. The well(s) are in a good location, protection measures are in place, and a documented preventative maintenance program is in place and is being followed.

Comments:
Surface water system.

22 Do the operators demonstrate awareness of applicable legislation as required in the operators' Code of Conduct (Approval or Registration under the Code of Practice, the Potable Water Regulations (PWR) and AEP Standards and Guidelines (Standards))?

○ N/A

○ 1. Approval/COP, PWR and Standards not immediately available and operator cannot demonstrate awareness of requirements.

○ 2. Approval/COP, PWR and Standards are available, however operator is not aware of the requirements.

○ 3. Approval/COP, PWR and Standards documents were available at the time of inspection and the operator is aware and following the requirements.

◉ 4. Approval/COP, PWR and Standards were available at the time of inspection and all operators are aware of and following the requirements. All operators have completed a review of the Approval/COP and have signed off on the review.

Comments:

23 Were reports (monthly and annual) properly compiled and submitted on time?

○ N/A

○ 1. No reports and no records are available.

○ 2. Reports and records retained, but do not include all required information; either the monthly or annual report was incomplete. Required monthly e-reporting not completed.

○ 3. Complete reports were properly and accurately compiled, retained and available or submitted as required. This includes the electronic submission of annual reports to the correct district address as specified by the AEP Report Submission Guidelines and if applicable monthly data is being submitted electronically to the AEP drinking water quality website.

◉

4. In addition to all the requirements of (3) above, the annual report includes: a cover page, the name and approval/registration number of the waterworks facility, a list of all the operators currently working (or had worked) at the waterworks in that year, the date the Annual report was submitted to AEP, the date(s) of when the DWSP was updated and the signature of person in charge of the waterworks system.

Comments:

24 Is the Operations Program completed as per the Approval/Code of Practice

- ○ N/A
- ○ 1. The operations program has not been started.
- ○ 2. The operations program has been started but is not complete.
- ○ 3. The operations program is completed and readily available for AEP to review.
- ◉ 4. The operations program is completed, being followed, reviewed annually and signed off by all staff involved in the operation of the waterworks system.

Comments:
Completed.

25 Is the Drinking Water Safety Plan completed as per the Approval/Code of Practice (COP)? Completed means in accordance with the requirements in the Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems; Part 1 Standards for Municipal Waterworks (2012), as amended. It also means that the completed Drinking Water Safety Plan has been presented to and reviewed by the person(s) responsible for the operation of the waterworks system (this could include the CAO, mayor, reeve, council, system owner, condo board, president of the water co-op, etc.)

- ○ N/A
- ○ 1. The Drinking Water Safety Plan has not been started.
- ○ 2. The Drinking Water Safety Plan has been started but is not complete.
- ○ 3. The Drinking Water Safety Plan has been completed, is updated as required by the authorization, and is readily available for AEP to review.
- ◉ 4. Drinking Water Safety Plan has been completed, reviewed annually, and signed off by all staff involved with the waterworks system. Actions have been taken to address one or more key risks that have been identified (if applicable).

Comments:
Completed.

26

- ○ N/A
- ○ 1. The Approval/Registration holder is submitting data results to AEP without validation to ensure that they reflect actual water quality.
- ○

Are the data results of the on-line or continuous monitoring equipment (applies to any approval parameter that has a limit and is required to be continuously monitored - this includes turbidity/chlorine meter readings, flow rates, volumes, particle counts, UV Intensity and Transmittance) validated to ensure that the results reflect actual quality of the water (some examples of erroneous data results are when air bubbles in the turbidity meter influence the readings or with reduced/increased flow through the chlorine residual monitor)? (Note this question does not apply to those waterworks systems that do not use on-line or continuous monitoring equipment to verify compliance with their Approval or COP Registration).

- ○ 2. The Approval/Registration holder is submitting some of the data results to AEP, but not all, without validation to ensure that they reflect actual water quality. An attempt at data validation is being made but insufficient evidence as to why the data is not valid can't be provided.
- ◉ 3. The Approval/Registration holder is validating the data results of the on-line or continuous monitoring equipment prior to submission to AEP. A documented data validation control program is in place for both chlorine residuals, filter turbidities, and UVT meter readings and comparisons are done on a monthly basis. Definition: a data validation program includes a protocol established to compare continuous analyzer results with those of grab sample and with tolerance limits established for how far apart the comparison readings can be. Data validation only applies to continuous monitoring data in which approval limits have been established (and where comparable grab sample results are easily attainable). This would include filter turbidimeter readings, chlorine residual analyzer readings and continuous UV transmittance readings.
- ○ 4. In addition to the requirements of point 3 above, the Approval/Registration holder has taken actions to correct any on-line or continuous monitoring equipment that has generated data results not reflective of actual water quality (examples include installation of an air trap to remove the air bubbles from the water, reinstallation of a meter in a more suitable location or replacement of a problematic meter). This includes data validation even when results are still within approval limits. A documented data validation control program is in place for both chlorine residuals/filter turbidities and UVT meter readings and comparisons are done on a daily basis.

Comments:
Air bubble cylinders/traps used. Routine cross-checks between online/benchtop analytical instruments conducted.

27 Have Approval/Code of Practice (COP) and Potable Water Regulation contraventions for the tertiary assessment been properly reported?

- ○ N/A
- ○ 1. Have had unreported contraventions, or operator(s) failed to notice when contraventions occurred that should have been reported.
- ○ 2. Contraventions are reported but not as required (i.e. no written report(s) submitted, late reports, incomplete reports, or reports sent to the wrong location).
- ○ 3. Contraventions reported properly with complete and appropriate written follow-up that resulted in the resolution of the issue(s) or no contravention reports were required as the facility was operated to meet Approval/COP requirements.
- ◉ 4. In addition to the requirements of point 3 above, contraventions are tracked and reviewed to identify any reoccurring incidents or issues in an effort to minimize or prevent future reoccurrences.

Comments:

ADMINISTRATIVE RISK ASSESSMENT: **PASS**

ADMINISTRATIVE RISK ASSESSMENT COMMENTS:

Close