

Dedicated to protecting and improving the health and environment of the people of Colorado

August 10, 2018

Indian Hills Water District
PO Box 710
Indian Hills, CO 80454

Subject: Sanitary Survey of Indian Hills Water District
Public Water System Identification No. CO0130065, Jefferson County

Dear Ms. Waters:

A sanitary survey was performed on July 20, 2018 by the Field Services Section of the Colorado Department of Public Health & Environment's Water Quality Control Division (the department) at Indian Hills Water District (the supplier) in accordance with *the Colorado Primary Drinking Water Regulations, 5 CCR 1002-11* (Regulation 11), Sections 11.38(1)(b) and 11.38(2). This letter serves to provide the supplier with written notification of the sanitary survey findings, including any identified significant deficiencies and violations of Regulation 11. The assistance provided was very helpful and is greatly appreciated. Table 1 identifies the parties present during the sanitary survey.

Table 1: Parties Present

Name	Organization
Kristin Waters, Randy Evans, Steven Eis	Indian Hills Water District
Wayne Ramey, Rob Connel	Ramey Environmental
Jorge Delgado	Colorado Department of Public Health & Environment

In response to this letter, the supplier must provide a written response, documenting resolution of all significant deficiencies and violations, and/or propose a corrective action plan with a corrective action schedule, as required by Regulation 11, Section 11.38(3)(d,f). Also, for findings that are violations of Regulation 11, the supplier must comply with the public notification requirements described in Section V, below. The supplier's written response is due within forty-five (45) days. If a corrective action plan is proposed, it must outline the course of action that has been or will be taken and the date(s) of the completed corrective action(s) and/or the date(s) by which the supplier proposes to correct each significant deficiency and violation of Regulation 11. Table 2 summarizes the number of findings and the required written response and resolution dates.

Table 2: Sanitary Survey Findings

Severity Category	Number Identified	Written Response Due (within 45 days of letter date)	Resolution Due (within 120 days of letter, or department-approved alternate date)	Public Notice Required (Violations of Regulations 11)
Significant Deficiencies	9	September 24, 2018	December 8, 2018	Not required
Violations	6	September 24, 2018	December 8, 2018	Required
Observations-Recommendations	10	No response required	Not applicable	Not applicable

Failure to adequately address all significant deficiencies and violations referenced above may result in additional violations of Regulation 11. A list of the findings for each category in Table 2 can be found in the following sections:

Section I: Significant Deficiencies

According to Regulation 11, Section 11.3(71), a significant deficiency means:



any situation, practice, or condition in a public water system with respect to design, operation, maintenance, or administration, that the state determines may result in or have the potential to result in production of finished drinking water that poses an unacceptable risk to health and welfare of the public served by the water system.

The items in this category are significant deficiencies. Please direct questions regarding resolution of the following items to the department inspector.

1. F310 - Finished Water Storage: Pressure Zone 3 Storage Tank (SDWIS ID: 020)

Storage Condition: The condition of the storage structure may allow potential sources of contamination to enter the tank.

At the time of the sanitary survey, the department inspector observed that the Pressure Zone 3 Storage Tank (SDWIS ID: 020) was leaking (Attachment 1A) at sidewall joints. This condition could allow the entrance of potential microbial and chemical contaminants into the tank. Maintaining a tank in a manner that may allow for potential contamination of potable water presents a risk to public health which meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71) and must be corrected. The department expects that the supplier repair the leaks. Please submit photographic evidence of the corrections to the department inspector upon completion.

2. F310 - Finished Water Storage: Pressure Zone 2 Tank 1 (SDWIS ID: 018)

Storage Condition: The condition of the storage structure may allow potential sources of contamination to enter the tank.

At the time of the sanitary survey, the department inspector observed that the Pressure Zone 2 Tank 1 (SDWIS ID: 018) electrical conduit tank penetration was cracked open at the bottom ground level beside the tank (Attachment 2). This condition could allow the entrance of potential microbial and chemical contaminants as well as insects and small animals into the tank. Maintaining a tank in a manner that may allow for potential contamination of potable water presents a risk to public health which meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71) and must be corrected. The department expects that the supplier repair the cracked conduit. Please submit photographic evidence of the corrections to the department inspector upon completion.

3. F310 - Finished Water Storage: Pressure Zone 1 Tank 2 (SDWIS ID: 017)

Storage Condition: The condition of the storage structure may allow potential sources of contamination to enter the tank.

At the time of the sanitary survey, the department inspector observed that the Pressure Zone 1 Storage Tank 2 (SDWIS ID: 017) was leaking (Attachment 1B) at sidewall joints. This condition could allow the entrance of potential microbial and chemical contaminants into the tank. Maintaining a tank in a manner that may allow for potential contamination of potable water presents a risk to public health which meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71) and must be corrected. The department expects that the supplier repair the leaks. Please submit photographic evidence of the corrections to the department inspector upon completion.

4. F310 - Finished Water Storage: Pressure Zone 1 Tank1 (SDWIS ID: 016)

Storage Condition: The condition of the storage structure may allow potential sources of contamination to enter the tank.

At the time of the sanitary survey, the department inspector observed that the Pressure Zone 1 Storage Tank 1 (SDWIS ID: 016) was leaking (Attachment 1C) at sidewall joints. This condition could allow the entrance of potential microbial and chemical contaminants into the tank. Maintaining a tank in a manner that may allow for potential contamination of potable water presents a risk to public health which meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71) and must be corrected. The department expects that the supplier repair the leaks. Please submit photographic evidence of the corrections to the department inspector upon completion.

5. T119 - Treatment: Parmalee Gulch SWTP01 (SDWIS 014)

Proper Operation: Surface water or groundwater under the direct influence (GWUDI) of surface water treatment operational practices. Regulation 11, Section 11.8(1)(b) and CDPHE-WQCD Policy 4.

During the sanitary survey, the department evaluated the supplier’s GWUDI treatment process and the conditions of approval specified in the department’s May 10, 2018 Disinfection and Outreach Verification Effort (DOVE) letter and the supplier’s Record of Approved Waterworks (RAW). The RAW specifies four conditions of approval for the Parmalee Gulch SWTP01 (SDWIS 014). At the time of the sanitary survey it was observed by the department inspector that the supplier was not meeting the following conditions of approval:

Condition of Approval - Parmalee Gulch SWTP01 (SDWIS 014) - RAW	Inadequacies
<p>Condition No. 1 The water system is required to continuously provide a minimum of 4-log inactivation of viruses by disinfection. Pursuant to Section 11.1(6), to demonstrate adequate disinfection and compliance with Section 11.8(3)(b)(i)(A) of Regulation 11, the supplier must monitor and report water temperature and pH, flow rate, tank volume and residual chlorine concentration downstream of the disinfection contact time at the frequencies specified below:</p> <p>Tank level, flow rate and chlorine residual monitoring must be measured and recorded at least as often as each disinfectant residual monitoring event as defined in Section 11.8(3)(c) of Regulation 11. The records of clear well volume are subject to department review during sanitary surveys. Water temperature and pH must be measured and recorded as often as necessary given source water quality conditions but at least as often as once every week. These records are subject to department review during sanitary surveys.</p>	<p>Supplier was not monitoring or recording the contact time tank levels, flow rates, water temperature or pH at the prescribed frequencies.</p>
<p>Condition No. 2 The water system must continuously meet the design, performance, and operation and maintenance requirement established in Section 4.3.8 of the Colorado Design Criteria for Potable Water Systems (effective December 15, 2017) and in the department’s “Acceptance of the Evoqua Water Technologies Model 10V/L10N/L20V/ L20N/L40N as an Alternative Filtration Technology to meet the Colorado Primary Drinking Water Regulations requirements for Giardia lamblia and Cryptosporidium Removal” dated September 25, 2014, or most recent version. Which requires that the public water system must keep records of the following operational parameters (available for department review):</p> <ol style="list-style-type: none"> Integrity test date, results (pass or fail) and initials of person performing the test Clean in place (CIP) dates with clean water permeability and integrity test result. Filter maintenance and fiber repair results Filter replacement date and reason for replacement. 	<p>Supplier is performing daily integrity test, however, the supplier is not recording the name of the individual(s) who performed or observed the results of the integrity test.</p> <p>Supplier is not adequately recording the filter maintenance, fiber repair results and is not clearly recording the integrity test results after a CIP cycle is performed but before the filter is returned to service.</p>

Not sampling, measuring and recording the required data impairs the supplier’s ability to calculate the required log inactivation for viruses by disinfection and meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71). Not properly documenting the integrity test results and membrane filtration maintenance could create conditions where a membrane unit could present unacceptable health risk to the public and meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71). To resolve this significant deficiency, the department expects that the supplier begin to monitor and record the specified parameters and that the supplier submit four weeks of results to the department inspector.

6. T119 - Treatment: Turkey Creek YWTP02 (SDWIS ID: 002)

Proper Operation: Surface water or GWUDI of surface water treatment operational practices. Regulation 11, Section 11.8(1)(b) and CDPHE-WQCD Policy 4.

During the sanitary survey, the department evaluated the supplier’s GWUDI treatment process and the conditions of approval specified in the department’s May 10, 2018 DOVE letter and the supplier’s RAW. The RAW specifies three conditions of approval for the Turkey Creek YWTP02 (SDWIS ID: 002). At the time of the sanitary survey it was observed by the department inspector that the supplier was not meeting the following conditions of approval:

Condition of Approval - Turkey Creek YWTP02 (SDWIS ID: 002) - RAW	Inadequacies
<p>Condition No. 1 The water system is required to continuously provide a minimum of 4-log inactivation of viruses by disinfection. Pursuant to Section 11.1(6), to demonstrate adequate disinfection and compliance with Section 11.8(3)(b)(i)(A) of Regulation 11, the supplier must monitor and report water temperature and pH, flow rate, tank volume and residual chlorine concentration downstream of the disinfection contact time at the frequencies specified below:</p> <p>Tank level, flow rate and chlorine residual monitoring must be measured and recorded at least as often as each disinfectant residual monitoring event as defined in Section 11.8(3)(c) of Regulation 11. The records of clear well volume are subject to department review during sanitary surveys. Water temperature and pH must be measured and recorded as often as necessary given source water quality conditions but at least as often as once every week. These records are subject to department review during sanitary surveys.</p>	<p>Supplier was not monitoring or recording the contact time tank levels, flow rates, water temperature or pH at the prescribed frequencies.</p>
<p>Condition No. 2 The water system must continuously meet the design, performance, and operation and maintenance requirement established in Section 4.3.8 of the Design Criteria (effective December 15, 2017) and in the department’s “Acceptance of the Evoqua Water Technologies Model 10V/L10N/L20V/L20N/L40N as an Alternative Filtration Technology to meet the Colorado Primary Drinking Water Regulations requirements for Giardia lamblia and Cryptosporidium Removal” dated September 25, 2014, or most recent version. Which requires that the public water system must keep records of the following operational parameters (available for department review):</p> <ol style="list-style-type: none"> Integrity test date, results (pass or fail) and initials of person performing the test CIP dates with clean water permeability and integrity test result. Filter maintenance and fiber repair results Filter replacement date and reason for replacement. 	<p>Supplier is performing daily integrity test, however, the supplier is not recording the name of the individual(s) who performed or observed the results of the integrity test.</p> <p>Supplier is not adequately recording the filter maintenance, fiber repair results and is not clearly recording the integrity test results after a CIP cycle is performed but before the filter is returned to service.</p>

Not sampling, measuring and recording the required data impairs the supplier’s ability to calculate the required log inactivation for viruses by disinfection and meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71). Not properly documenting the integrity test results and membrane filtration maintenance could create conditions where a membrane unit could present unacceptable health risk to the public and meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71). To resolve this significant deficiency, the department expects that the supplier begin to monitor and record the specified parameters and that the supplier submit four weeks of results to the department inspector.

7. T119 - Treatment: Turkey Creek YWTP02 (SDWIS ID: 002)

Cross Connection: Uncontrolled cross connection that may allow contamination to enter drinking water.

In accordance with Section 11.39(3)(b) of Regulation 11, suppliers of water are prohibited from installing or permitting any uncontrolled cross connections within a supplier’s treatment waterworks. Unprotected cross connections present potential sanitary hazards and health risks which meet the definition of a significant deficiency as defined in Section 11.3(71) of Regulation 11 and must be corrected. At the time of the sanitary survey, the department inspector evaluated the Turkey Creek YWTP02 (SDWIS ID: 002) and identified one uncontrolled cross connections (Attachment 3) at the chlorine chemical feed system day tank supply line.

In accordance with Section 11.39 of Regulation 11, the supplier must control or remove the cross connection to prevent the potential backflow of the identified contaminant from entering the distribution system. In order to correct this deficiency, the supplier must install a hose-bib vacuum breaker at the location which prevents backflow into the treatment waterworks or remove the identified cross connection within 120 days of this letter or according to a department-approved alternative schedule. The supplier is expected to submit a photograph of the installed hose-bib vacuum breaker.

If the cross connection is not controlled within 120 days of the date of this letter or in accordance with a department-approved compliance schedule, a violation may have occurred which may require a Tier 2 public notice.

8. and 9. T162 - Treatment: YWTP03 for Wells 005 and 013 (SDWIS ID: 014) and Turkey Creek YWTP02 (SDWIS ID: 002) Non-ANSI/NSF Materials or AWWA Standards: Chemicals and materials in contact with the water must be American National Standard Institute (ANSI)/National Science Foundation (NSF) International Standard 60 or 61 certified, respectively.

At the time of the sanitary survey, the supplier could not demonstrate the Strainrite Model No. HPM97-CC-2SS bag filter or the Bluebook filter Model No. 50-03-A-1 are ANSI/NSF International Standard 61 certified. The department contacted the manufacturer of the Strainrite cartridge filter. The manufacturer stated that the filter was not made to ANSI/NSF 61 certified or FDA Title 121 compliant. The department was not able to verify the status of the Bluebook filter. Utilizing materials not certified for contact with potable water may allow for potential chemical contamination of potable water. This is a risk to public health, which meets the definition of a significant deficiency as defined in Regulation 11, Section 11.3(71) and must be corrected. The supplier must begin to utilize a filter that is either ANSI/NSF Standard 61 certified, manufactured to FDA Title 121 or is intended for potable water use. Please provide to the department inspector documentation addressing proposed solution for the deficiency.

Section II: Violations

The items in this category are violations of Regulation 11. Please direct questions regarding resolution of the following items to the department inspector.

1. T124 - Treatment: Turkey Creek YWTP02 (SDWIS ID: 002)

Membrane Filtration Integrity Testing (T2): Supplier lacked or was not properly performing membrane integrity tests. This is a violation of Regulation 11, Section 11.8(2)(b)(ii)(A).

During the sanitary survey, the department inspector observed that the filtration treatment processes consisted of the Evoqua (Siemens) Memcor 6L10V membrane. The frequency of membrane integrity testing is required to be once per calendar week that the membrane is in operation and following CIP, as required by Section 4.3.8.7(d) of the Design Criteria and referenced as a condition of approval in the department's "Acceptance of the Evoqua Water Technologies Model 10V/L10N/L20V/ L20N/L40N as an Alternative Filtration Technology to meet the Colorado Primary Drinking Water Regulations requirements for Giardia lamblia and Cryptosporidium Removal" dated September 25, 2014. The acceptance letter specifies a direct integrity test failure criteria of greater than 1.5 pounds per square inch gauge per minute decay. The department reviewed the supplier's membrane integrity testing results. The supplier generally performs integrity test on a daily basis, however, it was observed that from March 29, 2016 through May 5, 2016 the supplier operated the Turkey Creek YWTP02 (SDWIS ID: 002) with failed pressure decay greater than 1.5 pounds per square inch. The filtration system was being operated outside the conditions outlined in the department's Acceptance of the Alternative Filtration Technology letter and is therefore not properly operated to ensure it is consistently achieving 99.9 percent removal of *Giardia* in accordance with Regulation 11, Section 11.8(2)(b)(ii)(A). Operating under such conditions is a violation of Regulation 11, Section 11.8(2)(b)(ii)(A) and must be corrected. To address this violation, the department expects the supplier to modify operational procedures to ensure that the alternative filtration technology is being integrity tested at the frequency required by the department's January 30, 2014 acceptance letter of the membrane module. The supplier is expected to submit to the department inspector a written integrity testing standard operating procedure and a test log. This violation of Regulation 11 requires Tier 2 public notice in accordance with Regulation 11, Section 11.33 (Public Notification Rule) as directed in the public notice instructions section below.

2. R540 - Monitoring, Recordkeeping and Data Verification:

Design Approval (T3): Supplier had not received plans and specifications approval by the department prior to construction of renovations to the water system, including the addition of new sources, modifications of treatment or addition of storage tanks. This is a violation of Regulation 11, Section 11.4(1).

During the sanitary survey, the department inspector identified that the supplier had not received approval, nor submitted plans and specifications to the department for approval of the addition and installation of three membrane modules to the Turkey Creek YWTP02 (SDWIS ID: 002) membrane filtration system. Per Section 11.4(1) of Regulation 11, no person shall make improvements to or modify the treatment process of an existing waterworks until plans and specifications for such construction, improvements or modifications have been submitted to, and approved by the department. In addition, a Professional Engineer registered in the State of Colorado shall design all treatment systems serving a community water system. The supplier must hire an engineer to develop plans and specifications for the addition and installation of three membrane modules to be submitted to the department for review and approval. To initiate resolution of this deficiency, the supplier must submit complete design plans and specifications for the water system to the department for review and approval, as this is required for all substantive modifications to any public water system. This submittal will initiate the resolution process of this deficiency. Please note that final resolution will not be achieved until the supplier receives the department's final approval, is issued a design review approval letter, and the supplier has completed construction in accordance with the department's design approval letter. The department prefers that an electronic copy of the design review submittal to CDPHE.WQEngReview@state.co.us and one hard copy be mailed to:

Mr. Douglas Camrud, P.E.
Engineering Section Unit Manager
CDPHE-WQCD ES B2
4300 Cherry Creek Drive South, Denver, CO 80246-1530

The department also requests that the supplier notify the department inspector via email when the design plans and specifications are submitted to the department. To facilitate this request, the supplier could e-copy the department inspector when emailing the electronic copy to the engineering review email referenced above. For more information concerning the design review process, please contact Douglas Camrud. Mr. Camrud can be reached at 303-692-3271 or via email at douglas.camrud@state.co.us. This violation of Regulation 11 requires Tier 3 public notice in accordance with Regulation 11, Section 11.33 (Public Notification Rule) as directed in the public notice instructions section below.

3. F318 - Management:

Storage Tank Inspections Not Performed or Documented (T2): Supplier failed to perform or document tank inspections. This is a violation of Regulation 11, Section 11.28(4)(b)(ii).

In accordance with Section 11.28(3)(c) of Regulation 11, suppliers of water that operate finished water storage tanks are required to perform periodic and comprehensive inspections of these tanks. The periodic inspections must be performed on a quarterly basis or on a department acceptable alternative schedule.

At the time of the sanitary survey, the department inspector observed that the supplier's water system had a total of six finished water storage tanks. The department inspector observed that the supplier had not performed periodic inspections for all of the finished water storage tanks during the first and fourth quarters of 2017.

Failing to perform the required inspections constitutes a treatment technique violation of Regulation 11 and must be corrected. The supplier must perform and keep record of periodic and comprehensive inspections of all finished water storage tanks. This violation of Regulation 11 also requires Tier 2 public notice in accordance with Regulation 11, Section 11.33 (Public Notification Rule) as directed in the public notice instructions section below.

The supplier has begun quarterly performing inspections and has a process in place to document the inspections. This violation is considered resolved and no further action is required at this time.

4. R529 - Monitoring, Recordkeeping and Data Verification:

Monitoring Turbidity (T3): Supplier was not properly monitoring and or recording turbidity values. This is a violation of Regulation 11, Section 11.8.

At the time of the sanitary survey, the supplier was monitoring turbidity at the combined filter effluent for both treatment plants. The supplier is required to report up to six turbidity samples per day for each plant if the plant is online and producing water during the specified time periods in the monthly operating reports (MORs). The department reviewed the MORs submitted by the supplier to the department. The supplier stated that it is currently collecting turbidity data on a continuous basis with an online turbidimeter. The turbidity data for both plants is currently stored in each of the respective the membrane filtration units SCADA system. The supplier's staff stated that its current reporting procedure is to pull data from the membrane filtration SCADA system at a frequency of once per hour and to report the highest turbidity sample from one of four samples for each four hour time period. Section 11.8(2)(c) of Regulation 11 allows suppliers to monitor turbidity continuously if the supplier validated the continuous monitoring requirement for accuracy at a department-approved frequency and via a department-approved protocol. Section 11.8(2)(f) of Regulation 11 requires that all turbidity monitoring results collected in accordance with 11.8(2)(c) must be utilized to provide the required turbidity data. Continuous sampling by the department is considered, at a minimum, samples collected every 15 minutes. Only using up to 24 samples per day instead of the hundreds of samples currently collected by the supplier constitutes a reporting violation of Regulation 11, Section 11.8(2)(f). The supplier is expected to analyze all turbidity samples collected during the specified time period and to report the highest observed turbidity during the specified time period. To resolve this violation, the supplier is expected to provide proof that monitoring frequencies have been updated to the appropriate frequency.

This violation of Regulation 11 requires Tier 3 public notice in accordance with Regulation 11, Section 11.33 (Public Notification Rule) as directed in the public notice instructions section below.

5. R532 - Monitoring, Recordkeeping and Data Verification:

Turbidimeter Monitoring Equipment Calibration (T3): Supplier was not calibrating, verifying or operating turbidity monitoring analytical equipment in accordance with manufacturer requirements. This is a violation of the Regulation 11, Section 11.46.

At the time of the sanitary survey, the department inspector observed that the supplier could not provide documentation demonstrating that the turbidimeters had been calibrated in accordance with 40 CFR 141.74(a) and the manufacturer's recommendations, which is quarterly for HACH turbidimeters for 2016, 2017 and the first two quarters of 2018. In accordance with Section 11.46 of Regulation 11, the department expects that turbidimeters be calibrated quarterly as recommended by the manufacturer. To ensure that the supplier properly documents calibration records for all of the supplier's analytical equipment, the supplier should develop and implement written procedures and calibration logs. The supplier has begun quarterly calibrating the turbidimeters and the violation has been resolved and no further action is required at this time.

This violation of Regulation 11 requires Tier 3 public notice in accordance with Regulation 11, Section 11.33 (Public Notification Rule) as directed in the public notice instructions section below.

6. R531 - Monitoring, Recordkeeping and Data Verification:

Disinfectant Monitoring Equipment Verification (T3): Supplier was not using an EPA accepted test method, using an expired or incorrect DPD reagent or not verifying or operating disinfectant monitoring analytical equipment in accordance with manufacturer requirements. This is a violation of Regulation 11, Section 11.46.

During the sanitary survey, the supplier's method for testing disinfectant residuals was discussed. The supplier was using an online chlorine analyzer to submit compliance data. At the time of the sanitary survey, the department inspector observed that it was unclear if the supplier was performing verification checks on their online chlorine analyzers, on a weekly basis, in accordance with 40 CFR 141.74(a). In accordance with Section 11.46 of Regulation 11, the department expects the supplier to calibrate or check their online chlorine analyzers per manufacturer's recommendations or at least once weekly. The online chlorine analyzers should be checked with secondary standards and the results recorded in a logbook to indicate any issues with the instruments. To resolve this violation, the supplier is expected to develop and implement written verification procedures and logs for the online chlorine analyzers in accordance with the manufacturer's recommendations. The verification procedures and a month of verification check logs must be submitted to the department inspector.

This violation of Regulation 11 requires Tier 3 public notice in accordance with Regulation 11, Section 11.33 (Public Notification Rule) as directed in the public notice instructions section below.

Section III: Observations/Recommendations

The department recommends the supplier follow up and consider the following observations-recommendations. Please direct questions regarding any of the items below to the department inspector.

1. F991 - Finished Water Storage: Storage Tanks

Other Storage Observations: Department inspector identified storage observation.

At the time of the sanitary survey, the department inspector observed that the six storage tank access hatches and vents are not safely accessible for inspection. The operator was able to climb the tanks and perform the inspection, however, he expressed safety concerns every time he climbs the tanks to perform the inspection. The department recommends that the supplier make modifications to the tank to make the vent and access hatch safely accessible for routine inspection to verify that the condition of the vent is acceptable and does not present a public health risk and in a manner that protects the supplier's staff.

2. T995 - Treatment: YWTP03 for Wells 005 and 013 (SDWIS ID: 014)

Other Treatment Observations: Department inspector identified treatment observation.

During the sanitary survey, the department inspector observed two water leaks at the YWTP03 for Wells 005 and 013 (SDWIS ID: 014) water treatment plant membrane filtration system. The first leak was located at a joint where unfiltered water enters the membrane filtration unit. The second leak was located at a sample tap joint used to collect the combined filtered effluent sample. Maintaining these leaks could create conditions at the water treatment plant where the membrane filtration system could become inoperable. The department recommends that the supplier ensure that all leaks are repaired and that all appurtenances and pipes associated with the membrane filtration system are fully operational.

3. and 4. T110 - Treatment: YWTP03 for Wells 005 and 013 (SDWIS ID: 014) and Turkey Creek YWTP02 (SDWIS ID: 002) Log Inactivation (Surface Water and GWUDI): Supplier demonstration of adequate disinfection at the time of the sanitary survey. Adequate disinfection is required prior to the entry point to the distribution system. Regulation 11, Section 11.8(1)(b)(i)(A).

The department evaluated the supplier's current strategy to comply with the log inactivation requirements of Regulation 11, Section 11.8(3)(b)(i)(A), to ensure that the total treatment processes, including filtration and disinfection, achieve 99.9 percent (3-log) treatment of *Giardia lamblia* cysts and 99.99 percent (4-log) treatment of viruses, as determined by the department. The supplier was issued a DOVE letter May 10, 2018 which specified the current log inactivation limitations. Per the discussion on-site and the DOVE evaluation, the department communicated that reporting disinfection performance on its MORs may result in violations of the Surface Water Treatment Rule (Regulation 11.8). Please continue to communicate with the department about any proposed modifications to your system that may improve disinfection performance over the following year. The department is offering to continue to assist the supplier to resolve the findings identified in the DOVE letter. Please direct all further correspondence regarding this assistance to:

Melanie Criswell, P.E.
Colorado Department of Public Health and Environment
Water Quality Control Division - Engineering Section
4300 Cherry Creek Drive South, Denver, CO 80246-1530

5. 6. and 7. - S012 - Source: Well 11R (SDWIS ID: 027), Well No 12 (SDWIS ID: 026) and Well No 10 (SDWIS ID: 013) Groundwater Source Potential GWUDI: Supplier's source(s) may be under the direct influence of surface water as defined by Regulation 11, Section 11.3(36). The department will be evaluating the source for determination of GWUDI of surface water and the need to comply with Regulation 11, Section 11.8.

During the sanitary survey, the department inspector indicated that the supplier's Well 11R (SDWIS ID: 027), Well No 12 (SDWIS ID: 026) and Well No 10 (SDWIS ID: 013) sources may be under the direct influence of surface water based on the following information:

Parameter	Well 11r (SDWIS ID: 027)	Well No 12 (SDWIS ID: 026)	Well No 10 (SDWIS ID: 013)
Permit No.	66080-F-R	79581-F	046940-F
Aquifer	Unconfined	Unconfined	Unconfined
Total Depth Ft.	1100	1000	303
Top Screen Depth Ft.	580	500	153
Bottom Screen Depth Ft.	1060	980	303
Nominal Pumping Rate gpm	22	15	26
Horizontal Distance to Surface Water Ft.	25	150	150
50 day radius estimate	24	20	46
MPA Result	No MPA	No MPA	No MPA

Additional testing may be required in the future to determine the appropriate source classification. The department may issue additional information regarding the source classification status of the source under a separate letter to the supplier. If you have already been coordinating with the department regarding this issue and have questions, please contact the department's Groundwater Evaluation Specialist, Bryan Pickle, at 303-692-3527 or bryan.pickle@state.co.us.

8. O997 - Operator:

Other Operator Compliance Observations: Department inspector identified operator compliance observation.

At the time of the sanitary survey, the supplier could not adequately demonstrate that the operator in responsible charge (ORC) was making operational decisions for the control and operation of the water treatment and distribution system or that a written operating plan was in place for delegation of activities to other facility operators or personnel. Please note that Regulation 100, Sections 100.16.5 and 100.16.6 clearly define the required roles of the ORC as the following:

- a) the management or administration of the operation of the water or wastewater facility;
- b) the accountability for the proper operation and maintenance of the water or wastewater facility for compliance with applicable regulations and/or permit requirements, including monitoring and reporting requirements;
- c) the control of, supervision over or active participation in the daily planning, operation or maintenance of a water or wastewater facility;
- d) authority to make day-to-day process control and system integrity decisions on the operation and maintenance of the water or wastewater facility;
- e) the availability to make decisions and initiate actions regarding the operation of the water or wastewater facility in a timely manner;
- f) ensuring proper inspection and testing of new, modified or repaired facilities prior to placing or returning such facilities into service;
- g) developing and implementing preventative maintenance programs and performing routine maintenance functions for facilities;
- h) overseeing compliance with laws and regulations and reporting as appropriate to facility owners and the department; and
- i) the performance of other functions of direct responsibility, including those enumerated in section 100.15.

Regulation 100 allows the certified ORC of a water or wastewater facility to delegate tasks or activities to other facility operators when delineated by a written operating plan. During the sanitary survey, no written plan was available for review. Please develop a written operating plan in accordance with Regulation 100. The department expects that this written operating plan will be available during the next sanitary survey. More information regarding operating plans is available at: <https://www.colorado.gov/pacific/cdphe/wq-facility-operator-certification-operating-plan>. Please note that the operating plan must be precise in defining the limits of tasks or activities that can occur while the ORC is not on-site. Also, the operating plan must be

reviewed and updated, as needed and at least once each calendar year by the certified ORC. The operating plan must be available to the facility owner and other facility operators at all times. The operating plan must be available for inspection by the department upon request. In addition, any operational activity beyond the limits defined in the operating plan requires the immediate and direct consultation with and participation of a certified ORC or another operator holding a certificate equal to or above the classification of the facility he or she is operating.

9. R525 - Monitoring, Recordkeeping and Data Verification:

Monitoring Residual Disinfectant: Monitoring and recording of residual disinfectant concentration.

Regulation 11 defines the first customer as the first potable water service connection downstream of the point where complete water treatment, including disinfection contact time, has occurred. Typically, the first customer is the water treatment plant’s domestic water system. The department evaluated the supplier entry point monitoring location at the supplier’s Parmalee Gulch YWTP03 for Wells 005 and 013 (SDWIS ID: 014) water treatment plant. The supplier uses distribution system water to blend Parmalee Gulch water for nitrate blending. The department inspector observed that due to various piping configurations the supplier’s entry point sampling location is located after a split in the distribution system where water would either enter the distribution system or the suppliers Parmalee Gulch water treatment plant and may not always be fully representative of all of the water entering the distribution system. Though this requirement has been part of Regulation 11 since the U.S. Environmental Protection Agency’s Surface Water Treatment Rule went into effect, the department has recently begun a statewide outreach and disinfection verification project to reevaluate surface water treatment. The department has formed a DOVE team to perform this reevaluation and assist suppliers of water in assessing their disinfection. The department expects that moving forward the supplier sample from both entry points into the distribution system and at the Parmalee Gulch house water or that the entry point sample be collected before water is split.

10. M610 -Management:

Backflow Prevention and Cross-Connection Control Program: Written backflow prevention and cross-connection control (BPCCC) program.

With regards to the supplier’s BPCCC Program, the department recommends that the supplier:

- Identify the total number of waterworks that require survey. This number needs to include all: treatment plants, storage tanks, pump stations, etc.
- Include all newly identified non-single-family-residential (NSFR) service connections including and not limited to all agricultural, industrial, commercial and multifamily service connections as well as single family residences with identified axillary sources such as wells to the total number NSFR connections that require survey.
- Include all identified methods such as the Well 5 air gap and the two block and bleeds and make sure that these numbers are included in the totals of the Annual BPCCC report.

Please contact Jorge Delgado by phone at 303-692-3511 or via email at jorge.a.delgado@state.co.us with any questions regarding BPCCC.

Section IV: Field Verification/Sampling

While performing the sanitary survey, the department inspector performed water quality sampling for chlorine and turbidity. Table 3 indicates the results of the water quality sampling performed on-site.

Table 3: Sampling Results

Parameter	Sample Location	Value	Units	Notes
Entry Point Disinfectant Residual	Entry Point	2.51	mg/L	Turkey Creek
Entry Point Disinfectant Residual	Entry Point	2.37	mg/L	Parmalee Gulch
Turbidity	CFE	0.027	NTU	Turkey Creek
Turbidity	CFE	0.021	NTU	Parmalee Gulch

Section V: Public Notification Instructions for Violations

The public notice requirements are dependent upon the severity of the violation and any potential public health effects, pursuant to Regulation 11, Sections 11.33(1)(a,b), 11.33(2)(a), 11.33(3)(a) and 11.33(4)(a). All issued notifications must comply with the general content and distribution requirements and notice reporting requirements that are included in Regulation 11, Sections 11.33(5) and (6) and (7). Please be advised of the following:

1. For all violations that require Tier 2 public notice, the supplier must distribute the public notice as soon as possible but no later than **September 9, 2018** to all of the supplier's consumers. If the supplier posts the public notice, the notice must remain in place for as long as the violation persists or for seven days, whichever is longer. The supplier must repeat the distribution of the public notice every three months as long as the violation persists.
2. For all violations that require Tier 3 public notice, the supplier must distribute the public notice as soon as possible but no later than **August 10, 2019** to all of the supplier's consumers. If the supplier posts the public notice, the notice must remain in place for as long as the violation persists or for seven days, whichever is longer. The supplier must repeat the distribution of the public notice annually as long as the violation persists.
3. The public notice and certification template is provided at <https://wqcdcompliance.com/forms> under Public Notification.
4. No later than 10 calendar days after completing the initial and repeat public notice (if applicable), the supplier must submit a certification that states the supplier has fully complied with the public notice requirements. The supplier must include a representative copy of each distributed notice to the department.
5. The supplier's public notice and the certification form must be submitted to the department electronically through the drinking water portal at <https://wqcdcompliance.com/login>, by mail or by fax at 303-758-1398 (attention to Tim Jones).

Please direct questions regarding the public notice requirements directly to Tim Jones at 303-692-2085 or timothy.jones@state.co.us.

Section VI: Wastewater Unpermitted Discharge

1. During the sanitary survey, the department observed that the filter backwash from the membrane filtration system at the Indian Hills Water District's Turkey Creek drinking water treatment plant discharges to ground with no intermediary impoundment or containment. The system does not have a Colorado Discharge Permit System permit for the discharge. This is an alleged violation of the Colorado Water Quality Control Act Section 25-8-501, C.R.S. which states in part that: *"No person shall discharge any pollutant into any state water from a point source without first having obtained a permit from the Department for such discharge, and no person shall discharge into a ditch or man-made conveyance for the purpose of evading the requirement to obtain a permit under this article."* The discharge is likely to leave contaminants which may impact groundwater, which is also considered to be state waters. The entity is expected to contact the Water Quality Control Division Permits Section at 303-692-3517 or contact Margo Griffin at margo.griffin@state.co.us within 45 days to discuss the permitting requirements. More information regarding industrial discharge permits is available at: <http://www.colorado.gov/cdphe/wqcd>.

Reminders

- Regulation 11, Section 11.4(1)(b) (Prior Approval Required) requires the department's approval prior to commencement of construction of any improvements, treatment process modifications or the addition of new water sources.
- Most regulations, guidance documents and forms are available on the department's website at <https://wqcdcompliance.com>.

- Regulation 11, Section 11.5 requires all suppliers of water to develop and implement a monitoring plan. A new version of the department's Monitoring Plan Template is now available at <https://www.colorado.gov/cdphe/monitoringplans>. For assistance developing or updating your monitoring plan, coaching assistance can be requested via the Local Assistance Unit website at <https://www.colorado.gov/pacific/cdphe/tools-drinking-water-facilities-managers>. The supplier is required to submit a copy of the updated plan via the department's online portal at <https://wqcdcompliance.com/login>. For portal support, please contact Kaleb Winisko at kaleb.winisko@state.co.us or 303-691-7803. The plan will then be reviewed by the Drinking Water Compliance Assurance Section. For questions regarding the Monitoring Plan requirements please contact the Compliance Assurance Section at 303-692-3556.

Attached is a form that the supplier may use to document the required written response to this letter. While using this form is optional, it will fulfill the requirement to provide a written response if completed and submitted to the department by the written response due date listed above.

Enclosed with this letter you will find a postage-paid Customer Satisfaction Survey Postcard. Please take a few moments to complete the survey and return it to the department. Your efforts to provide feedback to improve the sanitary survey process are appreciated.

If you have any questions, please contact me at 303-692-3511 or jorge.a.delgado@state.co.us. Thank you for your time and cooperation.

Sincerely,



Jorge Delgado, P.E.
Senior Field Engineer
Field Services Section
Water Quality Control Division
Colorado Department of Public Health & Environment

cc: Jefferson County Public Health
Drinking Water File, PWSID No. CO0130065
Aquifer Case FS.18.INSP.04180
R Wayne Ramey, ORC
Kelly Jacques, Unit Manager, CDPHE-WQCD-FSS-Denver
Tyson Ingles, Lead Drinking Water Engineer, CDPHE-WQCD-Safe Drinking Water Program
Douglas Camrud, Unit Manager, CDPHE-WQCD-Engineering Section
Melanie Criswell, Senior Review Engineer, CDPHE- WQCD-Engineering Section
Bryan Pickle, Sr. Groundwater Evaluation Specialist, CDPHE-WQCD-Compliance Assurance Section
Tim Jones, Field Identified Violation Compliance Specialist, CDPHE-WQCD-Technical and Regulatory Implementation & Coordination Unit
Margo Griffin, Permits Work Group Lead, CDPHE-WQCD-Permits Section

Attachments



Attachment: 1A
Severity: Significant Deficiency
Facility ID: 020
Category: Storage
Attachment Comments: Tank Leak



Attachment: 1B
Severity: Significant Deficiency
Facility ID: 017
Category: Storage
Attachment Comments: Tank Leak



Attachment: 1C
Severity: Significant Deficiency
Facility ID: 016
Category: Storage
Attachment Comments: Leak



Attachment: 2
Severity: Significant Deficiency
Facility ID: 018
Category: Storage
Attachment Comments: Broken Conduit



Attachment: 3

Severity: Significant Deficiency

Facility ID: 002

Category: Treatment

Attachment Comments: Chemical Feed Line Uncontrolled Cross Connection