

Public Water System Monitoring Plan

System Name	BLM Pumphouse Recreation Site
PWSID (Assigned by Department)	CO0225625
County	Grand
Describe Changes	Updated

Submittal to the Department

Submit Online (Preferred): wqcdcompliance.com/login

Fax: 303-758-1398

WQCD - B2 - Drinking Water CAS

4300 Cherry Creek Drive South

Denver, CO 80246-1530

Revisions

Water systems are required to submit any changes to the Department within thirty (30) calendar days following the effective date of the change. If submitting revisions please only submit the individual section(s) that changed.

Monitoring Schedules

All routine monitoring information, facilities and sample points (with state assigned IDs), system classification, and system source classification is available at wqcdcompliance.com/schedules.

Schedules are updated on a weekly basis and should be checked regularly for any changes.

Immediately call 303-692-3308 (or 1-877-518-5608 if after-hours) for:

1. Positive coliform or Positive *E. coli*.
2. Nitrate greater than or equal to 10.0 mg/L.
3. Nitrite greater than or equal to 1.0 mg/L.

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1.0 Contact Information

Completed by: [Blaine Vecchia](#), bvecchia@blm.gov

Certification of Accuracy: I hereby certify that the information is true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

System Physical Address (Not Mailing)

Address: [Pumphouse Campground - 39.987499, -106.508916](#)

City: [n/a](#) State: [CO](#) Zip: [n/a](#)

System Phone: [970-724-3000d](#) System Email: kdittlinger@blm.gov

Administrative Contact (AC) Name: [Kenneth \(Shane\) Dittlinger](#)

(The primary contact person for all Department mail or other communications regarding drinking water compliance)

Mailing Address: [2103 E. Park Ave.](#)

City: [Kremmling](#) State: [CO](#) Zip: [80459](#)

Phone: [970-724-3003](#) E-mail: kdittlinger@blm.gov

Legally Responsible Water System Owner Name: [Bureau of Land Management](#)

(An individual, corporation, partnership, association, state or political subdivision thereof, municipality, or other legal entity)

Mailing Address: [2103 E. Park Ave.](#)

City: [Kremmling](#) State: [CO](#) Zip: [80459](#)

Phone: [970-724-3003](#) E-mail: kdittlinger@blm.gov

Emergency Contact Name: [Christopher Smith](#)

(Someone the Department can contact in an emergency if the administrative contact is unavailable)

Mailing Address: [2103 E. Park Ave.](#)

City: [Kremmling](#) State: [CO](#) Zip: [80459](#)

Phone: [970-724-3008](#) E-mail: c7smith@blm.gov

Operator is Responsible Charge-Main Contact: [Kenneth \(Shane\) Dittlinger](#)

(A certified operator designated by the owner to have ultimate responsibility for decisions regarding operational activities)

Operator ID#: [35438](#) (not the certificate number)

Phone: [970-724-3003](#) Email: kdittlinger@blm.gov

Operator is Responsible Charge-Alternate Contact: [Christopher Smith](#)

(A certified operator designated by the owner as the alternate to have responsibility for decisions regarding operational activities)

Operator ID#: [35439](#) (not the certificate number)

Phone: [970-724-3008](#) Email: c7smith@blm.gov

BLM-Colorado State Water Coordinator: [Blaine Vecchia](#)

(An individual, corporation, partnership, association, state or political subdivision thereof, municipality, or other legal entity)

Mailing Address: [2815 H Road](#)

City: [Grand Junction](#) State: [CO](#) Zip: [81506](#)

Phone: [970-549-6536](#) Email: bvecchia@blm.gov

2.0 System Summary

2.1 Population Types and Seasons

Completed by: [Blaine Vecchia](#), bvecchia@blm.gov

Certification of Accuracy: I hereby certify that the information is true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Service Connections provide water through a pipe or constructed conveyance for human consumption which includes drinking, showering, hand-washing, or cooking. Examples of service connections: single family homes, a metered multi-family dwelling unit, a business building, a mobile home trailer, or camp spigot.

Resident Population is the number of people who live there.

Resident Population: [n/a](#)

Non-Transient Population is the number of same people who have regular opportunity to consume the water for six months or more per calendar year, but do not reside there. These are usually students or employees. Regular opportunity is defined as four or more hours per day, for four or more days per week, for six months or more per year.

Non-Transient Population: [n/a](#)

Transient Population is the daily average number of people who have an opportunity to consume the water, but are not residents or non-transients. These are customers, visitors, or seasonal employees

If your transient population varies by season you may specify multiple seasonal populations, otherwise enter January and December for the months.

Average Transients per season: [Estimated 1000-2000/season](#) - Typical months system is in use [April to October](#)

If you need assistance, please call (303) 692-3556 or visit colorado.gov/cdphe/dwcontact.

Definitions of the terms used in this form may be found in 5 CCR 1002-11 (Regulation 11) available at colorado.gov/cdphe/water-quality-control-commission-regulations.

2.2 System Description

The Pumphouse Campground water system is a small water system that is used to supply water to campground users and BLM personal. The campground is located along the Colorado River approximately 13 miles south west of Kremmling, CO. The system is supplied water from a single well. The distribution system consists of two separate buried water lines. The system is a seasonal system which is typically open April-October depending on temperatures. The system is drained at the end of each season.

2.3 Water Types

Groundwater (GW) - Any water under the surface of the ground being neither "surface water" nor "groundwater under the direct influence of surface water."

2.4 Availability

Seasonal (S) - A water facility that is typically used every year to aid a system in meeting high water demands. While a water system may not know when it will need a seasonal source, it is most often used every year. These also may be referred to as peaking facilities. Routine sampling will be required at the Entry Point to the Distribution System.

3.0 Water Source Details

Completed by: [Blaine Vecchia, bvecchia@blm.gov](mailto:bvecchia@blm.gov)

Groundwater Sources					
Facility ID (Assigned by Department)	Name	Availability (P, E, I, or S)	If seasonal, include months anticipated to be in operation	DNR Permit # - Aquifer Name	Well Depth at Completion
	n/a	S	April-October	#116368	140'

4.0 Water Treatment Codes/Details

The codes below are generated by the USEPA for the purpose of standardizing the treatment processes as they are cataloged and tracked within the federal and state database programs. Water systems should have individual process flow diagrams for treatment; from these diagrams, each process should have an associated name. If you struggle to understand the different treatment codes below, please contact the Division's Engineering Section for assistance.

4.1 Water Treatment Codes

DISINFECTION

GASEOUS CHLORINATION (401)

HYPOCHLORINATION BLEACH (421)

CHLORAMINES (200)

CHLORINE DIOXIDE (220)

ULTRAVIOLET RADIATION (720)

OZONATION (541)

CONTACT TIME PROVIDED (825)

FILTRATION

ANION EXCHANGE (836)

CATION EXCHANGE (835)

FILTRATION, BAG (801)

FILTRATION, BAG - ROUGHING (810)

FILTRATION, CARTRIDGE (341)

FILTRATION, CARTRIDGE - ROUGHING (865)

FILTRATION, MICROFILTRATION (895)

FILTRATION, PRESSURE SAND (344)

FILTRATION, RAPID SAND (345)

FILTRATION, ULTRAFILTRATION (347)

FILTRATION, GREENSAND (343)

NANOFILTRATION (890)

NATURAL OR RIVERBANK FILTRATION (GWUDI) (826)

REVERSE OSMOSIS (640)

PRETREATMENT, COAGULATION AND SEDIMENTATION

AERATION (820)

ACTIVATED CARBON, GRANULATED (121)

ACTIVATED CARBON, POWDERED (125)

COAGULATION (240)

DISSOLVED AIR FLOTATION (880)

FLOCCULATION (360)

HYDRAULIC JET MIXING (831)

IN LINE STATIC MIXING (830)

MICROSCREENING (520)

PERMANGANATE (560)

PRESEDIMENTATION (840)

RAPID MIX (600)

SEDIMENTATION (660)

UPFLOW CLARIFIER (845)

OTHER FORMS OF TREATMENT

ACTIVATED ALUMINS (100)

ALGAE CONTROL (160)

BLENDING (896)

FLUORIDATION (380)

INHIBITOR, SILICATE (449)

INHIBITOR/SEQUESTERING AGENT, PHOSPHATE BASED (815)

PEROXIDE (580)

PH ADJUSTMENT - SUPPRESSION (847)

PH ADJUSTMENT - ELEVATION (848)

REDUCING AGENT (620)

4.2 Water Treatment Details

Completed by: [Blaine Vecchia, bvecchia@blm.gov](mailto:bvecchia@blm.gov)

Treatment Plants				
Facility ID (Assigned by Department)	Plant Name	Availability (P, E, I, or S)	If seasonal, include months anticipated to be in operation	Contributing Sources Facility IDs and Names
	n/a	S	April-October	n/a
Treatment Codes (see previous page for codes)				
<i>HYPOCHLORINATION BLEACH (421)</i>				
<i>FILTRATION, CARTRIDGE (341)</i>				
Provide a Detailed Description of the Water Treatment System (including descriptions of tanks used for disinfection contact time)				
Well water is pumped through sediment filter and then through a proportional chemical injection system. NSF certified Sodium Hypochlorite (bleach) is dosed proportionally with water systems flow. Treated water enters a pressure tank and from there into a 120 gallon baffled contact/storage tank prior to distribution.				

Note - Sodium Hypochlorite (bleach) degrades over time. Policy recommendation for changing the chlorine/water mixture in the Chlorine Solution Tank is every 30 days, with the maximum replacement time of 60 days. Instructions on how to mix chlorine/water solution can be found in Section 11.8.

5.0 Distribution System Details

5.1 Definitions

Entry point -A location before or at the first customer which is representative of treated (finished) water. The entry point may represent treated water from multiple treatment plants and/or multiple sources. Sometimes the water treatment plant is the first tap.

Distribution system storage facility - Any treated (finished) water storage tank at the treatment plant or in the distribution system that is not considered part of disinfection contact time (i.e. after the entry point).

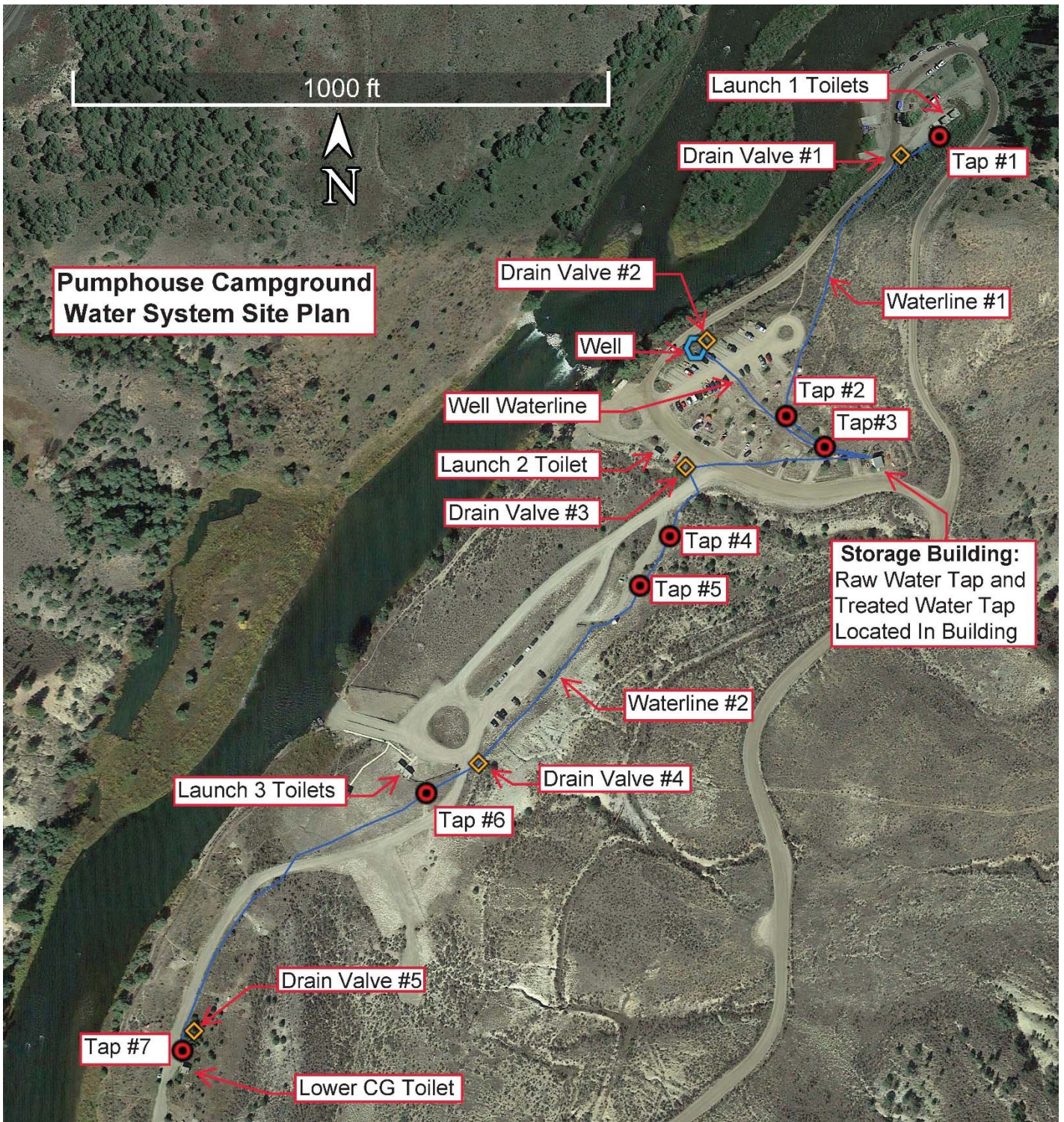
5.2 Distribution System Information

Completed by: [Blaine Vecchia, bvecchia@blm.gov](mailto:bvecchia@blm.gov)

The distribution systems consist of 2 independent buried water lines. Waterline #1 and Waterline #2. Each waterline branches from the main treated waterline immediately downstream of the disinfection system.

6.0 Schematics and Maps

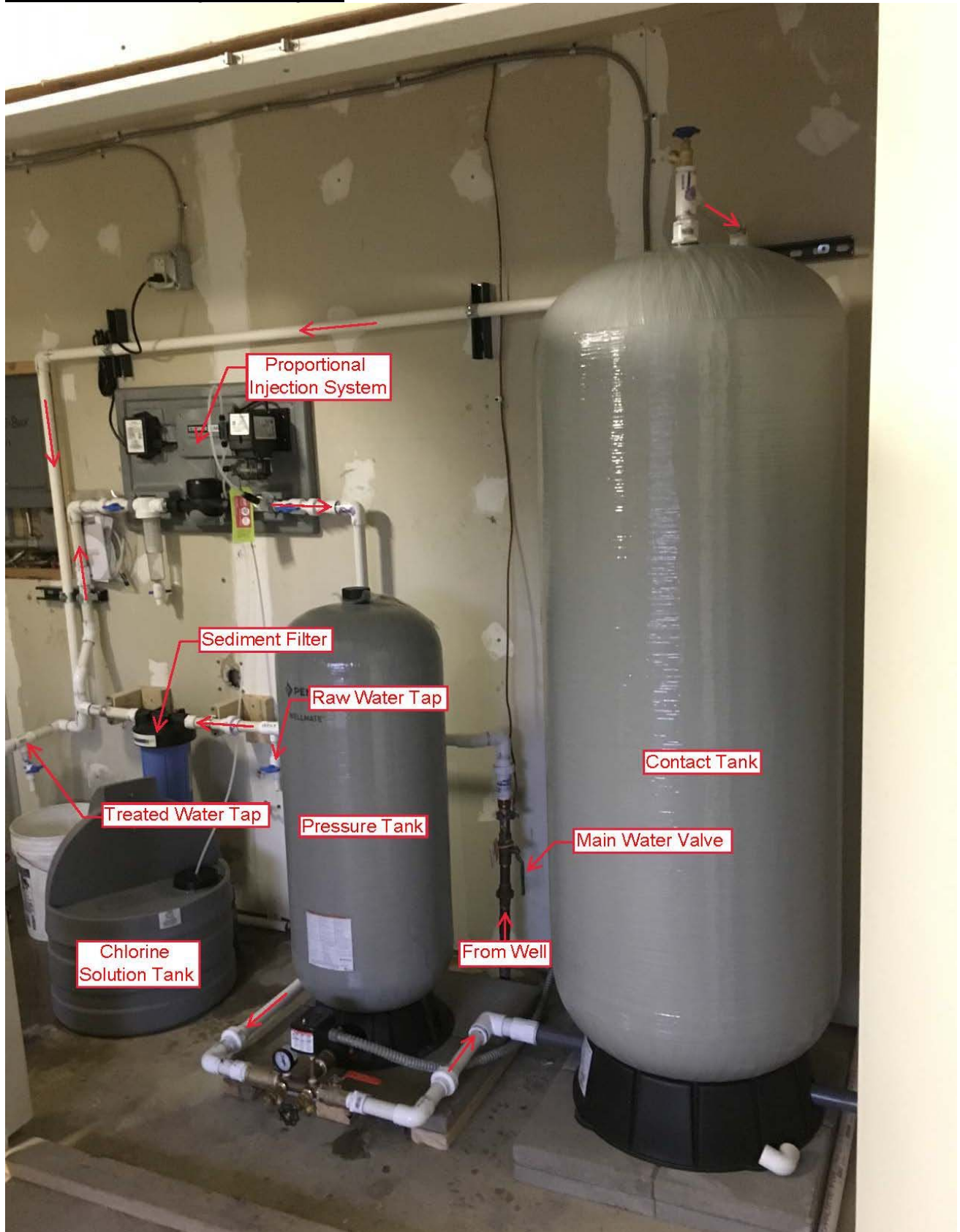
6.1 Water System Site Plan



6.2 Launch 2 Site Plan-Well and Storage Building



6.3 Disinfection System Layout



7.0 Records Locations

Completed by: [Blaine Vecchia, bvecchia@blm.gov](mailto:bvecchia@blm.gov)

These records must be made available for inspection for Department staff during site visits.

Type of Record	Location Address	Retain no less than...
Total Coliform (TCR) and Fecal Coliform/ <i>E. coli</i> results AND distribution system residual disinfection monitoring results	BLM 2103 E. Park Ave, Kremmling Co	5 years
Revised TCR (RTCR) assessment forms or corrective actions as a result on an assessment, or other available summary documentation of the sanitary defects and corrective actions	BLM 2103 E. Park Ave, Kremmling Co	5 years after completion of the assessment or corrective action
Violations of Regulation 11, including corrective action	BLM 2103 E. Park Ave, Kremmling Co	3 years after corrective action is completed
Sanitary surveys, including any written reports, summaries or correspondences	BLM 2103 E. Park Ave, Kremmling Co	10 years
Variances or exemptions granted by the Department	BLM 2103 E. Park Ave, Kremmling Co	5 years after expiration
Public notices and consumer confidence reports, including certification	BLM 2103 E. Park Ave, Kremmling Co	3 years
Individual rule sampling plans	BLM 2103 E. Park Ave, Kremmling Co	10 years
Corrective actions taken for the Groundwater Rule	BLM 2103 E. Park Ave, Kremmling Co	10 years
Invalidation of fecal indicator-positive groundwater source samples for the Groundwater Rule	BLM 2103 E. Park Ave, Kremmling Co	5 years
For systems conducting compliance monitoring for the Groundwater Rule <ul style="list-style-type: none"> Department-specified minimum disinfectant residual 	BLM 2103 E. Park Ave, Kremmling Co	10 years
Nitrate and Nitrite analyses results	BLM 2103 E. Park Ave, Kremmling Co	10 years

8.0 Routine Coliform Monitoring

Completed by: [Blaine Vecchia, bvecchia@blm.gov](mailto:bvecchia@blm.gov)

The Total Coliform Rule may be found in 5 CCR 1003-1, Article 5.
Residual disinfectant requirements may be found in 5 CCR 1003-1, Articles 7 and 13.

8.1 Laboratory Information

Preferred lab: Three Lakes Water and Sanitation District

Address: 1111 County Road 48 (Golf Course Road) Grand Lake, CO 80447

Phone: 970-627-3448

Alternate lab: CDPHE Laboratory Service Division

Web Address:

https://docs.google.com/forms/d/e/1FAIpQLScdrb4VLpvHX8kaDWfDMGEJ8dPA05p4au_4fWH9it_8pR0iRQ/viewform?fbzx=-6678512966821793000

Phone: 303-692-3048

8.2 Routine Sampling Information

Number of routine total coliform samples to be collected each month: **3/Month**, see "Table 1" for sample locations.

Seasonal systems must obtain a **safe** total coliform result approximately 10 days prior to opening for the season. For complete instruction of startup for the water system, see "Start-up Procedures for BLM Pumphouse Recreations Site Water System".

The routine samples represent the entire distribution system. Raw Water Tap represents water quality in the well, Treated Water Tap represents the chlorinated water (Treated Water). Taps #1, #2, #3 represent water quality within Waterline #1. Taps #4, #5, #6 and #7 represent water quality within Waterline #2.

Samples shall be taken during the *first* week of each month, and taken *early* in the day, *early* in the week and as noted for seasonal start up.

The total coliform MCL is exceeded for this system if there are 1 or more positive sample in a calendar month.

Table 1 - Coliform Sample Tap Locations

Tap Name	Start Up or Month
Raw Water Tap Treated Water Tap Tap #1 Tap #7	Start-Up
Treated Water Tap Tap #2 Tap #6	May
Treated Water Tap Tap #3 Tap #5	June
Treated Water Tap Tap #1 Tap #4	July
Treated Water Tap Tap #2 Tap #7	August
Treated Water Tap Tap #3 Tap #6	September
Treated Water Tap Tap #1 Tap #5	October

8.3 Actions To Be taken When Routine Coliform Samples are NOT Taken

1. If a monthly samples are not taken, a Tier 3 public notification must be prepared and posted. See Section 12.0, Public Notifications and Appendix A for detailed guidance on the required content and when the notice must be posted.
2. Ensure the notification is signed on the second page by the Field Office Manager. This certifies that the notification has been prepared and posted in accordance with the appropriate regulations. **Send a copy of the signed notification to CDPHE Drinking Water Program within 10 days of posting.**
3. Post the completed public notification on all information kiosks at the campground within 30 days.
4. File a copy of the public notification with the monitoring results.

8.4 Actions To Be taken When Routine Coliform Sample Tests Positive

1. Ensure that the laboratory tests the sample for *E. coli*. State-certified laboratories should test positive total coliform samples for *E. coli* automatically, but the water system should verify that this has been completed.
2. Take 3 repeat samples plus 1 Ground Water Rule-triggered monitoring sample within 24 hours of notification of a positive routine sample.
3. To comply with the Ground Water Rule, after a positive coliform result, in addition to the three repeat samples, a sample must be taken from the well or sample tap closest to the well prior to

treatment. The Ground Water Rule refers to this sampling as triggered monitoring. Therefore, in the event of a positive coliform sample, the system must sample the tap closest to the source prior to treatment. The sample tap closest to the well is "Tap #1".

4. Repeat samples shall be taken from the same tap as the original positive coliform sample and at the taps as shown in the "Repeat Coliform Sample Taps" shown on Table 2.
5. Repeat sample process must be repeated until a complete set of repeat samples are total coliform negative.
6. Attempt to find the cause or source of the positive result.
7. If the sample is positive for *E. coli*, the water system is to be immediately shutdown to prevent use. Notify CDPHE Drinking Water Program, BLM Field Office Manager, and State Water Coordinator within 24 hours of the positive result. The water system must remain shut down until samples are absent of coliforms.

8.5 Repeat Coliform Monitoring

1. Collect three repeat coliform samples plus one Ground Water Rule-triggered monitoring sample from the predetermined sample taps indicated in the "Repeat Coliform Sample taps" table below. Collect repeat samples within 24 hours of being notified of the positive result by the laboratory.

Table 2 - Repeat Coliform Sample Taps

Tap Number/Name	Month/Routine Sample Taken	Repeat and Ground Water Rule Sample Taps			
	Start-Up				
Raw Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
1	Positive Sample	Raw Water Tap	Treated Water Tap	1	3
7	Positive Sample	Raw Water Tap	Treated Water Tap	7	4
	May				
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
2	Positive Sample	Raw Water Tap	Treated Water Tap	1	3
6	Positive Sample	Raw Water Tap	Treated Water Tap	7	4
	June				
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
3	Positive Sample	Raw Water Tap	Treated Water Tap	1	2
5	Positive Sample	Raw Water Tap	Treated Water Tap	7	4
	July				
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
1	Positive Sample	Raw Water Tap	Treated Water Tap	3	2
4	Positive Sample	Raw Water Tap	Treated Water Tap	5	7
	August				
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
2	Positive Sample	Raw Water Tap	Treated Water Tap	1	3
7	Positive Sample	Raw Water Tap	Treated Water Tap	6	4
	September				
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
3	Positive Sample	Raw Water Tap	Treated Water Tap	1	2
6	Positive Sample	Raw Water Tap	Treated Water Tap	4	7
	October				
Treated Water Tap	Positive Sample	Raw Water Tap	Treated Water Tap	1	7
1	Positive Sample	Raw Water Tap	Treated Water Tap	3	2
5	Positive Sample	Raw Water Tap	Treated Water Tap	4	7

2. If any or all of the three repeat samples are not taken or if the Ground Water Rule-triggered monitoring sample is not taken complete the following:
 - a. Perform a Level 1 assessment. See Section 9.0, Treatment Technique Triggers and Assessments and Appendix B for detailed guidance on how to perform the assessment.
 - b. Prepare a Tier 3 public notification and post it on all kiosks or bulletin boards located within the campground within 30 days (See Section 12.0, Public Notifications, and Appendix A). Ensure the notification is signed on the second page by the Field Office Manager. This certifies that the notification has been prepared and posted in accordance with the appropriate regulations.
 - c. Send a copy of the certified public notification that was signed by the BLM Field Office Manager to CDPHE-Drinking Water Program within 10 days of posting the public notification.
 - d. File a copy of the public notification, including the certification and the letter that accompanied the notification to CDPHE-Drinking Water Program with the monitoring results.

8.6 Actions to be Taken if One or More Repeat Samples Tests Positive for Total Coliform

1. If one or more of the repeat samples tests positive for total coliforms ONLY, a Level 1 Assessment must be performed within 30 days. See Section 9.1, When and How to Perform a Level 1 Assessment, and Appendix B for detailed guidance. This is referred to as a "triggered assessment" and the maximum contaminant level (MCL) is NOT violated. NOTE: If a second Level 1 assessment is triggered within a 12-month rolling period, a Level 2 assessment must be performed.
2. Inform the CDPHE Drinking Water Program, BLM Field Office Manager and State Water Coordinator within 24 hours of the positive repeat sample, clarify that the results were positive for total coliforms only, and that a Level 1 assessment will be performed.
3. Document guidance received from CDPHE-Drinking Water Program if applicable.

8.7 Actions to be Taken when Monthly or Repeat Samples Test Positive for E. coli or One or More Repeat Samples Test Positive for Total Coliforms

1. If the sample tests positive for *E. coli*, the water system is to be immediately shutdown and all taps closed to prevent their use. Notify CDPHE Drinking Water Program, BLM Field Office Manager and State Water Coordinator within 24 hours of the positive result. The water system must remain closed until samples are absent of coliforms. Document guidance received from CDPHE Drinking Water Program and BLM personal.
2. Document guidance received from CDPHE-Drinking Water Program, local management, and BLM State Water Coordinator, noting the actual guidance received, date, and time of the call. Document the same information even if it is provided in a voice mail.
3. Implement the guidance provided by CDPHE-Drinking Water Program, local management, and BLM State Water Coordinator.
4. Prepare a Tier 1 public notification and post it on all information kiosks and bulletin boards within the campground within 24 hours (See Section 12.0, Public Notifications, and Appendix A).
5. Ensure the notification is signed by the Field Office Manager.
6. Send a signed copy of the notification to CDPHE Drinking Water Program within 10 days of posting and file a copy of the public notification with the monitoring results.
7. Arrange to have CDPHE Drinking Water Program or a 3rd party approved by CDPHE to perform a Level 2 assessment within 30 days. See Section 6.3, How to Perform a Level 2 Assessment, and Appendix B for detailed guidance.

8. Ensure that the Level 2 assessment is performed, corrective actions are completed, and documentation of their completion is sent to CDPHE Drinking Water program within 30 days of the triggering of the Level II assessment. If all of these items cannot be completed within 30 days negotiate a schedule for their completion with CDPHE-Drinking Water Program.

If unsure as to what must be done, consult Table 3 to determine whether a Level 1 or Level 2 assessment is triggered and if a public notification must be prepared and posted. See Section 9.0, Treatment Technique Triggers and Assessments, for detailed guidance on performing the assessment. See Section 12.0, Public Notifications, and Appendix A for detailed guidance on the required content and when the notice must be posted.

8.8 Routine Monitoring After a Positive Sample

Seasonal systems on monthly monitoring schedules are no longer required to collect “temporary routine” bacteriological samples the following month after a total coliform-positive sample result.

Return to routine monthly monitoring.

Table 3 - Assessment and Public Notification Triggers

Routine total coliform	Routine <i>E. coli</i>	Repeat total coliform	Repeat <i>E. coli</i>	Level 1 Assessment	Level 2 Assessment	Public Notification
absent	N/A	N/A	N/A	No	No	No
positive	absent	absent	absent	No	No	No
positive	absent	positive	absent	Yes	No	No
positive	positive	absent	absent	No	No	No
positive	positive	positive	absent	No	Yes	Yes
positive	absent	positive	positive	No	Yes	Yes
positive	positive	positive	positive	No	Yes	Yes

8.9 Residual Disinfectant Monitoring

Distribution System Residual Disinfectant Monitoring

The residual disinfectant must be measured at the same time and the same location as each total coliform bacteria sample. Measurements must be conducted in the field by a certified operator or under the direction of the certified operator and must be written on each total coliform chain of custody when it is submitted to the laboratory.

Disinfectant used in the distribution system:

Sodium Hypochlorite (bleach)

Residual disinfectant quality assurance/quality control (QA/QC) - explain the exact procedures to be followed to ensure that the field test measurement will be accurate. This may be found in the manufacturer’s literature: [Free chlorine residual shall be measured as instructed by the Hach Pocket II Colorimeter instruction manual. Samples shall be taken at the Treated Water Tap and each of the samples tap designated for the start-up or scheduled monthly coliform bacteria sample. See locations for samples on Table 1.](#)

After system disinfections as described in the start-up procedures, and before opening of the water system, multiple free chlorine residual samples may be required while adjusting the free chlorine residual to be within acceptable limits. Free chlorine residual shall not fall below 0.2mg/L or exceed 4.0 mg/l while supplying water to users.

8.10 Residual Disinfectant Monitoring Treatment Technique Compliance Determination

The system is required to maintain a detectable residual disinfectant level in the distribution system. The minimum detectable level is 0.2mg/L.

Completed by: [Blaine Vecchia](#), bvecchia@blm.gov

9.0 Treatment Technique Triggers and Assessments

Water systems are required to perform and document assessments to identify and correct defects that could provide a pathway of entry for microbial contamination into the distribution system or that are indicative of a failure or imminent failure in a barrier that is already in place.

There are two levels of triggered assessments, Level 1 and Level 2. The assessment level depends on the trigger's potential impact to public health.

9.1 When and How to Perform a Level 1 Assessment

A Level 1 assessment is triggered if one of the following occurs:

- A routine sample tests positive for only total coliforms and one or more of the repeat samples tests positive for only total coliforms; or
 - All three repeat samples and the Ground Water Rule-triggered monitoring sample are not collected following a positive coliform sample.
1. A Level 1 assessment is a basic examination of the source water, treatment, distribution system, and relevant operational practices. It is intended as a self-assessment and is typically performed by a person or persons responsible for the system or with BLM personnel who are knowledgeable of the water system, or approved CDPHE Drinking Water program third-party consultants.
 2. Perform and document the assessment within 30 days of the trigger.
 3. Public water systems are required to follow CDPHE Drinking Water Program Level 1 Assessment procedures. See Appendix B for more information.

9.2 When to Perform a Level 2 Assessment

1. Any of the three repeat samples or the Ground Water Rule-triggered monitoring sample test positive for *E. coli*;
2. A routine sample tests positive for *E. coli* and any of the repeat samples test positive for *E. coli* or total coliform. This means that a Level 2 Assessment must be completed if any of the repeat samples test positive for coliforms, even if all the repeat samples test negative for *E. coli*.
3. Failure to take all required repeat samples following a routine sample that tests positive for *E. coli*;
4. Failure to test for *E. coli* following any repeat samples that test positive for coliform;
5. A second Level 1 assessment is required within a rolling 12-month period. Instead of performing a second Level 1 assessment, a Level 2 assessment is required. See Appendix B for more information.

9.3 How to Perform a Level 2 Assessment

1. Inform CDPHE Drinking Water Program, BLM Field Office Manager and BLM State Water Coordinator that a Level 2 assessment is required. Follow and document guidance received.
2. Ensure that the Level 2 assessment is performed, complete the Level 2 Assessment form as shown in Appendix B. Document all the corrective actions that were taken and ensure all actions are completed within 30 days of the assessment being triggered.

9.4 Actions Required Following a Level 1 or Level 2 Assessment

1. Correct sanitary defects found through either a Level 1 or Level 2 assessment within 30 days. A sanitary defect is defined as "a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place."
2. If the sanitary defect cannot be corrected within 30 days, contact CDPHE Drinking Water Program, BLM Field Office Manager, BLM State Water Coordinator, and the CASHE Program Lead for guidance, keeping in mind that all corrective actions should be completed as soon as feasible.

9.5 Coliform Treatment Technique Violations

If a Level 1 or Level 2 assessment is not performed within 30 days after a trigger or if any sanitary defects identified during the Level 1 or Level 2 assessment are not corrected within 30 days, or in accordance with a schedule acceptable to State Water Coordinator and the CASHE Program Lead, complete the following:

1. Inform the CDPHE Drinking Water program, BLM Field Office Manager and BLM State Water Coordinator that the assessment was not performed or the corrective action was not completed and ask for further guidance.
2. Prepare a Tier 2 public notification and post it on all information kiosks and bulletin boards in the Campground within 30 days (See Section 12.0, Public Notifications, and Appendix A). Ensure the notification is signed by the Field Office Manager.
3. Send a copy of the certified public notification that was signed by the Field Office Manager to CDPHE-Drinking Water Program within 10 days of posting the public notification.
4. File a copy of the public notification, including the signed certification and the letter that accompanied the notification to CDPHE-Drinking Water Program, with the monitoring results

10.0 Routine Nitrate/Nitrite Monitoring

10.1 Laboratory Information

Preferred lab: ACZ Laboratories, Inc.

Web Address: 2773 Downhill Drive, Steamboat Springs, CO 80487

Phone: 800-334-5493, sales@acz.com

Alternate lab: CDPHE Laboratory Service Division

Web Address:

https://docs.google.com/forms/d/e/1FAIpQLScdrb4VLpvHX8kaDWfDMGEJ8dPA05p4au_4fWH9it_8pR0iRQ/viewform?fbzx=-6678512966821793000

Phone: 303-692-3048

The MCL for Nitrate is 10.0 mg/L measured as nitrogen.

10.2 Nitrate Sampling

Collect the annual samples within the first month after the water system being opened.

1. Collect one sample from the Raw Water tap in the storage building.
2. Take the sample using the container provided by the laboratory.
3. If a nitrate sample is not taken, prepare and post a public notification at all information kiosks and bulletin boards within the campground. See Section 12.0 Public Notifications for MCL and Monitoring Violations, and Appendix A for detailed guidance on the required content and when the notice must be posted.
4. File a copy of the public notification, including the signed certification, with the monitoring results.

10.3 Actions Taken if Annual Nitrate Sample Exceeds the MCL of 10.0 mg/L

1. Take a confirmation sample within 24 hours of receiving the notification from the lab that the initial sample result exceeded the MCL.
2. If a confirmation sample is not taken within 24 hours, the water system is to be immediately shutdown and all taps closed to prevent their use, and prepare a public notification and post on all information kiosks and bulletin boards within the campground. The notification must state that the nitrate MCL has been violated and the notification must be posted on site within 24 hours. Under this circumstance, a repeat sample must be taken and analyzed within 2 weeks of receiving the initial MCL violation notification.
3. If the average of the initial and confirmation sample is below 10 mg/L no further action is necessary.
4. If the average of the initial and confirmation sample results exceeds the MCL, ensure the water system remains shutdown and all taps closed to prevent their use and prepare/ensure a public notification is posted on all the information kiosks and bulletin boards throughout the campground.
5. Public notification to be prepared using the form provided in Appendix A. See Section 9.0, Public Notification, for detailed guidance on the required content and when the notice must be posted. Ensure the notification is signed by the Field Office Manager.
6. Inform the Field Office manager and State Water Coordinator of the Nitrate MCL violation. They must be informed of MCL violations within 24 hours of being notified by the laboratory of the MCL violation.

10.4 Nitrite Monitoring

CDPHE Drinking Water Program Nitrite sampling requirements for transient, non-community water systems is every 3 years, however so as not to overlook the 3-year cycle, BLM policy for nitrite sampling is sampling shall be taken every year at the same time and location as the nitrate sample.

The MCL for nitrite is 1.0 mg/L measured as nitrogen.

If MCL exceeds 1.0 mg/L for Nitrite, perform the actions required for exceeding the Nitrate MCL violation.

11.0 Instructions

The Revised Total Coliform Rule, provided in section 11.16 of Regulation 11, became effective April 1, 2016, and included:

- A definition for a seasonal system public water system.
- A NEW requirement that seasonal systems must complete department-approved start-up procedures each season.

11.1 System Inspection and Integrity Check

- a. Look for any damage or evidence of contamination associated with any part of the waterworks that may have occurred during the offseason.
- b. Inspect the wellhead and verify that the well casing is structurally sound, the well cap is tightly attached, vents are downturned with intact screens, and the electrical conduit is securely in place. Inspect the area surrounding the wellhead.
- c. Inspect the water treatment equipment and tubing. Inspect storage and pressure tanks, plumbing lines, and fitting. Do a walk-through of the water distribution systems. Look at pipes, valves, and backflow prevention devices - ensure such devices have been appropriately tested. Ensure that all components of the water system operate correctly, and are repaired/replaced as needed.

11.2 Charging the Distribution System

- a. Place signs on all spigots and hydrants in the water system stating, **“Warning: Do Not Drink Water - Water System Maintenance Being Performed”**.
- b. Close all drain valves, #1-#5, by removing the plastic covers from drain valve boxes to expose curb stop. Place the curb stop key onto curb stop and turn clockwise 90 degrees until valve is closed. *Note: not all curb stops are visible within standpipes, lower curb key as needed into standpipes until curb stop is located and key fits securely onto curb stop.*
- c. Inside of the storage building, close the valve directly upstream of the filter on the proportional injections panel. Close the drain valves on the pressure and contact tanks. Verify fitting on waterlines within the disinfection system are attached, i.e. unions, etc. Place a bucket under the Raw Water tap or install piping below the Raw Water Tap and extend outside and downslope of the building for discharge of water.
- d. Install a new sediment filter, inspect “O” ring and replace “O” ring if cracked or damaged.
- e. Locate the electrical circuit panel and turn on circuit breakers for “Well Pump”. Open the Main Water Valve and then the Raw Water Tap, to start water flowing. Allow water to flow until water runs clear, then close Raw Water Tap. Open the valve directly upstream to the filter on the proportional injections panel.
- f. On Waterline #1, hold open Taps #1, #2, and #3 on. (Use duct tape or wire, etc. to hold taps open.)
- g. In storage building, slowly open Waterline #1 Valve to a *maximum* of ¼ open,

allow water to flow approximately 2-3 minutes before fully opening. (Note: Waterlines #1 and #2 valves are not shown on the "Disinfections System Photo" but are near the Treated Water Tap and are marked for identification.)

- h. Allow water to flow through Waterline #1 for approximately 5-10 minutes to purge trapped air, and then close all spigots.
- i. On Waterline #2, open Taps #4, #5, #6 and #7. (Use duct tape or wire, etc. to hold taps open.)
- j. In storage building, slowly open to a *maximum* of $\frac{1}{4}$ in the open position, the Waterline #2 Valve" and allow water to flow approximately 2-3 minutes before fully opening. (Note: Waterlines #1 and #2 valves are not shown on the "Disinfections Photo" but are near the Treated Water Tap and are marked for identification.)
- k. Allow water to flow through Waterline #2 for approximately 5-10 minutes to purge trapped air, and then close all hydrants/spigots.

11.3 Integrity Check

- a. Leaks in the waterworks, especially in buried piping, provide potential conduits for contaminants to enter when the water system is drained or when system pressure is lost. To help gain a better understanding of leakage within the distribution system(s), conduct an integrity check once the system is re-pressurized as follows:
 - i. After filling the system with water and with all the taps turned off, switch off the power supply to the well pump. Read the water system's pressure gauge and note the initial system pressure.
 - ii. After one hour, read the pressure gauge again and document the system pressure. Any pressure loss over this one hour time span indicates leaks. The pressure must remain within 15% of the original pressure.
 - iii. Some system leakage is to be expected; however, if pressure loss is greater than 15%, the leak must be found and repaired.
 - iv. Ensure that repaired/replaced distribution system components are properly disinfected (see the section below that addresses system disinfection) prior to serving water.
 - vi. Comparing pressure loss data from year to year can provide insight into the relative degree of leakage within the distribution systems.

11.4 System Disinfection and Flushing

- a. Disinfection of waterworks is a required step in the start-up procedure.
 - i. Add 3 gallons of well water to the Chlorine Solution Tank along with 5 cups of NSF Certified 8.25% bleach. (Note: Use only NSF Certified, un-scented bleach). Place tubing into Chlorine Solution Tank and verify tubing is connected properly to the Proportional Injection Panel as described in the manufacturer's instructions. Plug panel into the outlet above the Proportional Injection Panel. Remove air from tubing as instructed in the manufacturer's instructions. Set the control knob on the pump control located in the upper left portion of the panel to approximately 50%. Verify chlorine is being pumped into the system.

- b. For seasonal systems that consist of buried water lines, the Department requires highly chlorinated water be used in accordance with American Waterworks Association (AWWA) published standards. Chlorine residual must be greater than 10mg/L after each segment of the waterworks is isolated for at least 12 hours.
 - i. Adjust the chlorine injection pump or increase the amount of chlorine in the chlorine solution tank until the chlorine residual is 10.0 mg/L or greater and fill all distribution lines with the chlorinated water. Allow this water to remain in the distribution system for a minimum of 12 hours.
 - ii. After system disinfection, be sure that any highly concentrated chlorine is flushed from the system prior to collecting the sample to be analyzed.
 - iii. Once disinfection is completed, the water system must be operated and allowed to return to the typical level of background chlorine residual prior to serving customers. Per Regulation 11 and effective April 1, 2016, free chlorine residual must be greater than or equal to 0.2 mg/L throughout the distribution system.
 - iv. Add an additional water (8-12 gallons) of well water to the solution tank and adjust the chlorine injection pump as needed to decrease the free chlorine residual so that it is greater than 0.2 mg/L but less than 4.0 mg/L. The desired free chlorine level at the "Treated Water Tap" is between 0.5 mg/L - 0.8 mg/L.

11.5 Entry Point and Distribution System Monitoring (Sampling)

- a. Prior to serving water to the public for a given season, Regulation 11 requires the collection of a sample from within the distribution system and have it tested for total coliform. **The sample must test absent for the presence of coliform bacteria prior to the supplier serving water to the public for that season.**
- b. During normal operations, total coliform samples must be collected in the distribution system every month and analyzed for chlorine residual and total coliform bacteria during the operating season.
- c. Also during normal operations, all required entry point sampling must be performed in accordance with the system's monitoring schedule.
- d. An EPA approved chlorine test kit must be used to assure there is appropriate chlorine residual in the distribution system.

11.6 Additional Start-Up Requirements

- a. Complete seasonal system start-up instructions, procedures, and requirements are found in the **"Revised Total Coliform Rule Start-up Procedures for BLM Pumphouse Rec. Site Water System, PWSID #CO0225625**. Submit appropriate paperwork to CDPHE as required.

11.7 System Shut-Down Procedures

- a. Post signs that the water system is closed.
- b. Locate the electrical circuit panel and turn on off circuit breakers for "Well Pump". Remove vacuum breaker from the contact tank drain valve and extend hose outside

and downstream of the building to drain water. Open valve to drain tank. Repeat process for pressure tank.

- c. Place bucket under Raw Water Tap and open valve to drain. Repeat process for Treated Water Tap. Leave valves open.
- d. Remove sediment filter housing directly downstream of Raw Water Tap, drain water, dispose of filter, and rinse housing. Loosely re-attach housing. Open valve below filter on Proportional Injection System to drain.
- e. Open PVC unions on waterline that are located upstream and downstream of pressure tank to release water trapped water.
- f. Separate unions on each side of the flow meter on the Proportional Injection System to drain water from meter. Remove and drain water from ¼" tubing between the chlorine solution tank and Proportional Injection System. Disconnect ¼" tubing that flows into and out of the injection pump and drain lines. Run a few cycles on the injection pump to remove water from tubing inside housing. See manufacturer instructions if needed. Once drained, re-connect all items. Unplug the Proportional Injection System.
- g. Verify "Waterline Valve #1" and "Waterline Valve #2" are open. (Note: Waterlines #1 and #2 valves are not shown on the "Disinfections Photo" but are near the "Treated Water Tap" and are marked for identification.)
- h. Open all drain valves, #1-#5, by removing the plastic covers from drain valve boxes to expose curb stop. Place the curb stop key onto curb stop and turn counter-clockwise 90 degrees until valve is open. *Note: not all curb stops are visible within standpipes, lower curb key as needed into standpipes until curb stop is located and key fits securely onto curb stop.*
- i. Hold open Taps #1-#7 one tap at a time to release trapped water. Remove vacuum breakers prior to opening if applicable.
- j. Allow Drain Valves #1-#5 to remain open.

11.7 Disposal of Chlorinated Water in Solution Tank

- a. Empty chlorinated water from solution tank and replace with a new chlorine/water mixture a maximum of every 60 days. Empty the solution tank in tank outside of the storage building but do not allow water to come in contact with the Colorado River.

11.8 Chlorine Solution Tank-Chlorinated Water Routine Replacement

- a. Add approximately 10 gallons of well water to the Chlorine Solution Tank along with 5 cups of NSF Certified 8.25% bleach. (Note: Use only NSF Certified, un-scented bleach). Place tubing into Chlorine Solution Tank and verify tubing is connected properly to the Proportional Injection Panel as described in the manufacturer's instructions. Plug panel into the outlet above the Proportional Injection Panel. Remove air from tubing as instructed in the manufacturer's instructions. Set the control knob on the pump control located in the upper left portion of the panel to approximately 50%. Verify chlorine is being pumped into the system. Add additional well water and/or adjust the chlorine injection pump as needed to decrease the free chlorine residual so that it is greater than 0.2 mg/L but less than 4.0 mg/L. The desired free chlorine level at the "Treated Water Tap" is between 0.5 mg/L - 0.8 mg/L.

11.9 Disinfection of Well and Water System

General Information: Well Depth: 136'
 Pump Set: 128'
 Casing Diameter: 6"
 Estimated Water Volume in Well: 175 Gallons

- a. Place signs on all taps in campground stating "Do Not Drink Water-Water System Maintenance Being Performed".
- b. Turn off power to well pump at circuit panel in storage shed. Unplug the power cord to the proportional injection system.
- c. Attach hose to hose bid connection on Tap #2 (If hose bib has lock installed on bib, the key can be found on wood peg board panel above bench in storage shed) and extend hose to well location. Open the hose bid.
- d. Remove and inspect sanitary well cap and gasket. Replace well cap and/or gasket if required.
- e. Mix 5 cups of NSF certified 8.25% bleach with 5 gallons of water and pour mixture into well. Place end of hose connected to Tap #2 inside well casing.
- f. Turn on power to the well pump and circulate the water in the well through the hose until the odor of chlorine can be detected. Once detected, continue circulating the chlorinated water in the well, washing the interior and exterior of the well with the chlorinated water for 1 hour.
- g. Open all Taps #1-#7 on both waterlines one at a time until the odor of chlorine is detected then close tap. Turn off power to well pump and close valve to both Waterline #1 and Waterline #2.
- h. Allow highly chlorinated water to remain in the well and distribution system for 24 hour.
- i. After 24 hours, Open valve to Waterline #1 and Waterline #2 and turn on power to well pump. Open Taps #1 and #3 on Waterline #1 and Taps #4 and #7 on Waterline #2 to begin flushing the chlorinated water from the well and distribution system. (Note: It may take 4-6 hours to flush all the chlorine from the well and distribution system) **DO NOT ALLOW THE CHLORINATED WATER TO CONTACT THE RIVER AS THE CHLORINATED WATER WILL KILL AQUATIC LIFE.**
- j. Once the chlorinated water can no longer be detected by testing for the free chlorine residual with the Hach II Colorimeter, turn off all taps.
- k. Plug in power to the proportional injection system and begin the disinfections system process as described in section 11.8. **Chlorine Solution Tank-Chlorinated Water Routine Replacement**, and test according to **Section 8.0 Routine Coliform Monitoring**, prior to opening the water system to users.

12.0 Public Notifications for MCL and Monitoring Violations

APPENDIX A

Public Notifications

Tier 1 <i>E. coli</i> MCL Violation	A-2
Tier 2 Treatment Technique Violation - Failure to Perform Level 1 Assessment.....	A-3
Tier 2 Treatment Technique Violation - Failure to Perform Level 2 Assessment.....	A-4
Tier 2 Treatment Technique Violation - Failure to Complete Start-Up Procedure Prior to Serving Water to the Public	A-5
Tier 1 <i>Nitrate</i> MCL Violation	A-6
Tier 1 <i>Nitrite</i> MCL Violation.....	A-7
Tier 3 Monitoring Violation.....	A-8
Information: Coliform Detected	A-9
Drinking Water Problem Corrected	A-10

DRINKING WATER WARNING

PUMPHOUSE CAMPGROUND WATER IS CONTAMINATED WITH *E. COLI*

BOIL YOUR WATER BEFORE DRINKING OR USING

E. coli bacteria were found in the water supply on ___/___/____. These bacteria can make you sick, and are a particular concern for people with weakened immune systems.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a rolling boil, let it boil for one minute, and let it cool before using it. Boiling kills bacteria and other organisms in the water. You may also use bottled water. Use boiled or bottled water for drinking, making ice, preparing food and washing dishes until further notice.
- *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.
- The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

What happened? What is being done?

Bacterial contamination can occur when increased run-off enters the drinking water source (for example, following heavy rains). It can also happen due to a break in the distribution system (pipes) or a failure in the water treatment process.

The Bureau of Land Management is actively inspecting the system to determine the source of contamination and will take appropriate corrective actions when found. We anticipate resolving the problem within _____.

We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within _____. For more information, please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459... General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at (800) 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Field Manager: _____

Date distributed: ___ / ___ / ___

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

PUMPHOUSE CAMPGROUND FAILED TO PERFORM A LEVEL 1 ASSESSMENT OF THE WATER DISTRIBUTION SYSTEM

Our water system recently had two drinking water samples that tested positive for total coliforms in the same month. Total coliforms found in a water sample is an indicator that there may be sanitary defect in the water system. Sanitary defects are defined as: defects that could provide a pathway of entry for microbial contamination into the distribution system or that are indicative of a failure or imminent failure in a barrier that is already in place.

Although this is not an emergency, as our customers, you have a right to know what happened, what you should do, and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. We took ____ [number] sample(s) for coliform bacteria during ____/____ [month/year]. ____ [Number] of those samples showed the presence of coliform bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, contaminants may be present.

When 2 or more samples in a month test positive for total coliforms, we are required to perform a Level 1 assessment within 30 days of learning of the second coliform-positive sample to identify problems and correct any identified problems. The assessment is performed to identify potential problems and determine (if possible) why coliform bacteria was found in our water system.

We violated the following requirement of the Revised Total Coliform Rule:

____ Failure to perform the required Level 1 assessment within 30 days; OR
____ Failure to complete a correction action following a Level 1 assessment within 30 days

What should I do?

- Unless you have been advised otherwise, **you do NOT need to boil your water** or take other corrective actions. If you have specific health concerns, consult your doctor.
- People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

What does this mean?

This is not an emergency. If it had been you would have been notified immediately. Inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches. Failure to perform the assessment or complete corrective actions prolongs the risk water system contamination. **We have not detected any evidence of disease-causing organisms;** however; we are committed to eliminating the potential threat of contamination.

What is being done?

We have since completed the Level 1 assessment on ___ / ___ / ___ [month/date/year] and identified the following sanitary defect OR We are planning on completing the Level 1 assessment on ___/___/___: _____

We will complete the following corrective action by ___ / ___ / ___ [month/date/year]: _____

For more information, please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459...

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

PUMPHOUSE CAMPGROUND FAILED TO PERFORM A LEVEL 2 ASSESSMENT OF THE WATER DISTRIBUTION SYSTEM

Our water system recently had drinking water samples that tested positive for *E. coli*. A required Level 2 assessment of the water system was not performed as soon as practical and corrective actions were not completed within 30 days. A Level 2 assessment is required to be performed to identify sanitary defects in the water system. Sanitary defects are defined as: defects that could provide a pathway of entry for microbial contamination into the distribution system or that are indicative of a failure or imminent failure in a barrier that is already in place. We failed to perform a required assessment of the water system.

E. coli bacteria were found in the water supply on ___ / ___ / ___ [month/date/year]. These bacteria can make you sick, and are a particular concern for people with weakened immune systems. *E. coli* are bacteria can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.

We were required to perform a Level 2 assessment within 30 days after the following occurred:

- _____ A repeat sample tested positive for *E. coli* on ___ / ___ / ___ [month/date/year];
- _____ A routine sample tested positive for *E. coli* on ___ / ___ / ___ [month/date/year] and a repeat sample tested positive for coliforms on ___ / ___ / ___ [month/date/year];
- _____ Failure to take all required repeat samples following a routine sample that tests positive for *E. coli*.
- _____ Failure to test for *E. coli* following any repeat samples that test positive for coliform; or
- _____ A second Level 1 assessment was required within 12 months.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a rolling boil, let it boil for one minute, and let it cool before using it. Boiling kills bacteria and other organisms in the water. You may also use bottled water. Use boiled or bottled water for drinking, making ice, preparing food and washing dishes **until further notice**.
- *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, some of the elderly, and people with severely-compromised immune systems.
- The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

What does this mean?

This is not an emergency. If it had been you would have been notified immediately. Inadequately protected water may contain disease-causing organisms. Failure to perform the assessment prolongs the risk of water system contamination.

What is being done?

We have since completed the Level 2 assessment on ___ / ___ / ___ [month/date/year]

We identified the following sanitary defect(s): _____

And have taken the following corrective actions: _____

OR We did not identify sanitary defects. In addition, we have collected the following additional water samples:

All samples since the initial positive have tested negative for coliforms and *E. coli*.

For more information, please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Field Manager: _____

Date distributed: ___ / ___ / ___

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

PUMPHOUSE CAMPGROUND FAILED TO COMPLETE START-UP PROCEDURES PRIOR TO SERVING WATER TO THE PUBLIC

What happened?

We failed to complete the approved start-up procedures prior to serving water to the public this year and have violated a requirement for operating our water system. As our customers, you have a right to know what happened and what we are doing to correct this situation.

What does this mean?

This is not an emergency. If it had been, you would have been notified immediately.

[For each part of the start-up procedure that was not completed, include the appropriate following statement exactly as written.]

- *We failed to inspect the water system before we began operating this season. Failing to inspect the water system means damage that occurred while the water system was closed may still be present and could allow contaminants into our drinking water.*
- *We failed to flush old water out of our water system before we began operating this season. Flushing old water out of water system removes bacteria that may have grown while the water system was closed, and these bacteria may be present or present in greater numbers than if we had flushed the old water from our water system.*
- *We failed to disinfect our water system before we began operating this season. Disinfecting the water system kills bacteria that may have grown while the water system was closed, and these bacteria may be present or present in greater numbers than if we had disinfected our water system.*
- *We are required to monitor your drinking water for coliform bacteria before we begin operating our water system each season. Results of this monitoring are an indicator of whether or not your drinking water meets health standards. This season, we did not complete all the required monitoring or testing for coliform bacteria, and therefore cannot be sure of the quality of your drinking water during that time.*

What should I do?

- **You do not need to boil your water or take other corrective actions.** However, if you have specific health concerns, consult your doctor.
- People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA' Safe Drinking Water Hotline at (800) 426-4791 or contact Oregon Health Authority, Drinking Water Services at (971) 673-0405.

What is being done?

[Identify when the start-up procedure was completed and any other corrective actions taken]. We will keep you informed and provide information on any additional steps you should be taking.

For more information, please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Field Manager: _____

Date distributed: ___ / ___ / ___

DRINKING WATER WARNING

FOR PARENTS OF INFANTS 6 MONTHS AND YOUNGER WHO USE THE
PUMPHOUSE CAMPGROUND WATER SYSTEM
DO NOT USE THE WATER FOR INFANT FORMULA

High nitrate levels were detected on ___/___/___.

A routine sample on ___/___/___ showed a nitrate concentration in the drinking water of _____ mg/L. This is above the nitrate standard or maximum contaminant level, of 1.0 mg/L. Nitrate in drinking water is a serious health concern for infants less than six months old.

What should I do?

- **DO NOT GIVE THE WATER TO INFANTS.** *Infants below the age of six months who drink water containing nitrate in excess of the maximum contaminant level could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.* Blue baby syndrome is indicated by blueness of the skin. Nitrite is a concern for infants because they cannot process nitrites in the same way adults can.
- Symptoms in infants can develop rapidly, with health deteriorating over a period of days. If symptoms occur, seek medical attention immediately.
- Water, juice, and formula for children under six months of age should not be prepared with tap water. Bottle water or other water low in nitrates should be used for infants until further notice.
- **DO NOT BOIL THE WATER.** Boiling, freezing, filtering, or letting water stand does not reduce the nitrate level. Excessive boiling can make the nitrates more concentrated, because nitrates remain behind when the water evaporates.
- Adults and children older than six months can drink the tap water (nitrate is a concern for infants because they can't process nitrates in the same way adults can). However, if you are pregnant or have specific health concerns, you may wish to consult your doctor.

What happened? What is being done?

Nitrate in drinking water can come from natural, industrial, or agricultural sources (including septic systems and run-off). Levels of nitrate in drinking water can vary throughout the year. We will let you know when the amount of nitrate is again below the maximum contaminant level. The Bureau of Land Management is actively inspecting the system to determine the source of contamination and will take appropriate corrective actions if found.

We anticipate resolving the problem within _____. We will inform you when this problem has been corrected. For more information, please contact the please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Field Manager: _____

Date distributed: ___ / ___ / ___

DRINKING WATER WARNING

FOR PARENTS OF INFANTS 6 MONTHS AND YOUNGER WHO USE THE PUMPHOUSE CAMPGROUND WATER SYSTEM DO NOT USE THE WATER FOR INFANT FORMULA

High nitrite levels were detected on ___/___/___.

A routine sample on [date] showed a nitrite concentration in the drinking water of _____ mg/L. This is above the nitrite standard or maximum contaminant level, of 1.0 mg/L. Nitrite in drinking water is a serious health concern for infants less than six months old.

What should I do?

- **DO NOT GIVE THE WATER TO INFANTS.** *Infants below the age of six months who drink water containing nitrite in excess of the maximum contaminant level could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.* Blue baby syndrome is indicated by blueness of the skin. Nitrite is a concern for infants because they cannot process nitrites in the same way adults can.
- Symptoms in infants can develop rapidly, with health deteriorating over a period of days. If symptoms occur, seek medical attention immediately.
- Water, juice, and formula for children under six months of age should not be prepared with tap water. Bottle water or other water low in nitrites should be used for infants until further notice.
- **DO NOT BOIL THE WATER.** Boiling, freezing, filtering, or letting water stand does not reduce the nitrite level. Excessive boiling can make the nitrites more concentrated, because nitrites remain behind when the water evaporates.
- Adults and children older than six months can drink the tap water (nitrite is a concern for infants because they can't process nitrites in the same way adults can). However, if you are pregnant or have specific health concerns, you may wish to consult your doctor.

What happened? What is being done?

Nitrite in drinking water can come from natural, industrial, or agricultural sources (including septic systems and run-off). Levels of nitrite in drinking water can vary throughout the year. We will let you know when the amount of nitrite is again below the maximum contaminant level. The Bureau of Land Management is actively inspecting the system to determine the source of contamination and will take appropriate corrective actions if found.

We anticipate resolving the problem within _____. We will inform you when this problem has been corrected. For more information, please contact the please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Field Manager: _____

Date distributed: ___ / ___ / ___

DRINKING WATER NOTICE

MONITORING REQUIREMENTS NOT MET FOR PUMPHOUSE CAMPGROUND WATER SUPPLY

We violated a drinking water monitoring standard. Even though this was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation. *We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards.* During the compliance period we:

- did not monitor for [*coliforms or nitrate or nitrite*]
- did not complete all monitoring for *coliforms or nitrate or nitrite*]
- did not monitor for coliforms in the correct location

And, therefore, cannot be sure of the quality of our drinking water during that time.

What this means

There is nothing you need to do at this time. The table below lists the contaminant(s) we did not properly test for, how often we are supposed to sample for them and how many samples we are supposed to take, how many samples we took, where the samples should have been taken, when samples should have been taken, and the date on which follow-up samples were (or will be) taken.

Contaminant	Required sampling frequency	Number of samples taken	Where samples should have been taken	When all samples should have been taken	When samples were or will be taken

Steps We Are Taking

The Bureau of Land Management is reviewing monitoring requirements with appropriate personnel to help ensure all required monitoring is done. For more information, please contact the please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly.

Field Manager: _____

Date distributed: ___ / ___ / ___

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

Tests Show Coliform Bacteria in the Water for Pumphouse Campground

In the month of _____ we took one (1) sample that showed the presence of total coliform bacteria. We failed to conduct the required number of repeat samples within 24 hours and therefore cannot be sure of the water quality at that time. This is a violation of the Colorado Primary Drinking Water Regulations.

What does this mean? What should I do?

- ✓ **You do not need to boil your water or take other corrective actions.** However, if you have specific health concerns, consult your doctor.
- ✓ People with severely compromised immune systems, infants, and some elderly may be at increased risk. These people should seek advice about drinking water from their health care providers. General guidelines on ways to lessen the risk of infection by microbes are available from EPA's Safe Drinking Water Hotline at 1 (800) 426-4791.
- ✓ Total coliform bacteria are generally not harmful themselves. Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

What happened? What is being done?

This is not an emergency. If it had been you would have been notified immediately.

Usually, coliforms are a sign that there could be a problem with the treatment or distribution system (pipes). Whenever we detect coliform bacteria in any sample, we do follow-up testing to see if other bacteria of greater concern, such as fecal coliform or *E. coli*, are present. **We did not find any of these bacteria in our subsequent testing.** If we had, we would have notified you immediately. However, because we failed to take the required repeat sampling we cannot be sure that these bacteria were not in our drinking water during that time.

(Describe corrective action.)

We will inform you when our sampling shows that no bacteria are present. We anticipate resolving the problem within (estimated time frame) _____. For more information, please contact BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by (system name) _____
Date distributed: _____

DRINKING WATER PROBLEM CORRECTED

Customers of Pumphouse Campground water system were notified on ___/___/___ of a problem with our drinking water and were advised to _____

We are pleased to report that the problem has been corrected and that these precautionary measures are no longer necessary. We apologize for any inconvenience and thank you for your patience.

For more information, please contact the BLM Kremmling Field Office (970) 724-3000 or 2103 E. Park Ave, Kremmling, CO 80459.

Date distributed: ___ / ___ / ___

[Note: The posting of a drinking water problem corrected notice is not required by regulation; however, it is a good practice.]

APPENDIX B

Level 1 and 2 Assessment Forms

Level 1 Assessment Form
Level 2 Assessment Form

U.S. EPA REGION 8 Drinking Water Program (WY and Tribal-CO, UT, WY, ND, SD, MT)
 Revised Total Coliform Rule (RTCR) Level 1 Assessment Form v.2



PWS ID#:	PWS Name:
Seasonal System? Y or N (circle one)	Open Date: _____ Close Date: _____ (current season)

Assessment Trigger Date: _____ **Date assessment completed:** _____
Cause of Assessment: _____

NOTE: Form to be completed based on data and documents available to the PWS and returned as soon as practical but no later than **30 days** after the collection date of the sample that triggered the assessment.

Section A: Review and evaluate all of the elements below, noting their current or prior condition that could have contributed to the TC+ sample result. Check "NA" if the section is not applicable to the PWS.

1. SAMPLING SITES	<input type="checkbox"/> No issues <input type="checkbox"/> Issue(s) identified
Y / N	Y / N
<input type="checkbox"/> / <input type="checkbox"/> Routine total coliform site?	<input type="checkbox"/> / <input type="checkbox"/> Was the tap area unsanitary?
<input type="checkbox"/> / <input type="checkbox"/> Does the tap have a point of use treatment device?	<input type="checkbox"/> / <input type="checkbox"/> Does the tap have a swivel-type faucet?
<input type="checkbox"/> / <input type="checkbox"/> Any plumbing additions or repairs?	<input type="checkbox"/> / <input type="checkbox"/> Is sample tap on a dead-end main?
Describe these or any other sampling site related issues that may have resulted in the TC+ result:	

2. SAMPLING PROTOCOL	<input type="checkbox"/> No issues <input type="checkbox"/> Issue(s) identified
Y / N	Y / N
<input type="checkbox"/> / <input type="checkbox"/> Sampler properly trained for sampling?	<input type="checkbox"/> / <input type="checkbox"/> Other sampler error (note specifics in comments)?
<input type="checkbox"/> / <input type="checkbox"/> Aerator and/or gasket removed?	<input type="checkbox"/> / <input type="checkbox"/> Was tap flushed and disinfected?
<input type="checkbox"/> / <input type="checkbox"/> Was a laboratory-provided TC sample bottle used?	<input type="checkbox"/> / <input type="checkbox"/> Sample too warm prior to icing and shipping?
Describe these or any other sampling protocol related issues that may have resulted in the TC+ result :	

3. DISTRIBUTION SYSTEM	<input type="checkbox"/> No issues <input type="checkbox"/> Issue(s) identified
Y / N / NA	Y / N / NA
<input type="checkbox"/> / <input type="checkbox"/> Main breaks noted?	<input type="checkbox"/> / <input type="checkbox"/> Loss of pressure (<20 psi)?
<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Pump station failures/repairs?	<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Valves recently exercised?
<input type="checkbox"/> / <input type="checkbox"/> Power loss?	<input type="checkbox"/> / <input type="checkbox"/> Leaks noted?
<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Low disinfection residuals (<0.2 mg/L)?	<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Mains or service lines repaired?
<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Recent flushing of fire hydrants or blow-offs?	<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Air relief valve leaking?
<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Standing water/debris in valve vault?	<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/> Unprotected cross connections (including stock tanks and yard hydrants)?
Describe these or any other related distribution system issues that may have resulted in the TC+ result :	

4. STORAGE TANK(S)	<input type="checkbox"/> No issues <input type="checkbox"/> Issue(s) identified <input type="checkbox"/> NA	
<u>Review ALL storage tanks and note any problems found at each tank. Attach additional pages if necessary.</u>		
Y / N / NA	Y / N	
<input type="checkbox"/> / <input type="checkbox"/> Presence of holes in tank?	<input type="checkbox"/> / <input type="checkbox"/> High flows through tank or overfilled tank?	
<input type="checkbox"/> / <input type="checkbox"/> Debris in tank?	<input type="checkbox"/> / <input type="checkbox"/> Evidence of animals/insects in tank?	
<input type="checkbox"/> / <input type="checkbox"/> Vandalism/tampering noted?	<input type="checkbox"/> / <input type="checkbox"/> Power loss?	
<input type="checkbox"/> / <input type="checkbox"/> Tank not cleaned within 10 years?	<input type="checkbox"/> / <input type="checkbox"/> Recent repairs on tank(s)?	
<input type="checkbox"/> / <input type="checkbox"/> Is #24 mesh screen used on vents and overflows?	<input type="checkbox"/> / <input type="checkbox"/> #24 mesh screen damaged or not properly secured?	

- / Tank levels were low when sample was taken? / Infrequent water use from tank?
 / Does hatch have a water tight seal? / Is hatch kept locked or secured?
 / / Failure or improper operation on tank telemetry/altitude valves/controls?
 Describe these or any other storage tank related issues that may have resulted in the TC+ result :

5. TREATMENT

- No issues Issue(s) identified NA

Y / N / NA

Y / N / NA

- / Changes in water quality? / Treatment bypassed?
 / Interruption in treatment/power? / Recent repairs or maintenance performed?
 / Vandalism/tampering noted? / / Disinfectant added at all times?
 / / Changes in chemical dosages? / / Filter media upset or contamination?
 / / Coagulation chemicals added at all times? / / Finished water turbidity increased?
 / Changes in treatment plant operations?

Describe these or any other treatment related issues that may have resulted in the TC+ result :

6. SOURCES –

Well(s) (physically connected to potable water system)

- No issues Issue(s) identified NA

Review ALL wells and note any problems found at each well. Attach additional pages if necessary.

Y / N / NA

Y / N / NA

- / Wellhead recently opened? / / Damaged pitless adaptor?
 / Recent work on pump? / Damaged or unscreened vent?
 / / Unprotected opening in pump/pump assembly? / Defective/damaged well cap/sanitary well seal (bolts missing)?

Describe these or any other well related issues that may have resulted in the TC+ result:

Spring(s)

Review ALL springs and note any problems found at each spring. Attach additional pages if necessary.

- No issues Issue(s) identified NA

Y / N

Y / N

- / Damaged or poorly maintained spring box? / Sources of contamination near spring?

Describe these or any other spring related issues that may have resulted in the TC+ result :

Purchased Water

- No issues Issue(s) identified NA

Y / N

- / Water quality issues with supplier?
 / Low disinfectant residual from supplier (typically ≤ 0.02 mg/L)?

Describe these or any other purchased water issues that may have resulted in the TC+ result :

Applicable to all sources

- No issues Issue(s) identified NA

Y / N

Y / N

- / Change in source water quality? / Changes in source(s)?
 / Rapid snowmelt or rainfall? / Flooding/run-off inundation at source?
 / Evidence of animals near source?

Describe these or any other source water related issues that may have resulted in the TC+ result :

Section B: Issue Description Use this space to provide additional information on potential causes of contamination identified during your assessment. Include corresponding dates with your findings such as dates of sample collection, low pressure events, extreme weather, etc.

Check if PWS did not find any causes for the contamination.

Section C: Uncorrected Significant Deficiencies Identified in Past Sanitary Surveys: List any possible causes of TC+ samples that were identified as significant deficiencies in a prior sanitary survey and are not yet corrected. Provide the approved corrective action date for those uncorrected significant deficiencies and the status of those corrections.

Check if PWS does not have any outstanding significant deficiencies.

Section D: Corrective Action Taken or to be Taken: For any possible issues not already being addressed as a significant deficiency, use this space to describe corrective actions completed at the time of this assessment, a proposed timetable for any corrective actions not already completed, and any interim measures the PWS plans to implement prior to the completion of any corrective actions, including specific milestone dates. **Failure to meet milestone dates is subject to enforcement and public notice provisions.**

Certification: I, the owner or responsible party for the water facility named above, hereby certify that all statements provided above are true and accurate to the best of my knowledge.

Print Name: _____

Title: _____

Signature: _____

Date: _____

Phone #: _____

Email: _____

Please return this form to the EPA Region 8 office as soon as possible. Forms can be emailed to R8DWU@epa.gov or faxed to 1-877-876-9101.

Office Use Only: EPA Reviewer:	Level 1 Assessment Sufficient:
PWS corrected problem?	Corrective Action Plan Approved:
Approved with changes (attached)?	Consultation Date:
Revisions Required:	Comments:

US EPA REGION 8 DRINKING WATER PROGRAM (WY and Tribal-CO, UT, WY, ND, SD, MT)
Revised Total Coliform Rule (RTCR) Level 2 Assessment Form

PWS ID#: _____ PWS Name: [_____]

Primary Operator (print name): _____ Phone: _____
 Assessment trigger date: _____ Date Assessment Completed: _____
 SEASONAL: YES NO Reason for Assessment: _____

Assessment Elements	Issues?			Issue Description	Corrective Action Taken or Planned to be Taken and Date
	Y	N	N/A		
1. Review of the sample sites				Indicate Element number being described.	
1.1 Was the sample taken at the routine coliform site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.2 Was the tap area unsanitary at the time of sampling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.3 Was this sample taken from an outside faucet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.4 Was the sample taken from a swivel tap?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.5 Did the tap have a point of use treatment device on it?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.6 Does the building where the sample was taken have a point of entry device?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.7 Has this location undergone any plumbing replacements or repairs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.8 Are there any possible cross connections around the sample site (including yard hydrants and stock tanks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.9 Is this location near a storage tank or dead end?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
1.10. Any other sample site issues not previously mentioned?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2. Review of sample protocol					
2.1 Is the sampler a regular, trained sampler?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.2 Was a laboratory-provided TC sample bottle used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.3 Was the aerator removed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.4 Was the water tap flushed for at least 5 minutes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.5 Was the tap disinfected or flamed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.6 Did the sample get too warm prior to being placed on ice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.7 Was there other sampler error? Describe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.8 If it is a seasonal system, were there any problems during the most recent start-up procedure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
2.9 Any other sample protocol issues not previously mentioned?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3. Review of the distribution system.					
3.1 Have any mains been recently replaced or service lines recently added?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.2 Have fire hydrants or blow offs been recently flushed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

US EPA REGION 8 DRINKING WATER PROGRAM (WY and Tribal-CO, UT, WY, ND, SD, MT)
Revised Total Coliform Rule (RTCR) Level 2 Assessment Form

Assessment Elements	Issues?			Issue Description	Corrective Action Taken or Planned to be Taken and Date
	Y	N	N/A		
3.3 Have valves been recently exercised to direct flow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.4 Any leaks or main breaks noted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.5 Are all of the backflow prevention devices operational and maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.6 Was there a total loss of pressure, low pressure (<20 psi) or changes in water pressure? If yes, when?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.7 Any areas of the distribution with low disinfectant levels (<0.2 mg/L)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.8 Any recent pump station failures or repairs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.9 Air relief valve leaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.10 Standing water or debris in valve vault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.11 Any recent power loss?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.12 Any unprotected cross connections (including yard hydrants and stock tanks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.13 Any other distribution issue not previously mentioned?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4. Review of storage tank(s) (Note the specific facility if any issues are found)					
4.1 Is there a presence of animals or insects in the tank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.2 Are there breaches or holes of any sort into tank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.3 Is there any presence of animal droppings around openings, vents or overflows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.4 Is there sediment buildup and floating debris in tank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.5 Have the tank(s) been cleaned within the last 5 years? If not, list when it was last cleaned.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.6 Is there a #24 mesh screen installed on vents and overflows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.7 Is the #24 mesh screen damaged or not properly installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.8 Is the overflow pipe directly connected to a tank drain, sanitary sewer or storm drain?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.9 Does the hatch have a solid, water proof, shoebox type lid that is properly sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.10 Was the hatch locked or secured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.11 Has the tank been accidentally drained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.12 Have there been high flows through the tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.13 Was there high water age in the tank (infrequent water use)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.14 Was the sample taken when the tank was at the low level mark?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

US EPA REGION 8 DRINKING WATER PROGRAM (WY and Tribal-CO, UT, WY, ND, SD, MT)
Revised Total Coliform Rule (RTCR) Level 2 Assessment Form

Assessment Elements	Issues?			Issue Description	Corrective Action Taken or Planned to be Taken and Date
	Y	N	N/A		
4.15 Failure or improper operation on tank telemetry/altitude valves/controls?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.16 Any recent repairs on the tank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.17 Was there any power loss?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.18 Was the tank vandalized or subject to tampering?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
4.19 Any other storage tank issues not previously mentioned above?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5. Review of treatment process (if applicable)					
5.1 Has the treatment been bypassed altogether at any time or have individual processes been interrupted by power outages or other causes? If yes, provide details on when, which processes and for how long?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.2 Have there been any new treatment processes added or new equipment installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.3 Have there been any recent repairs of major unit processes or treatment equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.4 Have there been any changes in the operational procedures used for treating the water such as, changes in chemical dosages or changes in coagulant chemicals used? If yes, provide details of the change and when it occurred.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.5 Has a coagulant been added at all times the plant has been filtering water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.6 Have there been changes in raw water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.7 Was the finished water turbidity increasing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.8 Have filter clogging algae caused more frequent backwashing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.9 Has a disinfectant been added at all times or have there been any failures in adding disinfectant for any length of time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.10 Has there been any vandalism or tampering at the plant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
5.11 Any other treatment plant issues not previously mentioned above?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sources – Well(s)					
6. (Note the specific facility if any issues are found)					
6.1 Is the sanitary seal intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.2 Is the well cap defective or damaged or not water tight?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.3 Does the vent have a #24 mesh screen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.4 Is the vent screen damaged or not installed properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

US EPA REGION 8 DRINKING WATER PROGRAM (WY and Tribal-CO, UT, WY, ND, SD, MT)

Revised Total Coliform Rule (RTCR) Level 2 Assessment Form

Assessment Elements	Issues?			Issue Description	Corrective Action Taken or Planned to be Taken and Date		
	Y	N	N/A				
6.5 Does the vent and pump to waste terminate in an air gap of at least three pipe diameters above the ground?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Primary Backup Emergency			
6.6 How is the well used? (Circle if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.7 Are there any unprotected cross connections at the wellhead? Are there any unprotected openings in the pump or pump assembly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.8 Is the pitless adapter damaged?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.9 Is there a missing or damaged grout seal?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.10 Has there been any recent work performed on the pump?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.11 Is the wellhead secured to prevent unauthorized access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.12 Have there been any sewer spills, source water spills or other disturbances near the well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.13 Is the well pit in standing water or evidence of flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.14 Any other well issues not previously mentioned above?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Sources- Spring(s) (Note the specific facility if any issues are found)							
6.15 Is there evidence of flooding or infiltration of surface water runoff around the spring?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.16 Is the spring box improperly developed or poorly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.17 Are there dead animals near the spring?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.18 Any other issues about springs not previously mentioned above?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Sources-purchased water							
6.19 Water quality issues with supplier?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.20 Low disinfectant residual from supplier (typically ≤ 0.02 mg/L)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.21 Any other purchased water issues not previously mentioned above?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Applicable to all sources							
6.22 Has an unapproved source been used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.23 Has there been a change in sources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.24 Has there been recent rapid snowmelt, heavy rainfall or flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.25 Any evidence of animals near the source?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
6.26 Have there been algae blooms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

US EPA REGION 8 DRINKING WATER PROGRAM (WY and Tribal-CO, UT, WY, ND, SD, MT)
Revised Total Coliform Rule (RTCR) Level 2 Assessment Form

Assessment Elements	Issues?			Issue Description	Corrective Action Taken or Planned to be Taken and Date
	Y	N	N/A		
6.27 Is the source water sample for ground water systems E. coli positive? This may indicate that the positive sample is originating from the source and may be a continuous source of contamination.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.28 Any other source issues not previously mentioned above?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
7. Significant Deficiencies					
7.1 Are there any unaddressed significant deficiencies? This may indicate that the problem is known and is in the process of being remedied. Include approved corrective action date and status of each corrective action.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Additional Comments:

Name of Assessor completing the form (PRINTED): _____ Date: _____
 Signature: _____
 Water system responsible party (PRINTED): _____ Date: _____
 Signature: _____

Reserved for EPA R8 Review

	Yes	No	Comments
1. Has assessment been successfully completed?	<input type="checkbox"/>	<input type="checkbox"/>	
2. Likely reason for EC+ occurrence has been found.	<input type="checkbox"/>	<input type="checkbox"/>	
3. System has corrected the problem.	<input type="checkbox"/>	<input type="checkbox"/>	
4. Corrective Action Approved?	<input type="checkbox"/>	<input type="checkbox"/>	