

STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

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

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

<http://www.cdphe.state.co.us>



Colorado Department
of Public Health
and Environment

November 28, 2008

PWSID# CO-0151100
BEULAH WATER WORKS DISTRICT
ATTENTION: JEFF GORMAN
PO BOX 155
BEULAH, CO 81023

Certified Mail Number: 7007 0220 0001 0159 6611

RE: Service of Drinking Water Enforcement Order, Number: DC-081128-2

Dear Mr. Gorman:

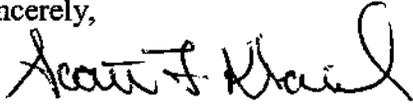
Beulah Water Works District is hereby issued the enclosed Enforcement Order (the "Order"). This Order is issued by the Colorado Department of Public Health and Environment, Water Quality Control Division (the "Department") pursuant to the authority given to the Department by §25-1.5-203 of the Colorado Revised Statutes ("C.R.S."). The Department bases this Order upon findings that Beulah Water Works District violated the *Colorado Primary Drinking Water Regulations* (the "Regulations") as described in the enclosed Order.

As a recipient of an enforcement order Beulah Water Works District may request a formal hearing to contest the Order in accordance with the Regulations, 5 CCR 1003-1, §1.6.7(g). Requests for such a hearing must be filed in writing with the Department within thirty (30) calendar days after service of the Order. Hearings on enforcement orders shall be held in accordance with applicable provisions of the State Administrative Procedure Act, §§24-4-101 through 24-4-108, C.R.S.

This action could result in the imposition of administrative or civil penalties. The Department or a State District Court is authorized pursuant to §25-1-114.1, C.R.S. to impose a penalty of up to \$1,000 per violation per day. Please be advised that the Department is continuing its investigation into this matter and the Department may identify supplementary violations that warrant amendments to this Order or the issuance of additional enforcement actions.

Should Beulah Water Works District desire to informally discuss this matter with the Department or if Beulah Water Works District has any questions regarding the Order, please don't hesitate to contact me at (303) 692-3564 or by electronic mail at scott.klarich@state.co.us.

Sincerely,



Scott F. Klarich, Unit Manager
Enforcement and Clean Water Compliance Assurance Unit
Compliance Assurance and Data Management Section
WATER QUALITY CONTROL DIVISION

Enclosure

- cc: Pueblo City- County Health Department
Compliance Monitor / Drinking Water File
- ec: Dave Knope, Engineering Section, CDPHE
Dick Parachini, Watershed Program, CDPHE
Betsy Beaver, Facility Operators Program, CDPHE
Shawn McCaffrey, EPA Region VIII
Jeff Lawrence, Director Consumer Protection Division, CDPHE
Carolyn Schachterle, OPA



**COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION**

ENFORCEMENT ORDER

NUMBER: DC-081128-2

**IN THE MATTER OF: BEULAH WATER WORKS DISTRICT
PUBLIC WATER SYSTEM IDENTIFICATION NUMBER: CO-0151100
PUEBLO COUNTY, COLORADO**

Pursuant to the authority vested in the Colorado Department of Public Health and Environment (the "Department") by §25-1-109 and §25-1.5-203 of the Colorado Revised Statutes ("C.R.S."), which authority has been delegated to the Department's Water Quality Control Division (the "Division"), the Division hereby makes the following findings and issues the following Enforcement Order:

GENERAL FINDINGS

1. The Beulah Water Works District owns and/or operates a drinking water system located in the vicinity of 8970 Columbine Road, within the community of Beulah in Pueblo County, Colorado (the "System").
2. The Beulah Water Works District is a person as defined by 5 CCR 1003-1, §1.5.2(98).
3. The Beulah Water Works District is a supplier of water within the meaning of §25-1.5-201(2), C.R.S. and its implementing regulation, 5 CCR 1003-1, §1.5.2(128).
4. The System is a public water system as defined by §25-1.5-201(1), C.R.S. and its implementing regulation, 5 CCR 1003-1, §1.5.2(107).
5. The Public Water System Identification Number ("PWSID"), assigned to the System by the Division is PWSID #: CO -0151100.
6. Pursuant to 5 CCR 1003-1, §1.2, the System is subject to the *Colorado Primary Drinking Water Regulations* (the "Regulations"), which were adopted pursuant to §25-1.5-203, C.R.S.

7. The Beulah Water Works District provides piped water for human consumption from the System to at least fifteen (15) service connections used by year-round residents of the area served by the System and/or regularly serves at least twenty-five (25) year-round residents. The System is therefore classified as a “community water system” as defined by 5 CCR 1003-1, §1.5.2(15).
8. The System’s source of water is surface water as defined by 5 CCR 1003-1, §1.5.2(129)

First Violation
(Inadequate Disinfection Byproduct Precursor Removal)

9. Division records establish that the System utilizes conventional filtration treatment, as defined by 5 CCR 1003-1, §1.5.2(27), to achieve the filtration treatment requirements of 5 CCR 1003-1, §7.1.3.
10. Division records establish that the System utilizes hypochlorination to achieve the disinfection treatment requirements of 5 CCR 1003-1, §7.1.2.
11. Pursuant to 5 CCR 1003-1, §7.6.1(a), the regulations in 5 CCR 1003-1, §7.6 establish criteria under which community water systems and non-transient, non-community water systems which add a chemical disinfectant to the water in any part of the drinking water treatment process must modify their practices to meet the treatment technique requirements for disinfection byproduct precursors in section 5 CCR 1003-1, §7.6.4(d).
12. Pursuant to 5 CCR 1003-1, §7.6.6(a)(1), surface water systems using conventional filtration treatment must operate with enhanced coagulation or enhanced softening to achieve the total organic carbon (“TOC”) percent removal levels specified in 5 CCR 1003-1, §7.6.6(b) unless the system meets at least one of the alternative compliance criteria listed in 5 CCR 1003-1, §7.6.6(a)(2) or (a)(3).
13. Pursuant to 5 CCR 1003-1, §7.6.6(b)(1), the System must achieve the percent reduction of total organic carbon specified in 5 CCR 1003-1, §7.6.6(b)(2) between the source water and the combined filter effluent, unless the Department approves a system's request for alternate minimum total organic carbon removal (Step 2) requirements under 5 CCR 1003-1, §7.6.6(b)(3).
14. Division records establish that the water quality data supplied to the Department from the System does not demonstrate that any of the alternative compliance criteria listed in 5 CCR 1003-1, §7.6.6(a)(2) or (a)(3) are currently applicable.
15. Therefore, pursuant to 5 CCR 1003-1, §7.6.6(b)(2), the System is required to achieve the Step 1 total organic carbon reductions, indicated in the following table (5 CCR 1003-1, Table 2-11 or Table 7.23), based upon specified source water parameters measured in accordance with 5 CCR 1003-1, §10.7.4. Systems practicing softening are required to meet the Step 1 total organic carbon reductions in the far-right column (source water alkalinity 120 mg/L) for the specified source water total organic carbon:

Source-water TOC, mg/L	Source-water alkalinity, mg/L as CaCO ₃		
	0-60	>60-120	>120
	TOC Required Removal (in percentages)		
>2.0-4.0	35.0	25.0	15.0
>4.0-8.0	45.0	35.0	25.0
>8.0	50.0	45.0	30.0

16. Pursuant to 5 CCR 1003-1, §7.6.6(c), the System must calculate compliance quarterly, beginning after the system has collected 12 months of data, by determining a running annual average using the following method:
- For each month, determine actual monthly total organic carbon percent removal, equal to: $(1 - (\text{treated water total organic carbon} / \text{source water total organic carbon}) \times 100$;
 - For each month, determine the required monthly total organic carbon percent removal from 5 CCR 1003-1, Table 7-23 or from 5 CCR 1003-1, §7.6.6(b)(3);
 - Divide the percent removal value from “a” above by required monthly total organic carbon percent removal from “b” above;
 - Add together the results from “c” for the last 12 months and divide by 12;
 - If the value calculated in “d” above is less than 1.00, the system is not in compliance with the total organic carbon percent removal requirement.
17. Pursuant to 5 CCR 1003-1, §7.6(d), systems monitoring monthly or quarterly for total organic carbon under the requirements of 5 CCR 1003-1, §7.6.3(d) and required to meet the enhanced coagulation or enhanced softening requirements in 5 CCR 1003-1, §7.6.6(b)(2) or (3) must report the following information to the Department within 10 days after the end of each quarter in which samples were collected, notwithstanding the provisions of 5 CCR 1003-1, §1.6.4:
- The number of paired (source water and treated water) samples taken during the last quarter.
 - The location, date, and results of each paired sample and associated alkalinity taken during the last quarter.
 - For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of total organic carbon for each paired sample and the required total organic carbon percent removal.
 - Calculations for determining compliance with the total organic carbon percent removal requirements, as provided in 5 CCR 1003-1, §7.6.6(c)(1).
 - Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in 5 CCR 1003-1, §7.6.6(b) for the last four quarters.

(Note: The Department may perform calculations and determine whether the treatment technique was met, in lieu of having the system report that information.)

18. A review of the total organic carbon monitoring data, provided to the Department by the System, identifies the following instances in which the total organic carbon removal ratio requirements were not met:

Compliance Period	Running Annual Average (RAA) TOC Removal Ratio	Required TOC Removal Ratio (as RAA)
4 th Quarter 2007	0.80	≥ 1.00
1 st Quarter 2008	0.84	≥ 1.00
2 nd Quarter 2008	0.65	≥ 1.00
3 rd Quarter 2008	0.78	≥ 1.00

19. Pursuant to 5 CCR 1003-1, §7.6.6(b)(3), surface water conventional treatment systems that cannot achieve the Step 1 total organic carbon removals required by 5 CCR 1003-1, §7.6.6(b)(2) due to water quality parameters or operational constraints must apply to the Department, within three months of failure to achieve the total organic carbon removals required by 5 CCR 1003-1, §7.6.6(b)(2), for approval of alternative minimum total organic carbon (Step 2) removal requirements submitted by the system. If the Department approves the alternative minimum total organic carbon removal (Step 2) requirements, the Department may make those requirements retroactive for the purposes of determining compliance. Until the Department approves the alternate minimum total organic carbon removal (Step 2) requirements, the system must meet the Step 1 total organic carbon removals contained in 5 CCR 1003-1, §7.6.6(b)(2).
20. Department records establish that the System has not applied to the Department for approval of alternative minimum total organic carbon removal (Step 2) requirements.
21. The Department sent out Compliance Advisories on May 1, 2008, May 30, 2008, August 12, 2008, and November 7, 2008 regarding the alleged violations of the treatment technique for control of disinfection byproducts precursors (inadequate disinfection byproduct precursor removal).
22. On September 30, 2008, the Division requested the System to submit a progress report describing its efforts to comply with the disinfection byproduct precursor removal requirements.
23. Division records to-date establish that the System has not responded to the Compliance Advisories or provided the Division with the requested progress report.
24. The Beulah Water Works District's failure to comply with the Step 1 total organic carbon removal ratio requirements constitutes violations of 5 CCR 1003-1, §7.6.6(b)(2).

COMPLIANCE ORDER

Based upon the foregoing factual and legal determinations and pursuant to 5 CCR 1003-1, §1.6.7, the Beulah Water Works District is hereby ordered to:

25. Immediately comply with the *Colorado Primary Drinking Water Regulations*, 5 CCR 1003-1, Articles 1 through 12.

Further, the Division hereby orders the Beulah Water Works District to comply with the following specific terms and conditions of this Order.

26. In order to ensure long-term compliance with the disinfection byproduct precursor removal requirements outlined in 5 CCR 1003-1, §7.6.6, the Beulah Water Works District shall evaluate and modify or upgrade, as needed, the System's water sources, collection systems, operational practices and/or treatment processes including enhanced coagulation and/or enhanced softening process in accordance with the following schedule:
 - a. Within thirty (30) calendar days of the receipt of this order, the Beulah Water Works District must begin monthly finished water specific ultraviolet absorbance (SUVA) monitoring. Finished water SUVA must be measured in accordance with 5 CCR 1003-1, §10.7.4(d) at a point no later than the combined filter effluent turbidity monitoring, but prior to the addition of disinfectant/oxidants. If the System does not have a suitable sampling location for finished water SUVA monitoring, the System must begin monthly raw water specific ultraviolet absorbance (SUVA) monitoring. Raw water SUVA must be measured in accordance with 5 CCR 1003-1, §10.7.4(d) at a point prior to any treatment. These SUVA data will be used to evaluate if the System qualifies for the alternative compliance criteria outlined in 5 CCR 1003-1, §7.6.6(a)(2)(v) or (vi). SUVA monitoring must be conducted monthly for one (1) calendar year.
 - b. Within thirty (30) calendar days of the receipt of this order, the Beulah Water Works District must begin quarterly Step 2 jar testing described in 5 CCR 1003-1, §7.6.6(b)(3) and (4) in accordance with Section 3.2.2.1 "Apparatus and Reagents" and Section 3.2.2.2 "Protocol for Bench-Scale (Jar) Testing" of the US EPA *Enhanced Coagulation and Enhanced Precipitative Softening Guidance Manual*. The Step 2 jar testing must be conducted quarterly for one (1) calendar year. Results of Step 2 jar testing must be reported quarterly to the Department using "Public Drinking Water System Disinfection Byproduct Precursors Step 2 Jar Testing Report".
 - c. Within ninety (90) days of receipt of this order, the Beulah Water Works District shall retain a qualified Professional Engineer, experienced in enhanced coagulation treatment for drinking water supply to evaluate the effectiveness of different combinations of coagulant, polymers, and acid addition in achieving improved total organic carbon removal.

- d. Within thirty (30) days of the completion of Step 2 jar testing and SUVA monitoring, the Beulah Water Works District must submit for Department approval one of the following reports. The report must be completed by a qualified Professional Engineer, experienced in enhanced coagulation treatment for drinking water supply.
- i. Alternatives Analysis and Recommendation. Based on the results of the SUVA monitoring, Step 2 jar testing, and the professional engineer's evaluation, the report must recommend system or operational improvements or modifications to disinfection byproduct precursor treatment techniques to achieve compliance with 5 CCR 1003-1, §7.6.6. The report must identify how these improvements or modifications will not undermine achieving compliance with 5 CCR 1003-1, §2.4, Table 2-5 or 5 CCR 1003-1, §2.7, Table 2-8. The report must outline the expected benefit of any identified improvements or modifications and an implementation schedule. The identified improvements or modifications and implementation schedule, once approved by the Department in writing, shall become a condition of this order and the Beulah Water Works District shall implement the identified improvements as submitted unless notified by the Division in writing that alternate activities or improvements and/or time schedule(s) are appropriate. If the Division imposes alternate activities or improvements and/or time schedule(s), they shall also become a condition of this order.
 - ii. Step 2 Application for Alternative Minimum Total Organic Carbon ("TOC") Removal Requirements. This report must present the results and analysis of the Step 2 jar testing procedure as described in the examples found in Section 3.2.3 "Application of the Step 2 Protocol" of the US EPA *Enhanced Coagulation and Enhanced Precipitative Softening Guidance Manual*. To justify an alternative minimum total organic carbon removal requirement, the report must describe the qualified professional engineer's evaluation of the effectiveness of different combinations of coagulant, polymers, and acid addition in achieving improved total organic carbon removal. The report must also demonstrate that by using an alternative minimum total organic carbon removal requirement, the System will not compromise compliance with the total trihalomethanes and haloacetic acids maximum contaminant levels outlined in 5 CCR 1003-1, §2.4, Table 2-5. If necessary, the report must recommend system or operational improvements or modifications, with an implementation schedule, to control total trihalomethanes levels to achieve compliance with 5 CCR 1003-1, §2.4, Table 2-5 while operating with an alternative minimum total organic carbon removal requirement. The identified improvements or modifications and implementation schedule, once approved by the Department in writing, shall become a condition of this order and the Beulah Water Works District shall implement the identified improvements as submitted unless notified by the Division in writing that alternate activities or improvements and/or time schedule(s) are appropriate. If the Division imposes alternate activities or improvements and/or time schedule(s), they shall also become a condition of this order. Once approved by the Department, the alternative minimum total organic carbon removal requirement shall be retroactive for 12 months.

- e. Within sixty (60) calendar days of the Department approval of one of the above reports, the Beulah Water Works District shall submit Final Design Plans and Specifications for any System improvements for Department review and approval in accordance with the *State of Colorado Design Criteria for Potable Water Systems*.

(Note: For specific questions regarding the disinfection byproduct precursor removal requirements or the Division's expectations of the Beulah Water Works District outlined above, please don't hesitate to contact the Division's Disinfection Byproducts Rule Manager, Ms. Emily Clark, at (303) 692-3502 or by electronic mail at emily.clark@state.co.us.)

27. The Beulah Water Works District shall submit "System Evaluation/Improvement Project - Progress Reports" to the Department every sixty (60) calendar days. The first report shall be submitted to the Department within thirty (30) calendar days after receipt of this Order. At a minimum, each report shall clearly indicate the status of the system evaluation/improvement project at the time the report is filed and outline activities to be undertaken within the next sixty (60) calendar days. These reports shall be required until the System has demonstrated reliable and consistent compliance with the disinfection byproduct precursor removal requirements outlined in 5 CCR 1003-1, §7.6.6.
28. Within thirty (30) calendar days after receipt of this Order, if it has not already done so, the Beulah Water Works District shall issue a public notice in accordance with 5 CCR 1003-1, §9.2 for each violation identified in this Order. Within ten (10) calendar days of completion of each required public notification, the Beulah Water Works District shall submit to the Department, along with the mandatory certification, a representative copy of each type of notice distributed, published, posted, and/or made available to the persons served by the system and/or to the media.

*Additional guidance for proper public notification can be viewed at the following Internet location:
http://www.cdphe.state.co.us/wq/drinkingwater/pdf/PublicNotice/PN_Guidance_Mar2003.pdf*

NOTICES AND SUBMITTALS

For all documents, plans, records, reports and replies required to be submitted by this order, the Beulah Water Works District shall submit an original and one copy (electronic is preferred) to the Department at the following address:

Colorado Department of Public Health and Environment
Water Quality Control Division / WQCD-WQP-B2
Compliance Assurance and Data Management Section
Attention: Scott Klarich
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530
Email: scott.klarich@state.co.us
Fax: (303) 782-0390

(For any facsimile transmittals, please include a cover sheet addressed to Mr. Klarich.)

Pursuant to 5 CCR 1003-1, §1.6.4(e), all reports, notices, summaries, and certifications required to be submitted to the Department by the public water system must bear the original signature of the owner or the owner's authorized representative.

NOTICE OF COMPLETION

The Beulah Water Works District shall submit a Notice of Completion to the Division upon satisfactory completion of all requirements of this Enforcement Order. The Division shall either accept or reject the Notice of Completion in writing. If the Division rejects the Notice of Completion, it shall include in its notice a statement identifying the requirements that the Division considers incomplete or not satisfactorily performed and a schedule for completion. If the Beulah Water Works District wishes to dispute the Division's rejection of its Notice of Completion, it shall, within fifteen (15) calendar days of receipt of the Division's rejection, submit a written statement as to its belief of full compliance, addressing in detail all concerns the Division raised in the rejection letter to the System's Notice of Completion.

PRIOR APPROVAL REQUIRED

Pursuant to 5 CCR 1003-1, §1.11.2, no person shall commence construction of any new waterworks, or make improvements to or modify the treatment process of an existing waterworks, or initiate use of a new source, until plans and specifications for such construction, improvements, modifications or use have been submitted to, and approved by the Department. A Professional Engineer registered in the State of Colorado shall design all treatment systems serving a community water supply. The Department shall grant such approval when it finds that the proposed facilities are capable of complying, on a continuous basis, with all applicable laws, standards, rules and regulations.

POTENTIAL ADMINISTRATIVE/CIVIL AND CRIMINAL PENALTIES

You are also advised, pursuant to §25-1-114.1, C.R.S., that violators of the Regulations or final Enforcement Orders issued by the Department are subject to civil or administrative penalties of up to one thousand dollars (\$1,000) per violation per day, to be imposed by the Department or a State District Court. Further, pursuant to §25-1-114(4), C.R.S., any person, association, or corporation, or the officers thereof, who violates, disobeys, or disregards any provision of the Regulations or an Enforcement Order is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than one thousand dollars (\$1,000), or by imprisonment in the county jail for not more than one (1) year, or by both such fine and imprisonment and, in addition to such fine and imprisonment, shall be liable for any expense incurred by health authorities in removing any nuisance, source of filth, or cause of sickness. By virtue of issuing this Enforcement Order, the Department has not waived its right to bring an action for administrative, civil or criminal penalties and may bring such action in the future.

REQUEST FOR HEARING OR APPEAL

You are further advised, pursuant to 5 CCR 1003-1, §1.6.7(g), that a recipient of an Enforcement Order may request a hearing contesting such order. Requests for such a hearing shall be filed in writing with the Department within thirty (30) calendar days after service of the order. Such requests shall state the grounds upon which the order is contested and state the amount of time the recipient estimates will be required for the hearing. Hearings on Enforcement Orders shall be held in accordance with applicable provisions of the State Administrative Procedure Act, Article 4 of Title 24, C.R.S.

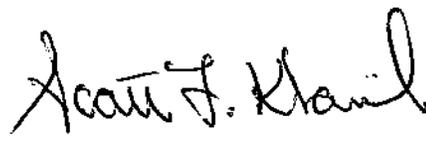
ADDITIONAL ACTION

You are further advised that under §25-1-114.1(1), C.R.S., the Department may institute a civil action against any person who violates a final Enforcement Order of the Department issued for violation of any minimum general sanitary standard or regulation adopted pursuant to §25-1.5-203, C.R.S.

Additionally, the Department may request the Attorney General to seek a temporary restraining order or permanent injunction to prevent or abate any violation of a minimum general sanitary standard or regulation adopted pursuant to §25-1.5-203, C.R.S. Further information concerning the aforementioned action is contained in §25-1-114.1(3), C.R.S.

Issued at Denver, Colorado, this 28th day of November, 2008.

FOR THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT



FOR

Lori M. Gerzina, Section Manager
Compliance Assurance and Data Management Section
Water Quality Control Division