

**Vermont Department of Environmental Conservation
Drinking Water and Groundwater Protection Division**

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www.drinkingwater.vt.gov

Agency of Natural Resources

April 28, 2015

Deane F Hedges
96 Terrace St
Montpelier, VT 05602

Re: Permit to Operate for the Crystal Springs Water System, WSID 5264

Dear Dean Hedges:

Enclosed you will find the new Permit to Operate (PTO) for the Crystal Springs Water System (Water System). Please notice that the PTO does not have an expiration date, although the PTO will be amended by this division as deemed necessary over time. There are general requirements specified in the PTO that the Water System is to adhere to.

Please pay particular attention to Section II of the PTO as this section contains a compliance schedule with which the Water System must comply.

Also, please pay particular attention to the Special Conditions listed in Section IV of the PTO. This section prohibits the expansion of the Water System absent an amendment to this PTO. Please also note that an amendment of this PTO to allow the expansion will also require a Public Water Supply Source Permit and may require a Public Water Supply Permit to Construct.

Section IV also requires that the Water System operate their chlorine disinfection system on a continuous basis to maintain measureable free chlorine residuals throughout and to the ends of the distribution system at all times and until as otherwise directed by this Division.

In addition, Section IV contains a schedule to address the physical disconnection of customers who have been removed from the Water System.

If you have any questions regarding the information or requirements presented in this document, feel free to contact me directly at (802) 585-4903.

Sincerely,



Megan Young
System Operations Specialist
Drinking Water and Groundwater Protection Division

C: WSID File #5264
Ellen Parr Doering, Deputy Division Director, DWGWP
Tim Raymond, Operations and Engineering Section Chief, DWGWP
Ben Montross, Compliance and Support Services Section Chief, DWGWP
Rodney Pingree, Water Resources Section Chief, DWGWP
Scott Steward, Hydrogeologist, DWGWP
Julie Hackbarth, Compliance and Certification Manager, DWGWP
Jeff Girard, Compliance Specialist, DWGWP
Carl Fuller, Regional Office Engineer, DWGWP
Pete Kopsco, Regional Office Permit Specialist, EAO

Enc: Permit to Operate

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*Agency of Natural Resources***Agency of Natural Resources
Vermont Department of Environmental Conservation
Drinking Water and Groundwater Protection Division****Public Community Water System Permit to Operate**

PERMIT NUMBER: 5264-15.0

WATER SYSTEM IDENTIFICATION NUMBER: VT0005264

PIN #: BR95-0073

PERMITTEE (Owner): Theodore G Hedges & Sons Inc.

WATER SYSTEM: Crystal Springs Water System

TOWN: East Montpelier

DESIGNATED CONTACT PERSON: Deane F. Hedges

ADDRESS: 96 Terrance St
Montpelier, VT 05602**I. Authority**

This Permit to Operate (Permit) a Public Community Water System, known as the **Crystal Springs Water System** (Water System) is issued to **Theodore G. Hedges & Sons Inc.** (Permittee) in accordance with 10 V.S.A. Chapter 56 and the Vermont Water Supply Rule (Rule). Because Vermont has primacy to implement the relevant provisions of the Federal Safe Drinking Water Act, and the Rule adopted under that Act, regarding public water systems and because the Rule incorporates the relevant Federal requirements, this Permit is also issued under and implements the provisions of Federal Law.

II. Findings, Violations, and Compliance Schedule

A. The Secretary finds that the Water System is being operated in a manner that constitutes a violation of the Rule. These violations are:

1. *Spring 2 Cover Construction Inadequate:* Under Chapter 21, Appendix A, Section 3.3.2.1.2 of the Rule, spring sources shall have a sanitary and watertight cover. The current construction of the cover of Spring 2 is comprised of a wooden frame and cover with a shingled exterior. The wooden material does not provide for a sanitary cover as it allows access and infestation by insects, nor does it provide a watertight barrier.
2. *Spring 4 Cover Construction Inadequate:* Under Chapter 21, Appendix A, Section 3.3.2.1.2 of the Rule, spring sources shall have a sanitary and watertight cover. The current construction of the cover of Spring 4 is comprised of a wooden frame and cover

with a shingled exterior. The wooden material does not provide for a sanitary cover as it allows access and infestation by insects, nor does it provide a watertight barrier.

3. *Cross-Connection Hazard – Unapproved In-home Booster Pumps:* Under Chapter 21, Appendix A Section 6.4.4 of the Rule, individual home booster pumps shall not be allowed for any individual service connection to the Public water system, unless installation is approved in writing by the Secretary, includes a properly sized and located air gap, and conforms to the Secretary's guidelines. The water system serves two service connections that are each equipped with unapproved individual booster pumps.

4. *Water System Modification Without a Permit:* Under Chapter 21, Section 4.0.1 of the Rule, no person shall begin construction of, alter, renovate, or convert for use as a public water system requiring a permit, any system or portion thereof, except as provided in Section 4.0.2 without first receiving a Source Permit or Construction Permit from the Secretary. The water system's distribution system contains six fire hydrants. The water system does not have the adequate storage volume of 60,000 gallons plus Average Day Demand to provide for fire protection required under Chapter 21, Appendix A, Section 7.0.1.a of the Rule. The system also does not have adequate distribution piping diameter of 8-inches or a demonstrated hydraulic analysis showing adequate flow and pressure with piping under 8 inches in diameter required to deliver adequate flow to provide fire protection under Chapter 21, Appendix A, Section 8.1.2 of the Rule. Due to the insufficient storage volume and distribution construction, the water system was never permitted to provide fire protection. Connection of the fire hydrants to the system represents an unpermitted modification of the water system.

5. *Tank Level Control and Alarms:* Under Chapter 21, Appendix A, Section 7.3.3 of the Rule, controls shall be provided to maintain levels in distribution system storage structures. Level indicating devices should be provided at a central location. Low level alarms are required. The water system does not have a means to control the flow of water into the water storage tank from the sources, nor does it have an alarm to indicate low water level. When applying a chemical disinfectant, there is no means of preventing a chlorinated discharge from being released into the environment via the storage tank overflow during periods of low system demand.

6. *Inadequate Disinfection Equipment:* Under Chapter 21, Appendix A, Section 4.3.2.a of the Rule, Chlorine should be applied at a point which will provide adequate contact time. All basins used for disinfection must be designed to minimize short circuiting. The Water System is only able to provide disinfection to one of its three sources and relies on treated water from this source mixing with water from other sources either within the storage tank and/or the transmission and distribution piping in order to achieve adequate disinfection contact time.

7. *Inadequate Storage Tank Access Cover:* Under Chapter 21, Appendix A, Section 7.0 of the Rule, the materials and designs used for finished water storage structures shall provide stability and durability as well as protect the quality of the stored water. The water storage tank/Spring 1 access cover is made of plywood with plastic sheeting nailed to the inside, which rests on a frame made of wood. This material does not provide stability and durability nor does it adequately protect the quality of the stored water.

8. *Master Meter Inoperable:* Under Chapter 21, Appendix A, Section 2.14 of the Rule, all water systems shall have an acceptable means of metering the finished water. The water system installed a meter pit near where the transmission line meets Cherry Tree Hill Road but reports that the meter has never worked.

B. The Secretary also finds that if the following compliance schedule is met, the continued operation of the Water System does not constitute a public health hazard or a significant public health risk:

- 1. On or before July 30, 2015 the Permittee shall provide detailed sketches or documentation identifying the construction of each in-home booster pump setup, establish and submit a protocol and procedure for annual inspecting and maintaining the air gaps provided at each unit, and seek the approval of the Secretary for the in-home booster pumps serving the water system.**
- 2. On or before July 30, 2015, the Permittee shall install level controls and a low water level alarm on the water storage tank serving the water system.**
- 3. On or before July 30, 2015, the Permittee shall install a new spring box cover on Spring 2 to be made from materials approved for drinking water construction and meeting the requirements of the Rule.**
- 4. On or before July 30, 2015, the Permittee shall install a new spring box cover on Spring 4 to be made from materials approved for drinking water construction and meeting the requirements of the Rule.**
- 5. On or before July 30, 2015, the Permittee shall install a new storage tank access cover to be made from materials approved for drinking water construction and meeting the requirements of the Rule.**
- 6. On or before July 30, 2015, the Permittee shall repair the existing master meter or install a new meter capable of measuring the total volume of finished water produced for the water system.**
- 7. On or before July 30, 2015, the Permittee shall submit an improvement plan and schedule for how it intends to provide adequate disinfection application and disinfection contact time for water produced by all sources.**
- 8. On or before July 30, 2015, the Permittee shall permanently convert all fire hydrants connected to the system to flushing valves, paint the hydrants black, provide written notice to the local fire department that these hydrants are not to be connected to or pumped from in the event of a fire, and include updated information on the limitations of these hydrants in the system's Operation and Maintenance Manual.**

C. The Permittee shall submit a report to the Drinking Water and Groundwater Protection Division (Division) within fifteen (15) days after each required compliance date listed in Part B, above, indicating whether the required action(s) have been completed. If the required actions have not been completed by the specified date, the Permittee shall document the reasons for non-compliance in the report and shall make a written request that the Division modify the compliance schedule in this Permit. A compliance schedule will only be modified if there is good cause for the modification.

D. The Permittee shall give public notice to the users of the Water System of the requirements of the compliance schedule contained in this Permit on or before July 1 of each year that the items on the compliance schedule remain uncorrected. The Permittee shall also give notice to the users of the Water System whenever there is a change in the compliance schedule.

III. Water System Description

This Permit authorizes the use of the following components of the Water System, the permitted water system demand, and the other specified aspects of the design and operation of the Water System described below:

A. Sources: The Water System has been determined to be a groundwater system, subject to the Rule and the Federal Groundwater Rule, 40 CFR 141.400-141.405. The following sources are connected to and supply water to the Water System:

Source #	Source Name	Source Type	Source Yield (gpm)	Authorized MDD Rate (gpm)
WL001	Spring #1	Spring	Unknown	
WL003	Spring #2	Spring	Unknown	50
WL004	Spring #4	Spring	Unknown	
Total Authorized Yield				50

B. Land Use Within 200 feet of Permitted Source: Land use within 200 feet of the sources is undeveloped forest lands. All identified land use activities within the sources' recharge areas are subject to a routine vulnerability assessment and are managed by the Water System through a Source Protection Plan Update that is subject to review and approval of the Secretary once every three years.

C. Treatment Components, Processes, and Capacity: The Water System has the capability to apply continuous disinfection using an erosion chlorinator located at WL004. As of the effective date of this Permit the Water System is required to apply continuous disinfection.

D. Storage Components and Capacity: The Water System has a 40,000 gallon concrete storage tank.

E. Pump Stations: There are no pump stations at the Water System. The entire distribution system is served by gravity, with system pressure regulated by the elevation of water in the springs and storage tank.

F. Distribution System: The Water System is comprised of 8-inch PVC, as well as, 6-inch and 4-inch asbestos cement piping.

G. Permitted Water System Demand: The Water System serves a year-round residential population of 300 people through 115 service connections. The Maximum Daily Demand (MDD) Rate of the Water System is permitted for 50 gallons per minute. This authorized rate equates to an average daily water demand withdrawal volume equal to 36,000 gallons when the sources are being operated for 12-hours.

Source yield and design limitations (ex: treatment capacity, pump size, storage volume, etcetera) of the Water System have been compared against the MDD of the Water System to determine the adequacy of the sources to meet the expected demand.

IV. Special Conditions, Requirements, and Restrictions

A. System Expansion. The Permittee shall not authorize additional connections or increases in existing allocations to the water system without first receiving an amended Permit to Operate from the Secretary.

B. Continuous Disinfection Required. Until otherwise directed by the Secretary, the

Permittee shall operate its chlorine disinfection system on a continuous basis. The Permittee must maintain measurable free chlorine residual concentrations throughout and to the ends of the distribution system.

C. On or before July 30, 2015, the Permittee shall submit documentation, certified by a Professional Engineer, that all customers that are removed or at one time had been removed from the Water System have been physically and permanently disconnected.

IV. General Conditions, Requirements, and Restrictions

A. Water Quality Monitoring.

1. **Water Quality Monitoring Requirements.** The Permittee shall comply with all of the Drinking Water Quality Monitoring Requirements set forth in the Rule at the frequency described in the Rule. The Permittee shall monitor for contaminants not listed in the Rule if the Secretary determines that the additional monitoring is necessary to protect human health and notifies the Water System of those additional monitoring requirements. The Secretary shall, on at least an annual basis, provide the Permittee with a monitoring schedule in order to assist the Permittee with its obligation to comply with the requirements of the Rule.

2. **Notification of Water Quality Violations.** The Permittee shall notify the Division immediately (and no later than 24 hours) following any test result greater than or equal to the Maximum Contaminant Levels (MCL), Maximum Residual Disinfectant Levels (MRDL), or turbidity levels as specified under 40 CFR, Part 141 (National Primary Drinking Water Regulations).

3. **Reporting of Water Quality Analytical Testing Results.** The Permittee shall be responsible for the submission of all water quality monitoring analytical testing results in accordance with the reporting timeframes in the Rule.

B. Reporting Requirements.

1. The Permittee shall submit a signed report to the Division once a month, no later than ten (10) days following the end of the month, with the following information:

a) A summary of the Public Water System operation, including the amount of water produced daily for each source. Water production summaries shall contain metered data.

b) Daily disinfectant residual entering the distribution system for each day that disinfectant is introduced.

2. If a chemical disinfectant is applied or if water within the distribution system may contain a chemical disinfectant, the Permittee must report disinfectant residual in the water system at a location and frequency corresponding to the approved bacteriological sampling plan, and verify the free chlorine concentrations (if no free chlorine is available, the Permittee must measure total chlorine concentration as well) on the laboratory reporting form.

C. **Requirement for Certified Operator.** The Permittee shall assure that the appropriate class of Vermont certified operator is available to operate the Water System as required by the Rule. "Available" means based on Water System size, complexity, and source water quality, a

certified operator must be on site or able to be contacted as needed to initiate the appropriate action in a timely manner. If the Permittee is not a certified operator, the Permittee shall designate a certified operator to carry on the daily operations of the Water System. This designation shall be made in writing, signed by both the owner and the certified operator, and available to the Secretary upon request. The certified operator shall hold a valid certification equal to or greater than the classification of the Water System. For Water Systems which only have one certified operator, the Permittee must notify the Division with 24 hours of changing their certified operator.

D. Notification of Change in Designated Contact. The Permittee shall notify the Secretary within 30 days of a change in the Designated Contact Person identified in this Permit. This notification shall include the new name, address, and telephone number of the individual who is authorized by the Permittee to act as the primary contact person for all matters related to the operation of the Water System.

E. Consumer Confidence Reports. The Permittee shall prepare and deliver to the customers of the Water System and the Secretary an annual consumer confidence report (CCR) on or before July 1 of each year. The Permittee shall comply with the requirements of 40 CFR Subpart O, including Appendix A, and Subchapter 10 of the Rule as it relates to the preparation, content, and distribution of the CCR.

F. Operation and Maintenance Manual. The Permittee shall operate the Water System in a manner consistent with the Water System's Operation & Maintenance (O&M) Manual, approved by the Secretary on January 29, 2001. The O&M Manual shall be amended as needed when significant changes are made to the infrastructure and operations of the Water System. All amendments to the O&M Manual shall comply with the Rule and be approved by the Secretary. The O&M Manual shall be kept in a location so that it is readily available to the Permittee and the operator(s) of the Water System. If the O&M Manual cannot be located during an inspection or sanitary survey by the Secretary, the Permittee shall prepare a new O&M Manual and submit an electronic copy to the Division for approval.

G. Water System Modification Prohibited Without Required Permits. The Permittee shall obtain all required Source and/or Construction Permits before proceeding with modifications to the Water System, including, but not limited to, Water System expansions that require a Public Water Supply Permit, source deepening, reconstruction, and new treatment systems.

H. Use of Unpermitted Sources of Water. The Water System shall not use or connect to an unpermitted water source, including designated emergency sources, or hauled or bulk water, unless an emergency exists, (e.g. malfunctioning equipment, punctured storage tanks, unacceptable levels of contaminants with acute effects, acts of god that affect the functionality of the Water System, etc.) The unpermitted source shall be used for no more than 90 cumulative days unless the Permittee has submitted a written request to the Secretary for an extension and the Secretary has determined that there is good cause for granting an extension. When an unpermitted source is used in an emergency situation, the Permittee shall:

1. Notify the Division as soon as possible, but no later than within 12 hours of the connection and/or use; and
2. Issue either a Boil Water or a Do Not Drink notification to all users of the Water System within 12 hours of the connection and/or use.

I. Maintenance and Periodic Update of Approved Plans. The Permittee shall comply with the plans approved by the Secretary for the Water System. In the event of significant structural

or operational changes to the Water System, the applicable plans shall be revised and submitted to the Secretary for approval. In addition, the plans shall be updated when specified in the Rule. The approved plans for the Water System are:

1. Bacteriological Sampling Plan, dated March 28, 1996;
2. Lead and Copper Sampling Plan, dated December 27, 1993;
3. Disinfection Byproducts (DBP) Compliance Monitoring Sampling Plan, Stage 2, dated March 23, 2015; and
4. Source Protection Plan, last updated July 24, 2014.

J. Posting of Permit. The Permittee shall post the current valid operating Permit in a conspicuous place at the public Water System headquarters or treatment plant.

K. Permit Modification. Based upon information received (e.g., findings of a facility inspection, or information submitted by the Permittee), the Secretary shall determine whether one or more of the following causes to modify a Permit exist. If cause exists, the Secretary may modify the Permit, and may request an updated application and/or administrative contacts information if necessary. When a Permit is modified, only the conditions subject to modification are reopened. Cause for modification includes, but is not limited to:

1. Material and substantial additions or alterations to the Water System, or the Water System's operations or any other change in conditions, that occurred after the issuance of the Permit that justify the application of conditions different or absent from this Permit;
2. The receipt of information that was not available when the Permit was issued which justifies the application of conditions different or absent from this Permit;
3. The statutes, standards or Rule, on which the Permit was based, were revised by adoption or judicial decision after the Permit was issued and those revisions justify the application of conditions different or absent from this Permit;
4. A determination by the Secretary that other good cause exists for amendment, based on the need to protect human health or the environment; or
5. Cause exists for revocation of the Permit, but the Secretary determines that modification of the Permit is appropriate.

L. Permit Suspension or Revocation. This Permit may be suspended or revoked in accordance with the Rule.

M. Transfer of ownership or Control.

1. This Permit is not transferable or assignable without prior written approval of the Secretary. All operating fees must be paid in full prior to any transfer or assignment of the Permit. In the event of a proposed change in control or ownership of the Water System, the Permittee shall provide a copy of this Permit to the prospective owner and/or operator and shall send written notification of the proposed change in ownership or control to the Secretary. The Permittee shall also inform the prospective owner and/or operator of their responsibility to make an application for transfer of this Permit.

2. Any request for transfer of ownership and/or control must, at a minimum, include:
 - a. A properly completed application form provided by the Secretary including the Permit application fee and administrative contacts information;
 - b. A written statement from the prospective owner or operator certifying:
 - i. The conditions of the operation of the Water System will not be materially different under the new ownership or control;
 - ii. The prospective owner or operator has read and is familiar with the terms of the Permit and agrees to comply with all terms and conditions of the Permit; and
 - iii. The prospective owner or operator has the technical, managerial, and financial capability to operate and maintain the Water System and remain in compliance with the terms and conditions of the Permit.
 - c. The date of the sale or transfer; and
 - d. Any other additional information the Secretary may require in light of the current status of the facility operation, maintenance, and Permit compliance.

N. Right of Access to the Water System. By acceptance of this Permit, the Permittee agrees to allow any duly authorized representative of the Secretary, upon presentation of the appropriate credentials, to:

1. Inspect or investigate any portion of the Permittee's property, fixtures, or other appurtenances belonging to or used by the Permittee for the operation and maintenance of the Water System;
2. Sample, monitor, or test the Water System; or
3. Gain access to and copy any records, reports or other documents related to the operation and maintenance of the Water System.

O. Fees. The Permittee shall pay the annual operating fees specified in 3 V.S.A. §2822.

P. Compliance with the Rule and Other Laws. Compliance with this Permit does not relieve the Permittee of the need to comply with all applicable provisions of the Rule and all other applicable requirements of Federal, State, and Local laws.

Q. Appeals. Pursuant to 10 V.S.A. Chapter 220, any appeal of this Permit must be filed with the clerk of the Environmental Court within 30 days of the date of this Permit in accordance with the Rule governing appeals to the Environmental Court.

R. Enforcement. Pursuant to 10 V.S.A. Chapters 56, 201 and 211, any violation of the terms and conditions of this permit, including any compliance schedule, is grounds for the initiation of an enforcement action by the State against the Permittee.

S. Effective Date. This Permit becomes effective on the date of signing.

This Operating Permit for the Operation of the Water System located in Vermont is effective on April 28, 2015.

David K. Mears, Commissioner
Department of Environmental Conservation
Vermont Agency of Natural Resources

By

A handwritten signature in blue ink that reads "Christine Thompson". The signature is written in a cursive style with a long, sweeping underline.

Christine Thompson, Director
Drinking Water and Groundwater Protection Division