

Findings of Fact & Reclassification Order
Groundwater Reclassification in Bennington and Shaftsbury
due to PFAS Contamination
Bennington, Village of North Bennington, and Shaftsbury

February 11, 2021

Prepared by:

The Vermont Agency of Natural Resources

Draft
Findings of Fact & Reclassification Order
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PFAS Contamination

INTRODUCTION

This document represents the Vermont Agency of Natural Resources (ANR) findings and determination (Reclassification Order) to reclassify groundwater from Class III to Class IV (non-potable). This document is divided into the following section:

- **Introduction**
- **Overview**- explains the reasons groundwater is being reclassified and the rationale for the reclassification order.
- **Background**
- **Petition and Supporting Documents**-provides a description of the groundwater reclassification petition and the documents that supported this petition and order.
- **Class IV area**-describes how Class IV boundaries were determined.
- **Monitoring Requirements**-describes the monitoring that will take place within the reclassification area.
- **Public Notification**-describes the public notification process for the reclassification.
- **The Finding of Facts and the Reclassification Order**-which is the formal reclassification order that reclassifies the groundwater from Class III to Class IV, along with any conditions.

The sections leading up to the Finding of Facts and the Reclassification Order supplement the formal order by providing context for the groundwater reclassification.

OVERVIEW

The reclassification addresses the presence of per- and polyfluoroalkyl substances (PFAS) found in parts of Bennington, the Village of North Bennington, and Shaftsbury as shown on the map in Attachment A. This reclassification is in response to the groundwater reclassification petition (Attachment B), dated January 28, 2021, submitted by Barr Engineering Company (Barr) on behalf of Saint-Gobain Performance Plastics. This petition was submitted to meet the requirements specified in the following documents related to groundwater reclassification and institutional controls:

- The Vermont Groundwater Protection Rule and Strategy, effective July 6, 2019;
- The Consent Order and Final Judgement between the State of Vermont and Saint-Gobain Performance Plastics, effective May 2019 (referred in the remainder of the document as the Consent Order); and

- The ANR approved corrective action plans for the Bennington-wide PFAS response pursuant to the authority under 10 V.S.A. §6615b and the Vermont Investigation and Remediation of Contaminated Properties Rule:
 - Interim Measures Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area I Operable Unit A, dated August 11, 2017;
 - Interim Measures Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area II Operable Unit A, dated June 7, 2019;
 - Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area II Operable Unit C, dated March 19, 2020; and
 - Corrective Action Plan 2-Corrective Action Areas I and II – Operable Unit B North Bennington and Bennington, dated March 2020.

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As stated in the VT ANR Record of Decisions and Selection of Remedies (Appendices D and D1) of the Consent Order, ANR determined that active remediation was not technically feasible nor cost effective to remove PFAS contaminating area-wide groundwater. The selected corrective actions focused on providing long-term drinking water remedies and implementing institutional controls, primarily groundwater reclassification, to restrict groundwater use given the expected persistence of PFAS in the area-wide groundwater.

Reasons and Purpose of this Class IV Designation

Groundwater in Vermont, by default, is considered Class III groundwater, which means it is suitable for being used as drinking water, that is, a potable or public water supply. Reclassification of groundwater from a Class III to a Class IV designates and maps groundwater as non-potable, which means, under Vermont regulations, that groundwater is expected to exceed groundwater enforcement standards for more than five years. The groundwater enforcement standard for PFAS is 20 ng/L for the cumulative total of perfluorooctanoic acid (PFOA), perfluorooctane sulfate (PFOS), perfluoroheptanoic acid (PFHpA), perfluorononanoic acid (PFNA), and perfluorohexane sulfate (PFHxS). Groundwater sampling results exceed 20 ng/L in multiple locations, and it is expected that PFAS will persist above the groundwater enforcement standards for over five years, and potentially decades in some parts of the proposed Class IV area. The boundary of the proposed reclassification area is the same boundary as the Corrective Action Area as defined in the Consent Order, with the addition of one parcel in the northeast portion of the reclassification area.

The main purpose for reclassifying the groundwater to Class IV within the area shown on the map in Attachment A is to protect human health and the environment by providing an institutional control that notifies landowners, well drillers, and regulatory agencies that groundwater is or may be contaminated by PFAS. VT ANR recognizes practical and policy issues in reclassifying an area so large. The proposed reclassification order attempts to balance the following:

- Public notification that the groundwater within the proposed reclassification is potentially contaminated with PFAS,
- Restrictions, to the extent practical, to prevent the public from using contaminated groundwater within the Class IV area;

- The fact that in many areas within the proposed reclassification boundary, the installation of a new well is the only practical source for a potable or public water supply;
- The potential for degrading groundwater quality and spreading contamination due to drilling new wells within the Class IV boundary; and
- Consistency with the requirements in the Consent Order and the approved corrective action plans.

The proposed reclassification order will prohibit, unless there are extenuating circumstances approved by VT ANR, the installation of a drinking water supply well (potable or public water supply) for a resident or business that is located within 200-feet of an existing municipal waterline, including those municipal waterlines that are being constructed as part of an ongoing corrective action approved by VT ANR.

The VT ANR does consider municipal connections as the preferred long-term drinking water remedy for all areas and encourage property owners to connect to municipal water where feasible. However, there are parcels, or parts of a parcel where connecting to waterlines are not technically feasible or may be economically prohibitive. This proposed reclassification order will allow for the possibility of installing a new drinking water well for development located more than 200 feet away from a waterline, provided that the well is constructed following the specifications in Attachment D, or an acceptable equivalence as determined by VT ANR. The VT ANR considers the well construction specifications in Attachment D as best management practices to mitigate further impairment of groundwater quality or the spreading of contamination within the Class IV boundary. If VT ANR determines that there are sufficient extenuating conditions in which connecting to a waterline is not technically or economically feasible, then a new drinking water well for a building or structure within 200 feet of a waterline must also be constructed following the specifications in Attachment D, or an acceptable equivalence as determined by VT ANR.

This proposed reclassification order will prohibit the use of overburden wells or springs as a potable or public water supply given the likelihood that such a well will have groundwater that is contaminated with PFAS above the applicable standards. The VT Department of Environmental Conservation Waste Management and Prevention Division will need to be notified prior to any new well being installed for industrial, commercial, and geothermal use so they can assess the suitability of such well or use in light of the Class IV designation. The Agency of Agriculture, Food, and Market will need to be notified prior to any new well being installed for agricultural use so they can assess the suitability of such well or use in light of the Class IV designation.

Summary of supporting documentation for this Reclassification Determination

The findings and reclassification order are based on the considerations outlined in Section 12-506 of the Vermont Groundwater Protection Rule and Strategy, effective July 6, 2019. A copy of the rule is available online at <https://dec.vermont.gov/water/groundwater> or by contacting the Department of Environmental Conservation, Waste Management and Prevention Division, One National Life Drive, Davis Building-1st floor.

The petition to reclassify and other supporting documents is available online at <https://dec.vermont.gov/bennington-groundwater-reclassification>. A list of the supporting

documentation used in issuing this order is provided in Attachment C. Much of the information contained in this order was obtained from the following:

- Petition to reclassify groundwater prepared by Barr, dated January 28,
- Barr Response to Technical Comments from ANR, dated October 23, 2020;
- Conceptual Site Model Site Investigation Report: Bennington, Vermont, prepared by Barr, dated March 2018; and
- Record of Decision and Selection of Remedies for Corrective Action Area I and Corrective Action Area II-(Appendix D1 of the Consent Order.

The petition is also available at the Bennington Town Offices-205 South St, Bennington VT.

BACKGROUND

Two former Teflon-coating facilities were operated by Chemfab. The first facility located on Northside Drive in Bennington operated from 1969 to 1978. The second Teflon-coating facility on Water Street in North Bennington operated from 1978 to February 2002.

In February 2016, PFAS, primarily PFOA, were discovered in drinking water wells in the vicinity of the former Teflon coating factory in North Bennington. Subsequent sampling found PFAS contamination in over 330 drinking water wells, mainly private residences, above the Vermont Groundwater Enforcement Standards within Bennington, the Village of North Bennington, and portions of Shaftsbury. The initial response to this area-wide groundwater contamination was to provide bottled water and to install point-of-entry treatment systems (POETs) to remove PFAS. There were as many as 325 POETs installed and in operation at residences and businesses as part of the area-wide PFAS response in Bennington. Over the next several years, subsequent response actions included connecting homes/businesses to municipal waterlines under approved corrective action plans, site investigation activities (soil boring, monitoring wells, sample collection of groundwater, surface water, sediment, and fish) and the development of a Conceptual Site Model (CSM). A CSM provides a representation of the likely major contaminant sources; how the contaminants are moving through environmental media, particularly groundwater; and the degree and extent of the contamination in present time and into the future based on available technical and site investigation data. The CSM serves as the foundation for any proposed activities, remedial or protective, and will be updated as needed based on future monitoring results or new information.

Waterline work is ongoing. There are 480 residences/businesses that have been or are eligible to be connected to municipal water as part of approved the corrective action plans. As of December 29, 2020, 365 residences/businesses have been connected. As a condition of connecting, the water supply wells are disconnected from the residence/business and properly abandoned to ensure there is no contaminated water getting into the municipal system. Also, the closure of these individual water supplies removes a possible pathway for contaminants to move vertically along the well into the underlying aquifers or through overland flow if the wells remain active. The remaining connections are scheduled to be completed during the 2021 construction season.

There are parts of the Corrective Action Area, which is within the proposed Class IV reclassification area, where it was determined not feasible to connect residences or businesses to municipal water. In those areas, Saint-Gobain, who purchased Chemfab in 2000, is obligated under the Consent Order to continue operating and monitoring existing POETs; evaluate residences/businesses with treatment systems for the feasibility of long-term drinking water

remedies, such as replacement wells and potentially connection to a waterline, if they are nearby; and continue long-term monitoring of drinking water wells that are currently below the Vermont Groundwater Enforcement Standard.

Based on information provided in the Conceptual Site Model Site Investigation Report: Bennington Vermont, prepared by Barr, dated March 2018, and documented in the Record of Decision and Selection of Remedies for Corrective Action Area I and Corrective Action Area II- (Appendix D1) of the Consent Order, ANR determined that past air emissions from two former Teflon-coating facilities caused area-wide PFAS contamination in groundwater and PFAS in groundwater is expected to exceed the Vermont Groundwater Enforcement Standards for over five years, if not decades.

PETITION

ANR has determined that the Groundwater Reclassification Petition prepared by Barr on behalf of Saint-Gobain Performance Plastics, dated January 28, 2021, is administratively and technically complete. The petition is consistent with the reclassification requirements specified in Subchapter 5-in the Vermont Groundwater Protection Rule and Strategy, effective July 6, 2019, and the Vermont Procedure for Class IV Groundwater Reclassification, effective July 5, 2018. This petition references the Conceptual Site Model Site Investigation Report: Bennington, Vermont, prepared by Barr, dated March 2018, which provides the technical basis for this reclassification. This report addresses the technical information required in Section 12-503(c) and Section 12-504 (c) of the Vermont Groundwater Protection Rule and Strategy, dated July 6, 2019. Referencing this Barr report in the petition also meets the requirements of the Vermont Procedure for Class IV Groundwater Reclassification given that the area-wide Bennington PFAS response is being managed pursuant to the requirements in the Consent Order and Investigation and Remediation of Contaminated Properties Rule (IRCPR).

CLASS IV AREA DESIGNATED IN THE PETITION

The Class IV boundary matches that of the Corrective Action Area boundary as established in the Consent Order (Attachment A), except the addition of one parcel due to PFAS concentrations being recently found in water supply wells on this parcel above Vermont Groundwater Enforcement Standards for PFAS. The reclassification boundaries followed the nearest parcel boundaries that reflects the current knowledge about the degree and extent of PFAS contamination in groundwater and its movement through the environment obtained from the following:

- The collection and analysis of data and information summarized in the report entitled, Conceptual Site Model Site Investigation Report: Bennington, Vermont; and
- the PFAS sampling results of over 650 private water supplies as shown on the map in Attachment E.

The east-west boundaries extend roughly from the Vermont-New York state line to the Green Mountain National Forest boundary. The northern boundary roughly follows the Bennington-Shaftsbury town line, however, portions of the Class IV extend into Shaftsbury. The southern boundary roughly follows VT State Route 9.

Attachment E contains a map that depicts the peak concentration of drinking water well results and shows these results relative to the proposed Class IV boundaries.

MONITORING REQUIREMENTS

As part of the requirements of the Consent Order Saint-Gobain Performance Plastics is obligated to perform long-term monitoring per an approved corrective action plan. A corrective action plan, entitled “Corrective Action Plan 2-Corrective Action Areas I and II – Operable Unit B by Barr Engineering Company on behalf of Saint-Gobain Performance Plastics was approved by ANR in April 2020, which included a long-term monitoring plan and long-term natural attenuation plan for PFAS in groundwater and soil. This long-term monitoring will provide the data to help assess whether adjustments to the Class IV boundary will be needed in the future. These adjustments could be to expand, contract, or reclassify the Class IV area as demonstrated by future monitoring data, new technical information, or both.

PUBLIC NOTIFICATION OF PETITION AND DRAFT RECLASSIFICATION ORDER

The public notification of the administratively complete petition and the draft reclassification order followed the public participation requirements in Section 12-505 of the Vermont Groundwater Protection Rule and Strategy and Vermont Procedures for Class IV Groundwater Reclassification, which consisted of the following:

- Notification of the Petition and Draft order on the Vermont Environmental Notice Bulletin (ENB);
- Written notice to all property owners within and immediately adjacent to the proposed groundwater reclassification area; List of property owners can be found in the petition.
- Advertisement in the Bennington Banner about the proposed reclassification.
- Written Notice to the town clerks for Bennington and Shaftsbury;
- Written Notice to the Bennington County Regional Commission; and
- Written Notice to the Vermont Groundwater Coordinating Committee.

The deadline to receive public comments is March 19, 2021, which is 30 days from when the petition and draft order was placed on the Environmental Notice Bulletin (ENB). Comments can be sent directly to John Schmeltzer or Richard Spiese (see contact information below) or through the ENB. A virtual public meeting will be held on March 4, 2021, at 6:00 PM. Once a final decision on the petition is reached, notice of the final decision and response to comments submitted during the public comment period will be placed on the ENB.

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Commented [SJ2]: This section will be revised to address the outcome of the public comment process. I am assuming if we get public comments, which I think we will, I am thinking that the response to comments will be an attachment to the decision.

Commented [SJ3]: Deadline to receive public comments was extended from to April 30, 2021.

Commented [SJ4]: Need link from Elle

The draft order, found below, will serve as the basis for the final decision and reclassification area. Changes based upon public comments received may be made to this draft order prior to its final issuance but will be addressed within the posted responsiveness summary.

Findings of Fact

- Barr Engineering, on behalf of Saint-Gobain Performance Plastics, has submitted an administratively complete reclassification petition. The “final” petition was received on January 28, 2021, and determined administratively and technically complete on February 5, 2020.
- The Vermont Agency of Natural Resources (ANR) has reviewed the petition and determined that the factual information provided in the petition and other documents referenced in the petition or this Decision Document is in accordance with the requirements of Sections 12-503 and 12-504 of the Vermont Groundwater Protection Rule & Strategy and 10 V.S.A. Chapter 48. This information supports the reclassification of groundwater to a Class IV as shown on map in Attachment A. The final approved Class IV boundary will be able to be found on the ANR Atlas.
- Extensive environmental investigations, as summarized in the petition, have identified a zone of PFAS groundwater contamination (Attachment A) that exceeds groundwater enforcement standards. The major source of the groundwater PFAS contamination appear to be the leaching through soils from past air emissions of two former Teflon coating facilities. Given this contaminant pathway and results of the environmental investigations, it appears, in general, that the highest PFAS levels are found in shallow groundwater.
- Per the requirements in Section 12-502 of the Groundwater Protection Rule & Strategy, reclassification is required because groundwater quality within the proposed Class IV boundary area (Attachment A) exceeds the Vermont Groundwater Enforcement Standards for PFAS and the PFAS contamination in groundwater is predicted to persist for more than five years, likely decades.
- Area-wide groundwater, particularly shallow groundwater but in some cases deeper groundwater, within the proposed Class IV area is contaminated to the point that it is not suitable as a source of drinking water (potable or public water systems) and may not be suitable for non-potable uses, such as agriculture, commercial, industrial, or geothermal use.
- Although the results of the site investigation and the Conceptual Site shallow groundwater likely has PFAS levels above standardshas there are existing drinking water wells within the proposed reclassification area that currently either have no detections of targeted PFAS or have targeted PFAS levels below the applicable groundwater standards. Based on the ongoing monitoring of these drinking water wells, it appears likely that many of these drinking water wells current sampling reswill likely to continue . These wells were liked installed in manner that tapped into the deeper and cleaner aquifer. It also recognized that new wells have been installed using well construction approaches to minimize eand, with constructed This wells
- ANR considers the connection to a municipal water system as the preferred long-term

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drinking water remedy for all properties within this proposed Class IV and will strongly encourage property owners to connect where feasible; however, there are locations ~~it is recognized that there are parcels, or parts of a parcel,~~ where connecting to a municipal water system are not technically feasible nor economically viable given the size and population densities of some parts ~~area~~ of the proposed Class IV area.

Reclassification Order

The Secretary of the Agency of Natural Resources (ANR) hereby makes the Findings of Fact identified above and reclassifies the groundwater to Class IV for the area identified on the map in Attachment A subject to the following conditions:

1. The installation of new permitted drinking water wells may be allowed for a building or structure outside 200-feet of an existing waterline or within 200-feet if given a variance by ANR, provided the following are met:
 - i. The new well is constructed following the requirement specified in Attachment D, or an acceptable equivalence as determined and approved by ANR;
 - ii. Prior to use, the water must be tested for PFAS that are regulated under either the Vermont Groundwater Protection Rule and Strategy or the Vermont Water Supply Rule, as may be amended. At the time of this order, there are five regulated PFAS: PFOA, PFOS, PFHpA, PFNA, and PFHxS. The current standard is 20 ng/L for the combination of the five regulated compounds. The water samples must be sampled using EPA Method 537.1, or another method accepted by ANR. Results of the water test shall be submitted to the Drinking Water and Groundwater Protection Division for review and approval prior to use;
 - iii. The submittal of a long-term monitoring plan for PFAS testing to the Drinking Water and Groundwater Protection Division for review and approval or verification that this well is part of a long-term monitoring plan under an ongoing corrective action being performed by Saint-Gobain Performance Plastics pursuant to the requirements of the CO and an approved corrective action plan by ANR. Monitoring will be required until there is sufficient data and information, as determined by ANR, that long-term monitoring is no longer warranted. Results from the ongoing monitoring results must be provided by the permittee to the Drinking Water and Groundwater Protection Division as specified in the conditions of any applicable permit, unless this well is being monitored as part of work performed by Saint-Gobain Performance Plastics under the requirements of the CO and an approved corrective action plan by ANR; and
 - iv. If the PFAS concentrations in a water sample from a well are above the regulatory standard for the regulated PFAS, then a suitable point-of-entry system (POET), or other long-term remedy approved by ANR, must be installed. If a treatment system is not required as part of an approved corrective action plan overseen by ANR, then a design plan of the long-term remedy must be submitted for review and approval to the Drinking Water and Groundwater Protection Division along with an operation and maintenance plan for the proposed remedy.
2. Overburden wells, springs, or shallow dug wells for drinking water wells are prohibited.
3. The VT Department of Environmental Conservation Waste Management and Prevention Division must be notified prior to any new well being installed for industrial, commercial, or geothermal use so they can assess the suitability of such well or use in light of the Class IV designation.
4. The Agency of Agriculture, Food, and Market must be notified prior to any new well being installed for agricultural use so they can assess the suitability of such well or use in light of the Class IV designation.

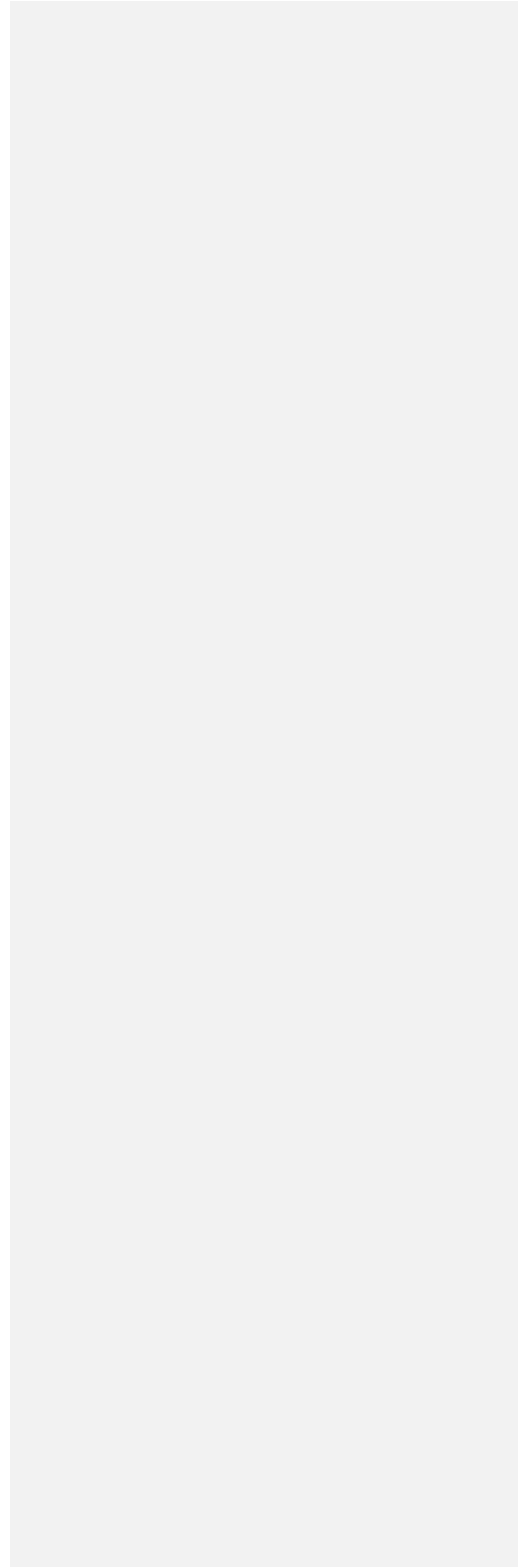
5. Long-term monitoring within the Class IV is required by Saint-Gobain Performance Plastics, consistent with the approved corrective action plan, entitled, "Corrective Action Plan 2-Corrective Action Areas I and II – Operable Unit B North Bennington and Bennington, dated March 2020, prepared by Barr, or any subsequent updates to this plan approved by ANR. This long-term monitoring will provide groundwater data to assess whether adjustment (expansion, contraction, or reclassification back) of the Class IV designation is warranted.

Julie Moore, Secretary
Agency of Natural Resources

Date _____

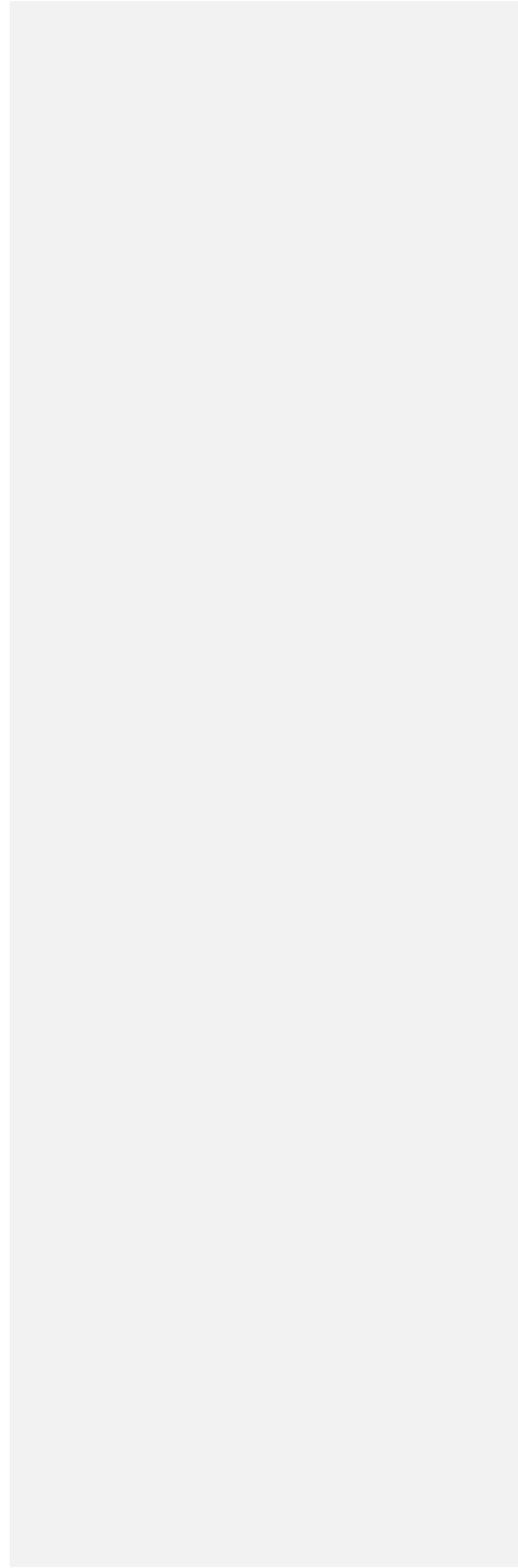
Attachment A Map Showing Class IV Boundary

Use Figure 6 from Petition



Attachment B Petition

Include link

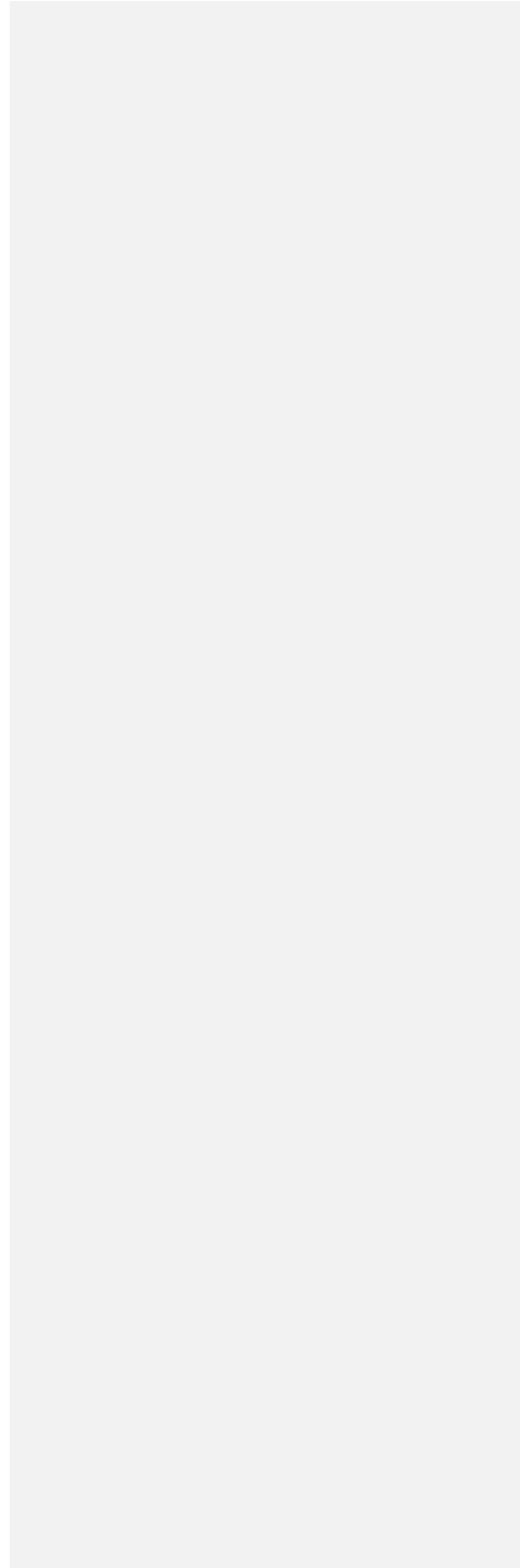


Attachment C- List of Reports and Corrective Action Plans referenced in this Order

- Petition to reclassify groundwater prepared by Barr, dated October 23, 2020;
- Barr Response to Technical Comments from ANR, dated October 23, 2020;
- Conceptual Site Model Site Investigation Report: Bennington, Vermont, prepared by Barr, dated March 2018;
- Comparative Analysis of Corrective Action Options and Evaluation of Corrective Action Alternatives: Corrective Action Area II (Appendices C and C1) of the Consent Order
- Record of Decision and Selection of Remedies for Corrective Action Area I and Corrective Action Area II-(Appendix D1) of the Consent Order;
- Interim Measures Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area I Operable Unit A, dated August 11, 2017;
- Interim Measures Corrective Action Plan for Public Water System (PWS) Extensions Corrective Action Area II Operable Unit A, dated June 7, 2019;
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- Corrective Action Plan 2-Corrective Action Areas I and II – Operable Unit B North Bennington and Bennington, dated March 2020.

Attachment D-Design for New and Replacement Well within the Class IV boundary

Add Attachment D in PDF



Attachment E-Map summarizing Water Supply Testing Results in Bennington area

Include Figure 4 from Petition

