

Abenaki Email Dated 3/9/21 and  
DES Email Dated 3/5/21

**From:** [Rob Gallo](#)  
**To:** [Klevens, Cynthia](#); [NLaChance@NewEnglandServiceCompany.com](mailto:NLaChance@NewEnglandServiceCompany.com); "[Bresson, Cristy \(Allianz Resolution Management US\)](#)"  
**Cc:** [Goyette, David](#); [Nichols, Emily](#); [Bourgouin, Kim](#)  
**Subject:** RE: 0262020 Bow Abenaki Water - White Rock - DES Corrective Action Plan (CAP) EXTENSION  
**Date:** Tuesday, March 9, 2021 12:11:04 PM

**EXTERNAL:** Do not open attachments or click on links unless you recognize and trust the sender.

Good Afternoon Cindy,

This is to confirm that we accept the revised CAP outlined below. Thank you – Bob

Robert Gallo, PE  
New England Service Company  
37 Northwest Drive  
Plainville, CT 06062

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**From:** Klevens, Cynthia <[CYNTHIA.M.KLEVENS@des.nh.gov](mailto:CYNTHIA.M.KLEVENS@des.nh.gov)>  
**Sent:** Thursday, March 4, 2021 2:28 PM  
**To:** 'Rob Gallo' <[RGallo@newenglandservicecompany.com](mailto:RGallo@newenglandservicecompany.com)>; 'NLaChance@NewEnglandServiceCompany.com' <[NLaChance@NewEnglandServiceCompany.com](mailto:NLaChance@NewEnglandServiceCompany.com)>; 'Bresson, Cristy (Allianz Resolution Management US)' <[cristy.bresson@allianzrm-us.com](mailto:cristy.bresson@allianzrm-us.com)>  
**Cc:** Goyette, David <[David.N.Goyette@puc.nh.gov](mailto:David.N.Goyette@puc.nh.gov)>; Nichols, Emily <[Emily.P.Nichols@des.nh.gov](mailto:Emily.P.Nichols@des.nh.gov)>; Bourgouin, Kim <[Kim.C.Bourgouin@des.nh.gov](mailto:Kim.C.Bourgouin@des.nh.gov)>  
**Subject:** RE: 0262020 Bow Abenaki Water - White Rock - DES Corrective Action Plan (CAP) EXTENSION

Bob, Nick and Cristy,

We have reviewed your corrective action plan below based on DES communication with the PUC today, and hereby extend the timeline as follows:

- 1) Completion of distribution system upgrades including isolation valves and pressure reducing valves, as needed, **by November 2021**, to allow for DWSRF loan approval following the PUC order, along with design, bidding and construction per DWSRF and DES design rules;
- 2) Priority completion of storage tank rehabilitation and relining as soon as funding is approved but no later than **November 2021**, in parallel to the above distribution work;
- 3) Pursuit of funding assistance – **Completed** via approval of funding from the DWG Trust Fund; and
- 4) Installation and permitting of a new community well source **by June 2022 (unchanged)**, if source capacity issues persist.

**Please reply to this email by 2 weeks from today confirming your acceptance of these changes or an alternate proposal for DES consideration.** Please note that the deadline of March 29, 2021 for submittal of your plan to address the Arsenic MCL violations remains unchanged, per Letter of

Deficiency DWGB 20-043.

Thank you, Cindy

Cynthia M. Klevens, PE, Water Treatment and Small Systems, 603-271-3108; cell 603-473-4818

NHDES Drinking Water and Groundwater Bureau, Concord NH 03302-0095

DES Email Dated 3/4/21 and 3/3/21

**From:** [Klevens, Cynthia](#)  
**To:** [Goyette, David](#)  
**Cc:** [Laflamme, Jayson](#); [Schwarzer, Mary](#); [McKenna, Johnna](#); [Kernen, Brandon](#)  
**Subject:** RE: 0262020 Bow Abenaki Water - White Rock - DES Corrective Action Plan (CAP) Update Approval EXTENSIONS  
**Date:** Thursday, March 4, 2021 10:55:13 AM

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Please see responses in RED CAPS below. I also confirmed that the posted loan interest rates are valid through 8/5/2021 per DWSRF Manager, Johnna McKenna. I will send followup correspondence to Abenaki to communicate the timeline extensions, thank you.

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**From:** Goyette, David <[David.N.Goyette@puc.nh.gov](mailto:David.N.Goyette@puc.nh.gov)>  
**Sent:** Thursday, March 4, 2021 9:55 AM  
**To:** Klevens, Cynthia <[CYNTHIA.M.KLEVENS@des.nh.gov](mailto:CYNTHIA.M.KLEVENS@des.nh.gov)>  
**Cc:** Laflamme, Jayson <[Jayson.P.Laflamme@puc.nh.gov](mailto:Jayson.P.Laflamme@puc.nh.gov)>; Schwarzer, Mary <[Mary.E.Schwarzer@puc.nh.gov](mailto:Mary.E.Schwarzer@puc.nh.gov)>  
**Subject:** FW: 0262020 Bow Abenaki Water - White Rock - DES Corrective Action Plan (CAP) Update Approval

Hello Cindy,

Before finalizing PUC Commission Staff's recommendation regarding White Rock, and due to the time delay, PUC Staff is seeking confirmation regarding the following items. Could you please indicate whether DES gives its approval for these items? DES's position will be included in the Staff Recommendation, for the Commissioners' review.

- 1) The isolation valves were approved for installation "over the winter months." Because this scenario is now unlikely, does DES grant Abenaki approval to install isolation valves "within 90 days of the PUC Commission's approval?"

DES APPROVES EXTENSION OF THE DISTRIBUTION SYSTEM WORK INCLUDING ISOLATION VALVES TO NOVEMBER 2021, TO ALLOW FOR DWSRF LOAN APPROVAL FOLLOWING THE PUC ORDER, DESIGN, BIDDING AND CONSTRUCTION IN ACCORDANCE WITH THE DWSRF AND DES DESIGN RULES.

- 2) Does DES approve Abenaki's installation of pressure reduction valves, which it proposed in its revised Corrective Action Plan submitted to DES in August 2020? Your October 2020 email referenced the distribution valves, but did not explicitly reference the pressure reduction valves.

YES, PRESSURE REDUCING VALVES (PRVs) ARE APPROVED FOR INSTALLATION AS PART OF THE DISTRIBUTION SYSTEM IMPROVEMENTS, AS NEEDED.

- 3) Does DES grant Abenaki an extension of the time period for relining the tanks, from Spring 2021 to Summer 2021?

DES APPROVES EXTENSION OF THE TANK RELINING TO NOVEMBER 2021 IN PARALLEL TO THE DISTRIBUTION WORK IN ITEMS 1) AND 2) ABOVE. THE ADDITIONAL TIME IS NEEDED TO COMPLETE THE LOAN APPROVALS, DESIGN, BIDDING AND CONSTRUCTION OF THE WORK IN ACCORDANCE WITH THE DWSRF AND DES DESIGN RULES.

Thank you.  
David

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**From:** Klevens, Cynthia <[CYNTHIA.M.KLEVENS@des.nh.gov](mailto:CYNTHIA.M.KLEVENS@des.nh.gov)>  
**Sent:** Wednesday, March 3, 2021 12:12 PM  
**To:** Goyette, David <[David.N.Goyette@puc.nh.gov](mailto:David.N.Goyette@puc.nh.gov)>  
**Cc:** Laflamme, Jayson <[Jayson.P.Laflamme@puc.nh.gov](mailto:Jayson.P.Laflamme@puc.nh.gov)>; Schwarzer, Mary <[Mary.E.Schwarzer@puc.nh.gov](mailto:Mary.E.Schwarzer@puc.nh.gov)>  
**Subject:** Re: 0262020 Bow Abenaki Water - White Rock - Corrective Action Plan Update Approval

Good afternoon, the email below is my formal approval. Our enforcement is OK with this as the written correspondence is enforceable the same as a letter.

And yes, the posted SRF rates are the current rates if they close on the loan today. All the loan paperwork is ready just awaiting PUC approval so that we can go to G&C and lock in this rate. Thank you, Cindy

Cynthia Klevens, PE / 603-271-3108; cell 603-473-4818  
Small Systems Engineering and Treatment, NHDES Drinking Water and Groundwater, Concord NH

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**From:** Goyette, David  
**Sent:** Wednesday, March 3, 2021 11:15 AM  
**To:** Klevens, Cynthia  
**Cc:** Laflamme, Jayson; Schwarzer, Mary  
**Subject:** FW: 0262020 Bow Abenaki Water - White Rock - Corrective Action Plan Update Approval

Hello Cindy,

Regarding approval of Abenaki's Corrective Action Plan for its White Rock system in Bow, could you please email, or provide a link to, DES's formal approval of that plan?

Also, could you please confirm that the current loan rate for a 20-year DWSRF loan is 1.296%? DES's website page that shows the loan rates for this type of loan indicates that 1.296% is the current rate for a loan with a 20-year term. I noted, however, that the page indicates that this was "Effective 8/6/20," so I just want to be sure that this is still the current rate. Here is the link to the DES page that I am referring to:

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/srf-loan-charge-rates.pdf>.

Thank you.

**David Goyette**  
Utility Analyst III  
New Hampshire Public Utilities Commission  
21 S. Fruit St, Suite 10  
Concord, NH 03301-2429  
603.271.6326(voice)  
603.271.3878(fax)

## DES Email Dated 10/13/20

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**From:** Klevens, Cynthia  
**Sent:** Tuesday, October 13, 2020 6:14 PM  
**To:** RGallo@Newenglandservicecompany.com;  
NLaChance@NewEnglandServiceCompany.com  
**Cc:** Schwarzer, Mary; Goyette, David; Laflamme, Jayson; Bresson, Cristy (Allianz Resolution Management US)  
**Subject:** 0262020 Bow Abenaki Water - White Rock - Corrective Action Plan Update Approval

Greetings,

DES approves your updated Corrective Action Plan below to address the storage tanks and source supply capacity for the Bow Abenaki White Rock water system subject to the following:

- Completion of the storage tank relining by Spring 2021;
- Design approval and installation of distribution system isolation valves to assist with leak detection and repair over the winter months within 90 days of funding approval from the DWSRF;
- Continued pursuit of funding assistance for evaluation and installation of an additional well source; and,
- Installation and permitting of a new community well source by June 2022 if source capacity issues persist.

Please keep us informed of your progress, thank you, Cindy

Cynthia Klevens, PE  
Small Systems Engineering and Treatment, NHDES Drinking Water and Groundwater, Concord NH  
cc pws file

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**From:** RGallo@Newenglandservicecompany.com <RGallo@Newenglandservicecompany.com>  
**Sent:** Tuesday, September 1, 2020 12:16 PM  
**To:** 'Klevens, Cynthia' <CYNTHIA.M.KLEVENS@des.nh.gov>  
**Subject:** Abenaki Water - White Rock - Corrective Action Plan Update

Good Afternoon Cyndi,

AWC would like to update the Corrective Action Plan for the White Rock System, dated October 30, 2019. Please see below:

**Source Supply:** We are now at a point where the system sources are meeting daily demand during the current drought. Several minor leaks and a significant leak were identified and repaired since the original CAP was submitted. We have not required bulk water deliveries for several months. In light of the stabilized production vs. demand, we request a 2-year extension from this date to complete a source investigation and construction of improvements. In year one we will continue to evaluate the system production vs. demand, and determine if the sources are adequate at the end of the period. If they are deemed sufficient, then we would request that the investigation of a new source be suspended, with the understanding that the investigation may be required at some time in the future. If it is deemed that the sources are not sufficient to serve the system needs, then year two would be devoted to a new source investigation and construction of the necessary improvements.

**Storage:** In February of 2020 we had the two 15,000-gallon storage tanks inspected, and they were deemed suitable for lining. The approved Corrective Action Plan stated that Abenaki Water Company would replace the two tanks, where now we are pursuing the lining effort. We are awaiting approval of the financing, and will have the lining done when we receive the approval. Since there has been a delay in the approval process we would like to qualify the timing of the liner installation. If approval of the financing is received too late in the year, it may not be feasible to have the lining

done until Spring of 2021. If that is the case we will inform you of the delay, and request a later completion date for Spring of 2021. If financing is approved in the near term, we will have the lining done this year.

Please let me know if the information above is acceptable for amending the CAP. Thank you.

Robert Gallo, PE  
New England Service Company  
37 Northwest Drive  
Plainville, CT 06062  
Ph: (860) 747-1665  
Fax: (860) 747-2536

## Brogan Report to Staff, Dated 9/17/20

## MEMO REPORT

Date: September 17, 2020

**From:** Douglas W. Brogan, P.E.

**To:** Jayson Laflamme, Asst. Director, Gas & Water Division, NHPUC

**Re:** DW 20-088 Abenaki Water Company  
Petition to Approve NH DWSRF Financing for White Rock Improvements

I am writing this memo report as an engineering consultant to the Gas-Water Division to summarize my findings in the above-referenced docket, which is a financing request by Abenaki Water Company, Inc. (Abenaki or company) to fund improvements in its White Rock system in the town of Bow.

My review is based principally on material filed, and discovery in, this and related dockets; participation in a meeting between Staff and the company in December 2019; and a file review of the system at the New Hampshire Department of Environmental Services (NHDES). My review is limited primarily to the engineering and operational aspects of the proposed improvements, although I also will touch on a few related costs.

### A. Background

The White Rock system consists of three bedrock wells, two 15,000 gallon buried steel atmospheric storage tanks, and a small pumping/treatment facility, all serving 95 residential customers. The system dates from the late 1960's, although the existing tanks appear to be some ten years younger. The system was acquired by Abenaki in 2014 (Order 25,621, DW 13-236).

The White Rock system has suffered from marginal supplies exacerbated by recurring distribution system leaks over the years. Attempts were made prior to Abenaki ownership to deepen wells (two are approaching, and one exceeds, 1,000 feet) with limited success. Distribution leaks are the result of poor quality plastic mains with glued joints that give way over time, and services with nylon fittings that become brittle and break. Outages and other impacts to customers vary with changes in well outputs, system demands, and the number and size of distribution system leaks - the latter which can be small and hard to detect.

In more recent years the situation resulted in significant bulk water deliveries in January 2018 and again in January-February 2019; but became acute beginning in August 2019, with deliveries (of 6,000 gallons each) increasing to as many as 16 per month by November (Staff 2-4). There were some early indications one or both tanks was leaking (Staff 2-1), leading the company to focus initially on tank replacement and securing additional supply. On November 1, 2019 the company met with NHDES, the Village Shore Estates Association (Association) representing residents of the development, the Town of Bow, the Office of Consumer Advocate and Commission Staff to discuss the situation and review options. The company was subsequently able to obtain grant money from NHDES to perform a tank inspection; and has since concluded the tanks are not leaking (Staff 1-1). As a result, the company's initial funding request to the Commission on June 2, 2020 involved three projects:

- 1) Seeking additional supply.
- 2) Relining the tank interiors to extend tank life.
- 3) Installing a small number of additional isolation valves in the distribution system.

As the summer progressed, customers conserved water; more leaks were found and repaired; the wells were apparently able to recover to some extent; and no additional bulk water deliveries were required (Staff 3-2 and 3-5).<sup>1</sup> The company met again with the Association on August 20, 2020, and has reviewed options with NHDES, resulting in a revision to its financing request on August 27, 2020 that would:

- 1) Postpone efforts to secure additional supply.
- 2) Include replacement of two pressure reducing valves (PRV's) in the distribution system.
- 3) Add a \$5,000 contingency to both the tank relining and distribution valve projects.

I will address each of the projects in the original and revised proposals separately below. The overall situation is described well in company testimony and data responses. The need for improvements has had continuing support from NHDES as the situation evolved (see, for example, letter of Cynthia M. Klevens, P.E., May 14, 2020, Attachment NAL-2 to testimony of Nicholas A. LaChance; and Staff 3-2 c). The system has rates that are already very high, lending support to an incremental approach to improvements. The projects and associated costs are summarized in the table below.

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<sup>1</sup> The company has indicated "the 3 existing wells have been able to sustain demand throughout the peak season and during this year's summer drought" (August 27, 2020 revised filing cover letter, p. 1) "with the help of an outdoor watering ban." (Staff 3-2 a)

	Original Filing Jun 2020	Revised Filing Aug 2020
Additional Source of Supply (\$100,000) and Associated Infrastructure (\$215,000)	\$315,000	-
Tank Relining	\$45,000	\$50,000
Distribution Valves	\$40,000	\$45,000
Pressure Reducing Valves with Vaults	-	\$30,000
Total	\$400,000	\$125,000

## B. Tanks

The tanks were scraped clean internally and a visual and ultrasound inspection performed by Mass Tank Inspection Services (Mass Tank) in February, 2020 (LaChance Attachment NAL-1). The inspection indicated the original internal coating had completely deteriorated; a degree of pitting and other corrosion had occurred; but that the tanks were still serviceable. Mass Tank recommended, and the company is proposing, relining the tanks to extend their lives.<sup>2</sup>

The company has suggested a remaining tank life of 35 years based on the annual rate of wall thickness loss identified in the Mass Tank report (Staff 2-1 d, e). However, this rate is an average over the life of the tanks, including early years when the original lining was in good condition; and is exclusive of the impacts of localized pitting. In this regard it would appear beneficial to reline the tanks as soon as possible.

The company has indicated the tanks will remain in service even if a new source of supply were to be found at a different location (Staff 1-5). In this regard extending the life of the tanks, although not helping solve the water shortage problem, will be an overall benefit and less costly than full tank replacement. The numbers below indicate a total inspection and relining cost of some \$65,000, compared to an estimated replacement cost of over \$150,000 (Staff 1-2).

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<sup>2</sup> The inspection revealed only a single, small crack in a welded end plug in one tank with some potential for, but no direct evidence of, leakage. Mass Tank recommended a weld repair of the crack.

\$11,770	Replumbing to Isolate Tanks
\$7,800	Tank Inspection
\$3,210	Associated Bulk Water Deliveries <sup>3</sup>
-\$8,000	NHDES Tank Inspection Grant
<u>\$50,000</u>	Tank Relining
<b>\$64,780</b>	<b>Total</b>

### C. Distribution Valves

The company proposes to install a small number (Staff 1-11) of additional isolation valves in the distribution system to better isolate portions of the system to both help narrow down the location of leaks and limit the number of customers affected by repairs.

### D. Additional Supply

The need for additional supply had been variously described by the company as “dire” (Staff 1-16, LaChance) and “critical” (testimony of Robert Gallo, p. 3, line 35), with the system “sorely in need of a new source” (testimony of Stephen p. St. Cyr, p. 2, line 7). Company and customers endured nine months (August 2019 through May 2020, Staff 2-4) of trucking in water to keep the system operational. The company has indicated things have turned a corner, at least for the time being. However, the fact that wells have recovered to some extent is unlikely to mean the problem has gone away for the long term. While the company has undertaken some initial steps toward investigating a new source of supply, such efforts tend to be longer term and somewhat open-ended, with costs varying depending on where a new source is found and what level of treatment and pumping it may need. Given the potentially high costs involved and the recent overall improvement in the supply situation, the company is proposing to delay new source securement efforts and to continue to monitor the situation in the interim. The company has also alluded to the possibility of future grant funding for such efforts (Staff 3-2 a). Interconnection with nearby systems does not appear promising (Staff 1-6, 2-5).

### E. Pressure Reducing Valves

The wells, treatment and pumping facilities are located at the top of the system, with a 280 foot drop from top to bottom. Without pressure reduction, pressures would be extremely high (150 psi or more) at the bottom of the hill. Five PRV’s serve to divide the system into three pressure zones. The company has determined that the upper two of the five PRV’s, forming the initial pressure

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<sup>3</sup> The company appears to indicate these specific deliveries were related to the replumbing and inspection activities, but this has not been verified.

boundary, have failed (“White Rock Pressure Reduction Valve Test” report<sup>4</sup> by Josh Davis, 8/14/2020, attached to August 27, 2020 revised filing). The resulting higher pressures in the middle pressure zone have a cascading effect, leading to incrementally higher pressures (120 psi or more) in the lowest zone. Even when customers install individual PRV’s inside their homes (as it appears a number have), higher pressures in the distribution system only exacerbate leaks. The company proposes to replace the two failed units.

## **F. Summary/Conclusion**

With the exception of the tanks, each of the proposed improvements above has been on the company’s radar since at least 2015 (see “5 Year Projected Capital Program”, Attachment C to testimony of Donald J.E. Vaughan, DW 15-199). The system also lacks any kind of SCADA (Supervisory Control and Data Acquisition) system or remote reporting capability to alert operators to declining tank levels before the tanks are empty and customers out of water (LaChance testimony p. 5, lines 7-11; Staff 1-7) - another item mentioned in DW 15-199. Investigation of details such as the history of improvements prior to the instant docket or the extent of recent leak detection efforts and impact of repairs are more appropriate for a rate case, which has recently been filed in DW 20-112. It is not the intent of this memo to address, in this financing docket, prudence issues for ratemaking purposes.

The company and its White Rock customers have endured a fairly severe and prolonged crisis, lasting the better part of the past year. The company’s interactions with NHDES and the Association are commendable. While no one knows what the coming months may bring, each of those entities (including the company) are loathe to see a repeat of last winter. Customers appear to live under nearly perpetual water use limitations of varying degrees. Installation of isolation and pressure reducing valves can only help the supply situation; and tank relining will extend the life of those assets. The company hopes to be able to complete the improvements before the current construction season ends. The use of low interest emergency funding from NHDES, especially given the system’s very high rates, is a significant benefit as well. In all of these regards I believe the requested financing is reasonable.

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<sup>4</sup> It appears the elevations in report Table 1 for some or all of the last six locations may be based on a different elevation datum (USGS v. Town of Bow GIS), and the ‘Location’ labels for 17 Rocky Point Drive and 1 Oak Ridge Road reversed. These apparent discrepancies do not affect the overall conclusions of the report.

DES Email Dated 9/14/20,  
with following Attachments:  
Abenaki's Corrective Action Plan Dated 10/30/19  
DES Email Dated 2/21/20

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**Subject:** FW: Abenaki/White Rock SRF  
**Attachments:** Corrective Action Plan Approval - Bow Abenaki (0262020); AWC-WhiteRock-CAP-191030.pdf

**From:** Klevens, Cynthia  
**Sent:** Monday, September 14, 2020 11:44 AM  
**To:** douglas.brogan  
**Cc:** Laflamme, Jayson  
**Subject:** Re: Abenaki/White Rock SRF

Good morning, please see answers below in CAPS and let me know anything else, we appreciate your review in order to proceed with the tank and distribution repairs as soon as possible. Best, Cindy

Cynthia Klevens, PE  
Small Systems Engineering and Treatment, NHDES Drinking Water and Groundwater, Concord NH

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**From:** douglas.brogan <[douglas.brogan@gmail.com](mailto:douglas.brogan@gmail.com)>  
**Sent:** Friday, September 11, 2020 8:21 PM  
**To:** Klevens, Cynthia  
**Cc:** Laflamme, Jayson  
**Subject:** Abenaki/White Rock SRF

Hi Cindy. I hope I'm not duplicating efforts of other PUC staff on this, but am trying to move things quickly on the White Rock system. I'm wondering if you might be able to forward any of the following:

1) Was a formal Sanitary Survey report ever written from the November inspection? I only have the hand-written Site Inspection Report from that visit (11/1/19).

THE INSPECTION WAS TRIGGERED BY THE SOURCE CAPACITY IMPAIRMENT, NOT A SANITARY SURVEY SO ONLY THE DEFICIENCY REPORT WAS ISSUED.

2) Abenaki's original Corrective Action Plan (they indicated it was dated 10/30/19). ATTACHED

3) Any formal acceptance of that plan. ATTACHED

4) We have a copy of the very recent (9/1/20) CAP update. Has any formal response to that been issued yet? They indicated you were pretty much on board with both the update and continued SRF funding. No need to create anything if it doesn't already exist, we can just rely on Abenaki's own affirmations. But in case there's anything additional I could reference in my own write-up.

I HAVE NOT ISSUED AN APPROVAL TO THE NEW CAP BUT WILL DO SO THIS WEEK, EXTENDING THE DEADLINES FOR THE TANK RELINING TO DEC 2020 AND FOR SOURCE DEVELOPMENT TO FALL 2021, BASED ON DELAYS TO SECURE FUNDING ASSISTANCE.

Thank you,  
Doug Brogan  
(engineering consultant for PUC Gas & Water Div.)



October 30, 2019

NHDES Drinking Water & Groundwater Bureau  
Attn: Cynthia Klevens, P.E.  
P.O. Box 95  
Concord, NH 03302-0095

**Re: Abenaki Water Company (AWC) – White Rock System Corrective Action Plan**

Dear Ms. Klevens,

Per your request, and as required by the New Hampshire Code of Administrative Rules Chapter Env-Dw 700, Part Env-Dw 720, please see the following Corrective Action Plan for the water supply and storage issues at the AWC White Rock Water System. The proposed corrective actions cannot be completed within 120 days of the date of this letter. Accordingly, an interim plan for the purchase of supplemental water has been addressed below.

**Background**

***Water source supply***

The water sources for the White Rock System are comprised of three bedrock wells that have had historical issues with reliable yields. Per an investigation performed by Wright-Pierce in 2015, their research indicated that the original yields for Wells #1, #2 and #3 were 8 gpm, 13 gpm and 34 gpm, respectively. Over time, the well yields have steadily decreased, resulting in actions being taken to reestablish yields. Well #2 was deepened in 1998, from a depth of 350 feet to 900 feet (and hydrofractured), resulting in an increase in yield from 2 gpm to 12 gpm. In 2001, Well #1 was deepened from a depth of 426 feet to 1,080 feet, with no appreciable gain in yield. Since then, yields have continued to decline, and at this time, all three wells produce a combined yield of approximately 12-16 gpm.

The Wright-Pierce investigation was undertaken to identify potential new well sites around the Village Shore Estates area due to the problematic issues with well yields. The investigation noted that two bedrock test wells were drilled on Lot 61 (common space lot at Turee Pond), to depths of 195 and 250 deep. One of the two test wells had a yield of 23 gpm, but was not connected to the water system, presumably due to the potential cost of connection (pumping, treatment, etc.). Information on the second test well was not available. The remaining potential well sites identified in the investigation are off of the Village Shore Estates Property.

***System Storage***

The system has two 15,000-gallon buried steel atmospheric tanks, and are estimated to be approximately 50 years old. Recently, AWC noted significant discrepancies between the net meter readings on the supply and distribution sides of the tanks, and estimates a water loss of approximately 5,000 gallons per day. Further evidence of tank leakage is the noted presence of a chlorine residual in accumulated water within the tank bunker, when accumulation has been present.

***Supplemental Water Supply***

Due to the decreasing well yield and tank leaks, the AWC has been purchasing water from approved outside sources to meet the system demands while the issues remain to be resolved.

### **Corrective Actions**

#### ***Source Supply***

Action: Given the reduced yields and close proximity of the three existing wells, AWC does not recommend exploring a new well in the same location. AWC intends to work with the Village Shore Estates Homeowners Association to explore developing a new source on Lot 61, adjacent to Turee Pond. The development of a source on Lot 61 has its challenges, as the majority of the property is located within the FEMA Zone A, 100-year flood plain, and the new source would be located within 200 feet of a surface water. Potential use of a new source on the lot would include raising the well casing above the 100-year flood elevation, and additional sampling/testing during the pumping tests. The existing test wells would be explored for future development, prior to considering drilling new wells on the lot. A new source at the location would require new pumping facilities, and potentially treatment, depending on the findings of the water quality testing.

Schedule: Start Spring 2020

#### ***System Storage***

Action: AWC proposes to replace the two 15,000-gallon buried steel tanks with three 10,000-gallon buried concrete tanks. A preliminary layout plan for the tank replacement has been attached for reference. The siting of the tanks would allow for the installation and plumbing of the majority of the new system, prior to taking the existing tank system out of service, requiring only a brief system shutdown. Underground tanks are proposed due to the cost prohibitive nature of building an above grade structure to house new steel tanks.

Schedule: Survey, design, permitting and financing during late 2019 and early 2020. Construction to begin in Spring 2020, pending financing.

### **Interim Measures**

#### ***Supplemental Water Supply***

Action: AWC proposes to continue supplementing the system water supply, with purchased water that is delivered regularly, to meet demands. The AWC will continue to supplement the system supply with purchased water until demands can be met by replacement of the tanks, the implementation of a new source or both corrective actions.

Schedule: Ongoing

### **Conclusion**

The investigation and development of a new source will begin in the Spring of 2020, once winter conditions have subsided, and access to the area is possible. With winter approaching, Abenaki Water will make its best effort to collect the survey field data required to develop the design for the replacement of the tanks. We will coordinate our design and permitting efforts with the NHDES, NHPUC, the Town of Bow and the Village Shore Estates Homeowners Association.

Please contact me if you have any questions regarding the above information and proposed corrective actions. I can be reached at (860) 747-1665, or by email at [rgallo@newenglandservicecompany.com](mailto:rgallo@newenglandservicecompany.com).

Very Truly Yours,



Robert Gallo, P.E.

Abenaki Water Company/

New England Service Company

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**From:** Klevens, Cynthia  
**Sent:** Tuesday, December 3, 2019 6:13 PM  
**To:** 'RGallo@Newenglandservicecompany.com';  
dvaughan@newenglandservicecompany.com;  
NLaChance@NewEnglandServiceCompany.com  
**Cc:** 'Bresson, Cristy (Allianz Resolution Management US)'  
**Subject:** Corrective Action Plan Approval - Bow Abenaki (0262020)  
  
**Due By:** Friday, February 21, 2020 1:30 PM

Good Afternoon,

DES approves the attached Corrective Action Plan (CAP) received Oct 30, 2019 for correction of the Storage Tank and Source Capacity significant deficiencies (attached Inspection Report), based on the following timeline:

Nov 1, 2019 – Meeting with HOA members, Town of Bow, PUC and DES representatives to discuss system background, water supply and storage tank issues, corrective action plan, and funding options (completed).

Dec 2019 – Process DES Tank Inspection Grant to evaluate structural condition of existing steel tanks (in progress).

Feb 2020 – Obtain Approvals from PUC and DES SRF Emergency Loan Funding (in progress).

Mar 2020 – Order new Storage Tank Manufacturing (6 to 8 weeks lead time), and subject to DES approval of design plans.

May 31, 2020 – Complete installation and startup of new storage tanks and begin exploration of replacement well source.

Aug 1, 2020 – Complete new well drilling and temporary hookup, begin water quality compliance monitoring.

Oct 1, 2020 – Complete well permitting and permanent hookup.

The above milestones will be enforced as part of the Corrective Action Plan but can be adjusted with adequate justification and DES approval, in writing, as long as progress is being made to address these deficiencies. Please let us know any questions or comments and keep us informed of your progress.

Sincerely,

Cynthia M. Klevens, PE, Water Treatment and Small Systems Section Manager, (603) 271-3108

NHDES Drinking Water and Groundwater Bureau, P.O. Box 95, Concord NH 03302-0095

Cc pws file

## Abenaki Data Responses, Sets 1-3

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-1**

**Date of Response:** 6/29/20  
**Witness: Nick LaChance**

**Staff 1-1**

There appear to have been previous indications that one or both atmospheric storage tanks were leaking. In this regard:

a) Does the company still believe that to be the case?

Please fully explain the evolution of the company's efforts and understanding in this regard.

**Response:**

Based on the Mass Tank inspection report, previously submitted in testimony, it indicates that the storage tanks are not leaking.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-2**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-2**

Regarding testimony of Mr. Nicholas A. LaChance, p. 4, lines 10-14:

- a) What did the tank inspection cost?
- b) How much of the tank inspection cost was covered by grant money?
- c) What might have complete replacement of the tanks cost? Could replacement costs be covered by grant money?

**Response:**

- A) The actual inspection cost for both tanks, rendered by Mass Tank Inspections, was \$7,800. However, additional plumbing was necessary in order to isolate the tanks from one another so that they could be individually inspected while maintaining water service. The cost of plumbing to isolate the tanks from one another was \$11,769.53. Further, bulk water deliveries were necessary the day that the tanks were being plumbed to obtain the isolation capabilities, in addition to the first day of tank inspections. The two days of bulk water deliveries equated to \$3,210.
- B) The Company received a grant in the amount of \$8,000.
- C) Rough estimates indicate complete replacement and installation costs to be in excess of \$150,000. Grant money from either NHSRF or NHDWG programs would be unlikely as the Town of Bow exceeds the average household income amount for New Hampshire. The average household income number is a determining factor of obtaining forgiveness on State funds.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-3**

**Date of Response:** 6/29/20  
**Witness: Nicholas LaChance**

**Staff 1-3**

Regarding Attachment to the testimony of Mr. Nicholas A. LaChance, the Mass Tank inspection report:

Will recoating of tank exteriors occur only on exposed surfaces within the building? Please confirm or explain.

**Response:**

Yes, as the remaining portion of each of the tanks is buried into the side of a mound.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-4**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-4**

Did the company investigate the condition of the system's pressure tank? Please explain.

**Response:**

Yes, please refer to the tank inspection report previously submitted.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-5**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-5**

If a new treatment or other facility proves necessary at a different location due to the location of a new source, what is the likelihood the existing tanks would remain in service?

**Response:**

The existing tanks will remain in service regardless of where the new source is located. The existing tanks are adjacent to the existing arsenic treatment facility which will remain in place and necessary despite a new source. Both the tanks, and the existing treatment plant, work in tandem together.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-6**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-6**

Regarding inquiries about possible interconnections:

- a) Has any inquiry been made into possible interconnection with, for example, any of the nearby Bow schools (Bow Elementary School, Bow Memorial School (the Middle School), Bow High School) or the White Rock Senior Living Center in Bow (Pennichuck system)? Please explain.
- b) Has an inquiry been made to any Town of Bow officials or committees, for example, the Drinking Water Protection Committee, regarding an interconnection? Please explain.

**Response:**

- a) Yes, a prior discussion has taken place with Pennichuck, they do not have the capacity to serve the White Rock system. The Bow schools have minimal capacity and we suspect are unable to serve the White Rock system.
- b) A brief discussion has happened with the Town for an interconnection; however, the distance to effectuate such interconnection does not seem feasible.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-7**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-7**

Regarding testimony of Mr. Nicholas A. LaChance, p. 5, lines 7-9:

Does the system currently have any kind of supervisory control and data acquisition (SCADA) computer system or remote reporting to make the company aware of, for example, declining tank levels *before* tanks are depleted and customers report problems in the morning? Please explain.

**Response:**

No, the White Rock system presently does not have SCADA capabilities.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-8**

**Date of Response:** 6/29/20  
**Witness: Nicholas LaChance**

**Staff 1-8**

Regarding testimony of Mr. Nicholas A. LaChance, p. 4, lines 3-9 (including references to Mr. Robert J. Gallo's testimony) and p. 5, lines 12-18:

To what extent are the location of existing distribution valves in the system known?

**Response:**

The Company estimates that between 80-90% of the existing valve locations are known.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-9**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-9**

Regarding Attachments to Mr. Robert J. Gallo's testimony, Exhibit 2 "White Rock System Narrative" (first page at bottom):

Exhibit 2 states "Wright-Pierce engineering conducted a study in 2015 that identified several lots with potential source locations." Please provide a copy of the referenced 2015 Wright-Pierce study. Please identify the authors/contributors to the "White Rock System Narrative."

**Response:**

Bob Gallo wrote the "White Rock System Narrative". The Wright-Pierce study is attached as requested.

WHITE ROCK



TECHNICAL  
MEMORANDUM

---

TO: Alex Crawshaw  
Vice President  
Abenaki Water Company

DATE: June 11, 2015

FROM: Greg Smith, PG  
PROJECT NO.: 13194A

SUBJECT: Phase I - Rocky Point Drive Bedrock Well Source Investigation  
Bow, New Hampshire

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Per request of the Abenaki Water Company (AWC), Wright-Pierce (WP) has prepared the following Phase I hydrogeologic assessment of the Rocky Point Drive Bedrock Well Site (Site) to develop supplemental groundwater source capacity for the Rocky Point Drive Water System. According to NHDES records the system was formerly operated by the White Rock Water Company and has approximately 97 service connections that require approximately 43,000 gallons per day for the system. The location of the Site is shown on Figure 1. This assessment is based upon existing available well information identified in the New Hampshire Department of Environmental Services (NHDES) records and from information provided by the AWC. The available information was limited with little historical data available regarding groundwater exploration activities at the Site. However, sufficient data was available to assess the geology and identify favorable areas for groundwater exploration.

Historical NHDES records indicate that the wells at Site have shown declines in well yield over time. The original reported well yields for bedrock wells Nos. 1, 2 and 3 are 8, 13, and 34 gpm, respectively. Records indicate that a decline in well yield was observed as early as 1994. Well No. 2 was subsequently deepened in 1998 from a depth of 350 feet to 900 feet with an increase in the well yield from 2 gpm to 14 gpm and was hydrofractured to increase yield. However, some records indicate the yield of this well is 12 gpm. In 2001, Rocky Point's bedrock well No. 1 was deepened from 426 feet to 1,080 with no appreciable gain in yield. This well could not be hydrofractured due to reported well stability issues.

### Geologic Conditions

#### *Bedrock Geology*

According to the "Bedrock Geologic Map of New Hampshire," (Bennett, D.S., Wittkop, C.A. and Dicken, C.L., 2006), the site is underlain by the Upper Rangeley Formation which predominantly consists of a pelitic schist (primary rock type), and a metasedimentary rock (secondary rock type).

Bedrock east of the Site is mapped as the Lower part of Rangeley Formation (Sru) and the Concord Granite (Dc1m) is mapped west of the Site. The area to the north and west of the Site is mapped as the Perry Mountain Formation (Sp) consisting of gray quartzites and schists. A large

northeast/southwest trending fault complex is located several miles south of the site (Figure 2).

#### *Bedrock Fracture/Lineament Analysis*

A fracture trace or lineament analysis was performed as part of our assessment of the underlying bedrock structure in the vicinity of the Site. Lineaments are linear or curvi-linear surficial expression of potentially fractured bedrock. Lineaments may also result from the expression of cultural features or mark the direction of the last glacial advance. Bedrock outcrops can provide information on bedding orientation and provide insight into potential structural trends in the underlying bedrock; however, bedrock outcrops were not observed during field reconnaissance.

A lineament analysis was performed on digital elevation model (DEM) data and high resolution aerial photographs in the vicinity of the Site. Multiple lineaments were identified that were oriented parallel to the most recent advance of the glaciers indicating that these linear features more likely represent variations in lithology and are less likely to represent fractured bedrock aquifers.

Coincident lineaments were identified using aerial photographs and digital elevation model data as part of this effort. These lineaments were compared with published USGS large scale mapping lineament data to identify probable locations for constructing a well in a fractured bedrock aquifer. Coincident lineaments, USGS lineaments and the DEM are shown on Figure 3. Several of these coincident lineaments appear to be of a very similar orientation to the mapped fault located to the south of the site and may represent a smaller subset of faults associated with the same system. Furthermore, a second set of lineaments was identified to be approximately perpendicular to the mapped fault and may represent fracture zones associated with the faulting.

The USGS has developed a bedrock well probability map for the state of New Hampshire. This map is based on multiple variables that include slope, topography, lineaments, bedrock and surficial geology. This map indicates a generally low probability for a high yield bedrock well over the majority of the water system area with the exception of northern portions of the system adjacent to Turee Pond (Figure 4).

#### *Surficial Geology*

Based on review of information published by NHDES and the USGS, a significant aquifer is mapped in the area northwest of the Site and apparently extends onto lower portions of the property. Evidence of this aquifer is further supported by test well logs observed for bedrock wells drilled on Lot 61. These logs indicate that the saturated thickness is as great as 35 feet; however, the wells were drilled as bedrock wells and the soils were not tested or logged in detail. Aquifer mapping indicates that the estimated transmissivity ranges from 1,000 and 4,000 ft<sup>2</sup>/day. According to the USDS NRCS soils mapping for the area, the soils consist of a well-drained, very fine sandy loam. Mapped stratified drift aquifers are shown on Figure 5.

## **Existing Well Construction and Water Quality**

### *Well Construction*

According to the NHDES records, the Rocky Point Drive Well Nos. 1, 2 and 3 are located on tax map B-4, Lot number 60-M and were drilled to depths of 1080 feet, 900 feet, and 420 feet below ground surface (bgs), respectively. Depth to bedrock ranged between 49 feet and 75 feet bgs. According to the well drilling notes, the highest test yield was 35 gpm from the well located along the southern property boundary (Figure 6). Bedrock well No. 4 (depth 1045) is also located on the same property and was reported to yield 25 gpm, but is not in service. The reason that this well is not used as a supply source for the system is unknown; however, it is unlikely that reactivating the well will provide additional capacity for the water system. ?

According to NHDES records, two relatively shallow test bedrock wells (195 and 250 feet deep) were drilled on Lot 61. One of the two test wells had a yield of 23 gpm, but was not connected to the water system, presumably due to infrastructure costs associated with connecting to the treatment system. Water quality data was not observed for this test well.

### *Water Quality*

The existing Site is registered as a Small Community Public Water Supply Water with NHDES. The water withdrawn from the existing wells is treated for elevated arsenic concentrations. It is likely that a bedrock well source located in the same bedrock formation will have similar water quality to that of the existing wells. However, it should be noted that in some cases water quality can vary significantly in bedrock aquifers drilled in the same rock type.

## **Environmental Considerations**

Based on a file review at NHDES and review of the NHDES OneStop online database, One Remediation Site was identified within a one mile radius of the Site. The Bow landfill (NHDES Site # 198400064) is located approximately 4,000 feet northeast of the Site (Figure 2). Other environmental factors also have the potential to impact the water quality of the regional bedrock aquifer. These include; local agricultural practices and subsurface wastewater collection systems.

## **Favorable Site Selection**

Several properties were identified with favorable potential for the development of a new groundwater source for the Rocky Point Water System and are shown on Figure 6. Multiple large properties owned by the Town of Bow are in the area and are in conservation. These properties were excluded as favorable properties due to the unlikelihood of property transfer and incompatibility of conservation land with the development of a new water supply. The following is a summary of each favorable property and the selection criteria used:

- Lot 62 – This site shows good potential for the development of a new bedrock well source and is located reasonably close to the existing treatment system. Multiple lineaments pass through this property that appear to not be associated with the existing bedrock supply wells for the system indicating good potential for additional well yields.

- Lot 62E – This site shows similar potential to that of Lot 62 for the development of bedrock well source to increase capacity. This property is located somewhat farther from the treatment system, however the property may offer greater potential for the development of a bedrock well. This property also has a small portion mapped as sand and gravel aquifer that may be developed as a replacement source that may require minimal treatment.
- Lot 115 – This property is located in close proximity to the existing water treatment facility and as such has a lower cost to connecting a new well to the system. Several lineaments pass through this property and it appears to have as good a potential for the development of additional system capacity from a bedrock well as Lots 62 and 62E.
- Lot 61 – This property shows good potential for the development of both bedrock and sand and gravel well sources. However, given the location of the property, a bedrock well source at the site may not be feasible given the infrastructure and operating costs to connect a new well source to the treatment system. There is potential that a standalone sand and gravel source may be developed at the site that may require minimal treatment to meet water quality standards.
- Lot 58K – This lot appears to have the least favorable conditions for the development of additional groundwater capacity for the system. Furthermore the bedrock fractures at this site have a higher probability of being associated with the bedrock aquifer utilized by the water system's existing bedrock wells. However, if the land owner is willing to work with the water system, this property may be worth exploring if other options are not available.

### Conclusions and Recommendations

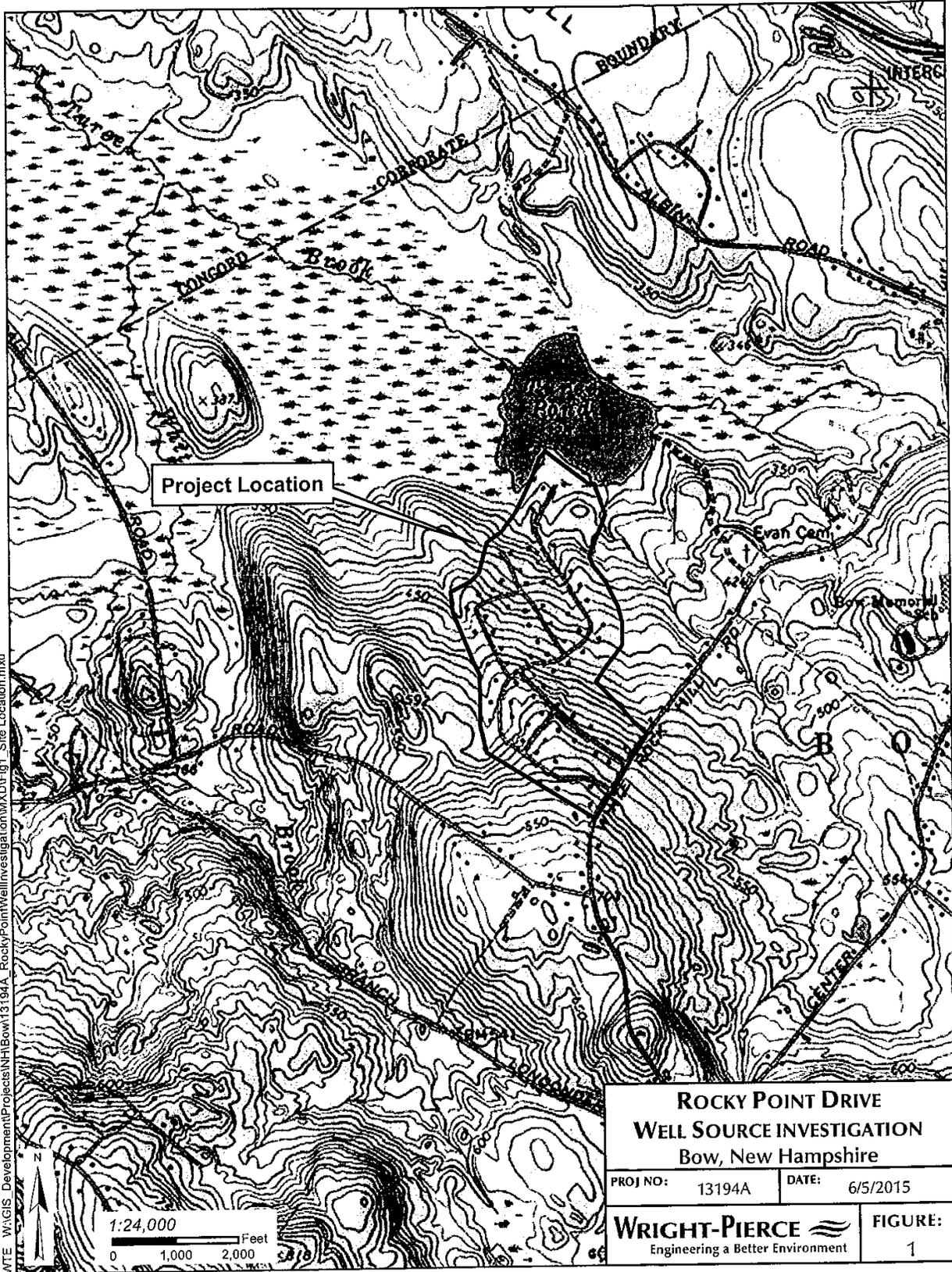
The following is a summary of our conclusions and recommendations regarding the additional groundwater source for the Rocky Point Drive Water System:

- Five properties were identified with the potential to develop a new well source to increase capacity of the Rocky Point Drive Water System. Only one of these properties (Lot 61) appears to be readily accessible for exploration and appears to be designated open space for the development. The other properties (Lot 62, 62E, 115 & 61) all appear to be privately owned and will require engaging the property owners for access.
- The water system has undergone continual decline in well yield since development in 1987. The decline continued in wells that were deepened to expand capacity indicating that the fracture system that the wells are drawing on is being over pumped. There is a high probability that the decline in well yield will continue through time resulting in greater system deficiency in the future.
- Lineament analysis of aerial photographs and the available DEM indicate a strong correlation of observed coincident lineaments to the mapped fault located south of the site. Favorable properties identified as Lots 62, 62E and 115 appear to have good potential for developing additional capacity for the water system by developing a new bedrock well source.
- Potential exists that a source may be developed in the mapped sand and gravel aquifer

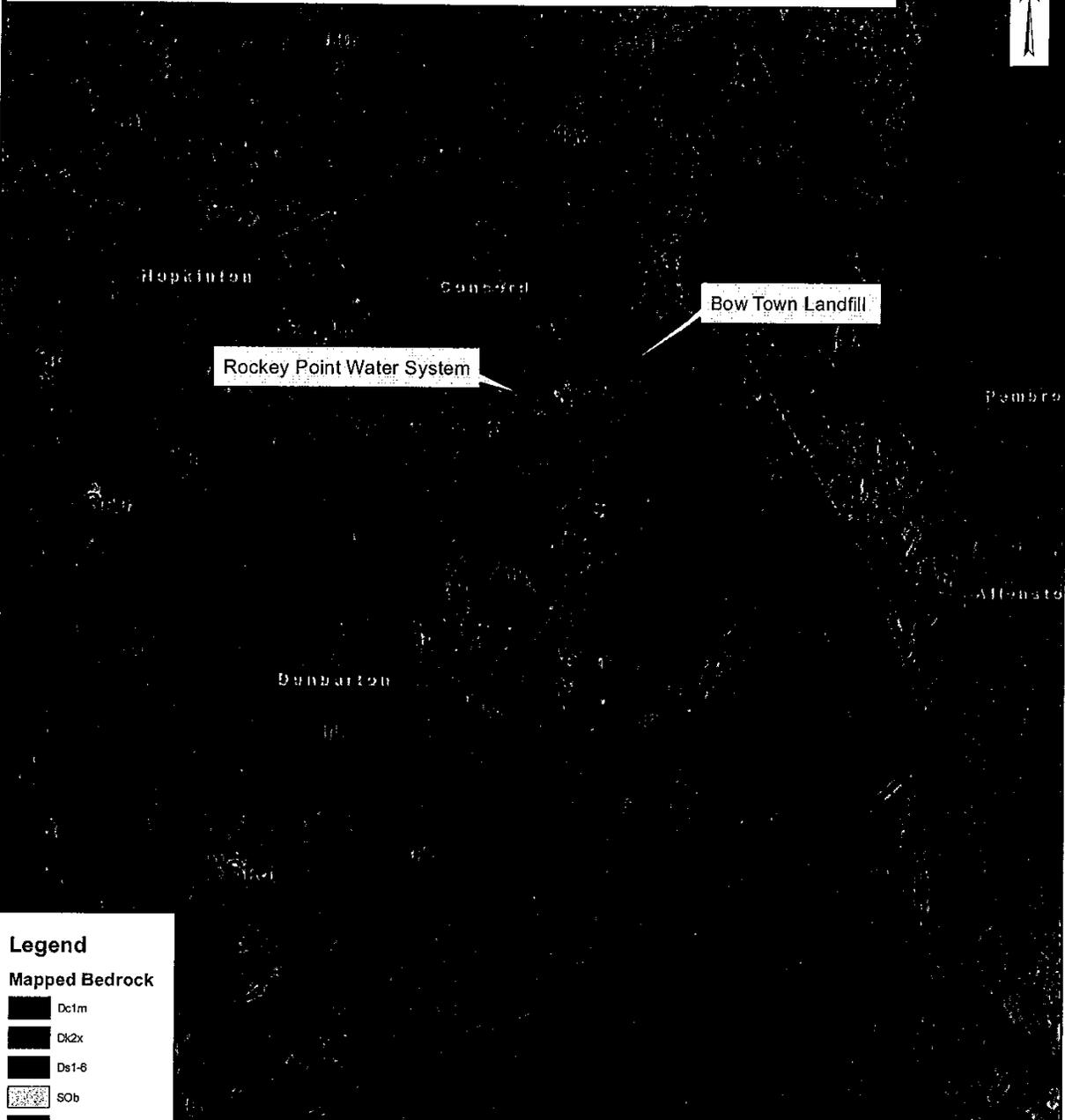
located on Lots 61 and 62E. It may be possible to develop a new well source capable of replacing the existing bedrock wells and requiring minimal treatment. The location of the wells would be at the lowest point in the system. However, a new source requiring minimal treatment may be equal to or less than the costs of the existing system configuration considering the treatment for arsenic and the very large drawdowns in the existing wells. A portion of Lot 61 property is mapped as prime wetland. It appears that this is the extension of the 150 foot buffer from Turee Pond and it appears feasible that a source could be developed outside of this zone given the property geometry and required protective radius for a well source. Some limited research at the Bow Town Hall is required regarding the potential impacts of the prime wetlands designation if development of this source is to be perused.

Based on the findings of the Phase I hydrogeologic assessment, Wright-Pierce recommends the following steps as part of future groundwater exploration activities:

- 1) Determine whether the development of additional capacity from a bedrock source or a replacement sand and gravel source is the best option for the system. This can be accomplished by a limited assessment based on known operating costs of the system compared to estimated costs of a stand-alone sand and gravel source with minimal treatment.
- 2A) Approach the property owners regarding property access for groundwater exploration activities. A prudent course of action is to obtain an option agreement with the property owner for future purchase if a groundwater source can be developed on the property.
- 2B) Electrical resistivity geophysical surveys are highly recommended for bedrock well exploration. The surveys can significantly increase the success rate and reduce overall costs of the project by identifying precise drilling locations. These surveys could be performed prior to an option agreement as a screening tool before investing significant effort in a property.
- 3) Conduct a test drilling program to determine the potential for the development of a new groundwater well. This task would include logging borings, short term pump testing, limited water quality analysis, and a submittal of Preliminary Report for Small Community Well Approval to the NHDES. NHDES recommends that a water conservation plan be submitted (if one is not on file) prior to permitting the well and recommends that the water conservation plan be submitted in parallel with the Preliminary Report for Small Community Well Approval.



Source:  
 1. Bedrock geology information obtained from the New Hampshire GRANIT online database.  
 2. Town line information, Aquifer Overlay and the Site Property boundary obtained from the CAIGIS ArcGIS online database.  
 3. Map developed by Wright-Pierce GIS Dept.



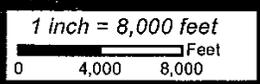
XYZ W:\GIS\_Development\Projects\NH\Bow\13194A\_RockyPointWellInvestigation\MXD\Fig2\_BedrockGeology.mxd

**Legend**

**Mapped Bedrock**

- Dc1m
- Dk2x
- Ds1-6
- SOb
- Sm
- Sp
- Srl
- Srl
- Sru
- Ssf
- ZnZ

Bedrock Faults



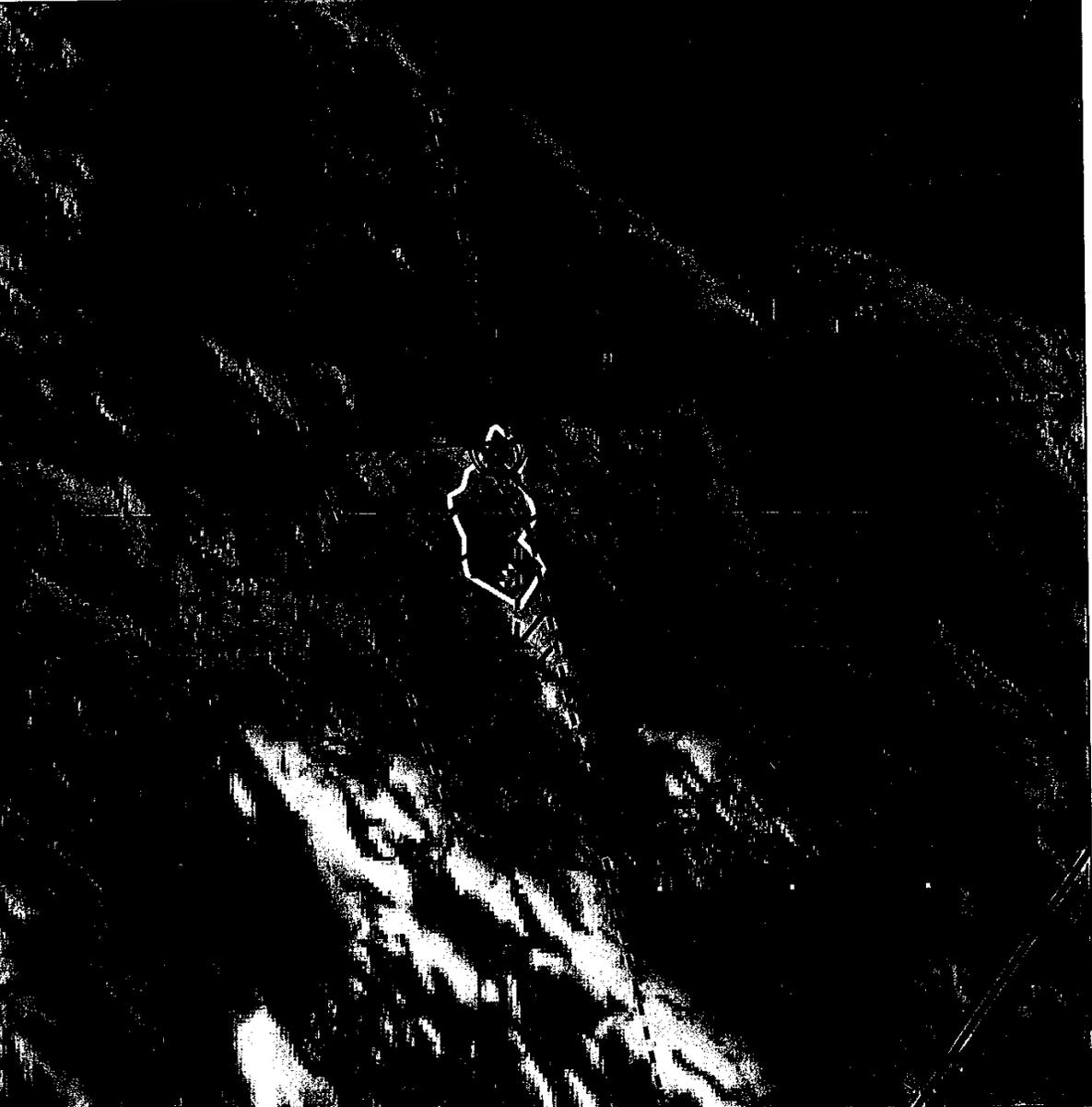
Source: Esri, DigitalGlobe, GeoEye, Aero

<b>Bedrock Geology &amp; Mapped Faults</b>	
Rocky Point Drive Bow, NH	
PROJ NO: 13194A	DATE: 6/11/2015
<b>WRIGHT-PIERCE</b> Engineering a Better Environment	<b>FIGURE:</b> 2

Source:  
1. Digital Elevation Model (DEM) and Bedrock Fault information obtained from the New Hampshire GRANIT online database.  
2. Town line information obtained from the CAIGIS ArcGIS online database.  
3. USGS mapped lineament information based on USGS map titled "Lineament Map of Area 6 of the New Hampshire Bedrock Aquifer Assessment, Central New Hampshire".  
4. Map developed by Wright-Pierce GIS Dept.



WTE \\GIS\_Development\Projects\NH\Bow13194A\_RockyPointWellInvestigation\MXD\Fig3\_LineamentAnalysis(DEM).mxd



**Legend**

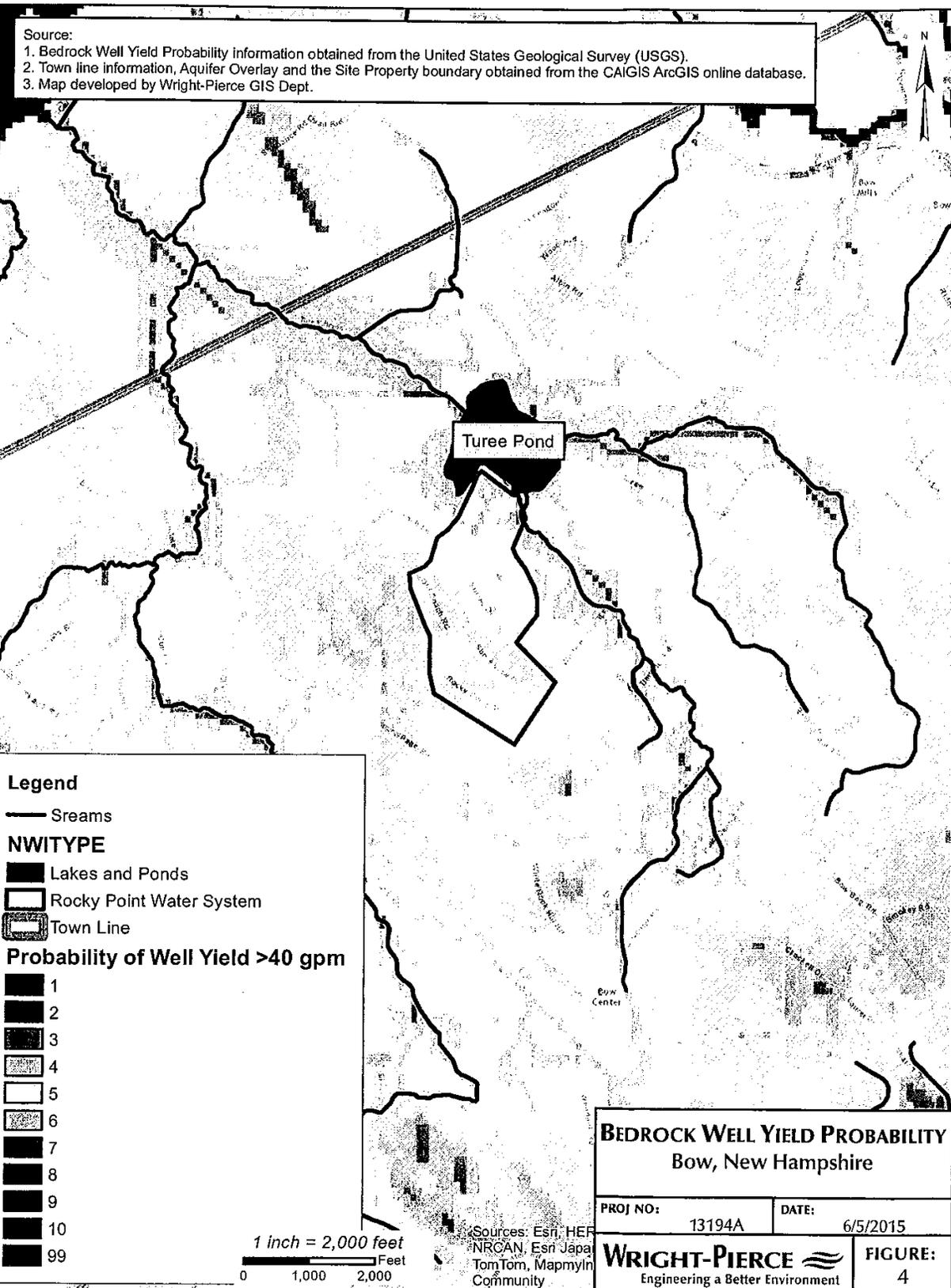
- Coincident Lineaments
- - USGS Mapped Lineament
- Bedrock Faults
- Rocky Point Water System

1 inch = 3,500 feet

<b>LINEAMENT ANALYSIS</b>	
Digital Elevation Model (DEM)	
Bow, New Hampshire	
PROJ NO: 13194A	DATE: 6/10/2015
<b>WRIGHT-PIERCE</b> Engineering a Better Environment	FIGURE: 3

Source:  
 1. Bedrock Well Yield Probability information obtained from the United States Geological Survey (USGS).  
 2. Town line information, Aquifer Overlay and the Site Property boundary obtained from the CAIGIS ArcGIS online database.  
 3. Map developed by Wright-Pierce GIS Dept.

XYZ: W:\GIS\_Development\Projects\NH\Bow\13194A\_RockyPointWellInvestigation\Map\DiFig4\_bedrock\_prob\_map.mxd



**Legend**

- Streams
- NWITYPE**
- Lakes and Ponds
- Rocky Point Water System
- ▭ Town Line
- Probability of Well Yield >40 gpm**
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 99

1 inch = 2,000 feet  
 0 1,000 2,000 Feet

**BEDROCK WELL YIELD PROBABILITY**  
 Bow, New Hampshire

PROJ NO: 13194A      DATE: 6/5/2015

**WRIGHT-PIERCE**  
 Engineering a Better Environment

**FIGURE:**  
 4

Sources: Esri, HERE, DeLorme, Mapbox, TomTom, Swatch, MapmyIndia, © 2015

Source:  
1. Town line information, Aquifer Overlay and the parcel line information obtained from the CAIGIS ArcGIS online database.  
2. Existing well locations are approximate and are based on information obtained from the New Hampshire Department of Environmental Services (NHDES) OneStop Online database.  
3. Map developed by Wright-Pierce GIS Dept.

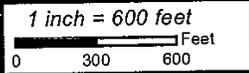


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**Legend**

- Existing Wells
- Stratified Drift Aquifer



Source: Esri, DigitalGlobe, GeoEye, Aero

Mapped Aquifers  
Rocky Point Drive  
Bow, New Hampshire

PROJ NO:	13194A	DATE:	6/5/2015
<b>WRIGHT-PIERCE</b>		<b>FIGURE:</b>	
Engineering a Better Environment		5	

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-10**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-10:**

Please provide an update on the current extent of community awareness, involvement and/or support for this project, by task (relining the tanks, installing distribution values, finding and developing a new source).

**Response:**

A meeting was held at the Town Library at year end 2019 to discuss the water outages and a game plan to fix the issues. At that time members of the community, along with representatives from DES, PUC and the Association Manager were present to discuss and ask questions of the Company pertaining to the steps it would take to provide a safe and reliable water service going forward. The Company presented that several issues exists; namely source capacity, storage and distribution. Parties present at this meeting seemed to be aware of and understanding of the need for each of these issues to be addressed.

After filing this instant petition docket, the Association Manager was contacted to alert her of the filing. She asked some general questions and seemed to be supportive of the Company's direction. She has also indicated that she will attend the July Board of Selectmen meeting for the Town of Bow in support of our initiatives.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

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**Date Request Received:** 6/15/20  
**Staff 1-11**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-11:**

Regarding the installation of distribution valves:

How many distribution valves does the Company intend to install, where would those valves be installed, and at what cost per valve?

**Response:**

The Company expects to install approximately 4 valves whose location is presently being evaluated in conjunction with field operators. The cost per valve is estimated to be approximately \$10,000 per valve.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-12**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-12:**

Regarding the vendor to be used to reline the tanks:

- a) Has Abenaki selected a vendor to reline the tanks?
  - a. If so, please identify the vendor, provide the basis for choosing that vendor, indicate whether the selection process was competitive, and when that vendor could begin the work.
  - b. If not, please describe the bidding process and selection criteria that will be used to select the vendor, indicate how Abenaki will ensure that the price will be competitive, and provide an estimate for the amount of time it will take to complete the selection process.

**Response:**

Yes, the selected vendor is AmTech Tank Lining & Repair. The Company solicited quotes from qualified vendors with AmTech being the low bidder. The vendor could begin the work once the Company has received PUC and final DES approval of the SRF financing.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

---

**Date Request Received:** 6/15/20  
**Staff 1-13**

**Date of Response:** 6/29/20  
**Witness:** Bob Gallo

**Staff 1-13:**

How long will it take to reline the tanks and during what seasons/timeframe is it possible for Abenaki to do this work?

**Response:**

Each tank will require 2 days of down time, we will keep 1 tank in operation at all times. We would anticipate the work being completed in the fall, if the required approvals have been received. If not, the work would be scheduled for early spring.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

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**Date Request Received:** 6/15/20  
**Staff 1-14**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-14:**

Regarding the impact of the repair process by task (relining the tanks, installing distribution valves, finding and developing a new source) on customers:

- a) How will Abenaki communicate notice to customers about possible low-water pressure and water shutoffs during the repair process?
- b) How much lead-time will Abenaki provide to customers regarding up-coming repair work?
- c) Please provide an estimate of the amount of time customers might experience low-water pressure or water shutoffs during the repair process.

**Response:**

Abenaki will coordinate such construction and repair work in a fashion to minimize customer impacts as much as possible.

- a) Abenaki will take a three-pronged approach to notifying its customers of possible low-water pressure and/or water shutoffs. First, it'll utilize its emergency alert systems to send texts messages, pre-recorded voice messages and emails alerting customers of the potential service concerns. Secondly, the Company will utilize its website to provide customers with real time updates, as well as providing notice of when construction will begin. Lastly, we'll be able to lay out the series of construction dates in a bill insert to go accompany the monthly utility invoices.
- b) It would be reasonable to expect that a notice of one week will be given, at a minimum, prior to the start of construction that may imply service concerns.
- c) The potential for water shutoffs exists for potentially 4 – 6 hours per valve installation.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

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**Date Request Received:** 6/15/20  
**Staff 1-15**

**Date of Response:** 6/29/20  
**Witness:** Stephen P. St. Cyr

**Staff 1-15:**

Please refer to the testimony of Mr. Stephen P. St. Cyr p. 2 line 5-7, (“[The \$400,000 maximum financing inclusive of] projected amounts are estimated and subject to change once the Company begins to explore for the new source.”):

- a) Because the Drinking Water State Revolving Fund (DWSRF) loan is limited to a \$400,000.00 maximum, will the amount of capital expenditures on the project remain below the \$400,000 limit? If not, how would Abenaki fund capital expenditures above the \$400,000 limit?
- b) Abenaki has submitted a Form E-22 for the projects proposed in this financing, *see* Puc 609.12. Please confirm that Abenaki will continue to submit timely, relevant forms, including Form E-22s, for additional capital expenditures related to White Rock for this project in the future, if necessary.

**Response:**

- a) The goal is to expend no more than the \$400,000 maximum. If the amount should exceed \$400,000, Abenaki would have to consider whether some aspect of the project could be delayed. Abenaki would also consult with the NHDES to see if additional DWSRF are available. Abenaki has access to line of credit with CoBank. Abenaki could potentially borrow from its parent company, NESC. Abenaki would consider all possibilities.
- b) Yes.

**DW 20-088**  
**ABENAKI WATER COMPANY, INC.**  
**WHITE ROCK DWSRF FINANCING**  
**Company Response to Staff Data Requests- Set 1**

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**Date Request Received:** 6/15/20  
**Staff 1-16**

**Date of Response:** 6/29/20  
**Witness:** Nicholas LaChance

**Staff 1-16:**

Regarding the testimony Mr. Stephen P. St. Cyr, p. 2, lines 6-9, and the need for bulk water purchases to replenish the water supply:

Please provide the average number of deliveries and average number of gallons of water delivered per week.

**Response:**

Mr. St. Cyr's testimony indicates "the dramatic need for bulk water purchases to replenish the water supply during water leaks." This statement is true and continues to be true as bulk water deliveries were received in May of 2020. The nature of the deliveries is sporadic, typically occurring when there is a distribution system leak. The average number of deliveries and number of gallons per week would not be indicative of the condition of the system. Nor would it properly illustrate the dire need to increase source capacity. Rather, the well's yield versus production, which has been previously outlined, illustrates the consequences of distribution leaks. These consequences are validated by the need for bulk water deliveries during these occurrences.

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**White Rock SRF Financing**  
**Company Response to Staff Data Requests – Set 2**

---

**Date Request Received:** 7/8/20  
**Staff 2-1**

**Date of Response:** 7/22/20  
**Witness: Bob Gallo**

**Staff 2-1**

Staff's data request 1-1 noted there appear to have been previous indications that one or both 15,000 gallon atmospheric storage tanks were leaking. This is evident from: information for customers on the Abenaki Water Company (Abenaki or Company) website last fall; an in-person meeting between Staff and Abenaki in December 2019; and the May 14, 2020 letter of support from NHDES. The belief that one or both tanks may have been leaking presumably played a significant role in the Company's decision to inspect the tanks. The result of the inspection is that the Company is now on the hook for a \$45,000 relining project in addition to the other expenditures anticipated in the docket. See Company data response 1-2 (cost of inspection); Petition, St. Cyr testimony, Schedule SPS 5 (estimated cost of relining).

While the Company's reasoning may have been legitimate (especially in light of the ongoing, significant water shortage issues), and the current docket does not involve a final, detailed prudence review, Staff is nonetheless left with a hole in its understanding of the appropriateness of the Company's decisions and request for financing in relation to this one task.

In this regard, please indicate the following:

- a) Whether and when the Company believed that one or both atmospheric storage tanks was leaking;
- b) The reasons for that belief (please be specific);
- c) What efforts (apart from the tank inspection described in the Mass Tank Inspection Report dated March 2, 2020) were undertaken to confirm or substantiate that belief;
- d) How long the Company expects the tanks to last once relined;
- e) What is the impact on the tanks if any, of the tanks having been scraped bare internally in February, and remaining unlined until fall or next spring (response to Staff 1-13)? For example, will tank life be shortened?

**Response:**

- a) The Company believed that one or both of the tanks were leaking. The Company initially thought the tanks were leaking in late October 2020. Leak detection did not indicate leaks on the distribution mains. The tanks were subsequently inspected.
- b) Discrepancies between the meter readings on the production meter and outgoing distribution meter was one indication that the tanks may have been leaking. Tank levels were dropping consistently, and did not correlate with typical daily production. Bulk water deliveries were required approximately 2-3 times per week, and leak detection did not indicate significant leak on the distribution mains.
- c) The embankments on either side of the tanks were observed to see if any potential leakage was surfacing that could be tested for a chlorine residual. Leak detection on the distribution mains was performed to see if the leak may have been on the distribution mains, and no leaks were confirmed. The existing shutoff valves on each tank were not operational, so the tanks could not be isolated to determine which one could be potentially leaking. The Company had the bunker/tank plumbing replaced so the tanks could be isolated from each other, to determine if there was a potential leak in either one.
- d) The Company expects that the tanks will last approximately another 35 years before a proactive replacement of the them will occur, rather than waiting for failures to precipitate the replacements. Per pages 13 and 15 of the MassTank inspection report, Tank #1 is the one with the greater section loss, with the thinnest component thickness of 0.325 inches. The annual section loss due to corrosion is expected to be approximately 0.0011 inches. Per UL 58, as referenced in the report, the tank shells and heads require a minimum thickness of 0.281 inches. The reserve section loss is 0.0440 inches. Considering the reserve thickness and expected yearly corrosion, there is approximately 40 years of life remaining before reaching the minimum thickness per UL 58. The proposed liner will have a 7-year warranty. The 35 years noted above is likely a conservative estimate.
- e) The tank integrity under the bare condition will not be appreciably diminished during the period prior to lining. Per pages 13 and 15 of the MassTank inspection report, the expected section loss due to corrosion per year is 0.0011 inches for Tank #1, and 0.0010 inches for Tank #2. The thinnest measured component thickness for Tank #1 was 0.325 inches, and 0.328 inches for Tank #2. The minimum allowable thickness per UL 58, as noted in the report, is 0.281 inches. If one year is considered the time lapse between cleaning and lining, 2.5% of the reserve thickness for Tank #1 will be corroded, and 2.1% for Tank #2.

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**White Rock SRF Financing**  
**Company Response to Staff Data Requests – Set 2**

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**Date Request Received:** 7/8/20  
**Staff 2-2**

**Date of Response:** 7/22/20  
**Witness: Bob Gallo**

**Staff 2-2**

The response to Staff 1-4 references Nicholas A. LaChance's attachment to his testimony, filed with the Petition (June 2, 2020), i.e. the Mass Tank Inspection Report dated March 2, 2020, and indicates that the report includes an inspection of the system's 5,000 gallon hydropneumatic (pressure) tank. However, the referenced Mass Tank Inspection Report makes no mention of the pressure tank. (Staff understands the system to have only two 15,000 gallon atmospheric storage tanks and one 5,000 gallon hydropneumatic or pressure tank). In this regard, please indicate:

- a) Whether and if so, when, the 5,000 gallon pressure tank has been inspected for leakage or overall condition;
- b) The results of any such inspection(s), including copies of any report(s);
- c) If not inspected per the report dated March 2, 2020, why the pressure tank was treated differently than the two 15,000 gallon atmospheric tanks in this regard.
- d) The potential consequences of pressure tank failure in light of the extended life of the atmospheric tanks.
- e) Whether the Company has concerns about the pressure tank's performance or condition, what they are, and whether those concerns are on-going?

**Response:**

The pressure tank was abandoned some time ago, and is no longer connected to the system. Inquires a-e above are not applicable, as the tank is not utilized.

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**White Rock SRF Financing**  
**Company Response to Staff Data Requests – Set 2**

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**Date Request Received:** 7/8/20  
**Staff 2-3**

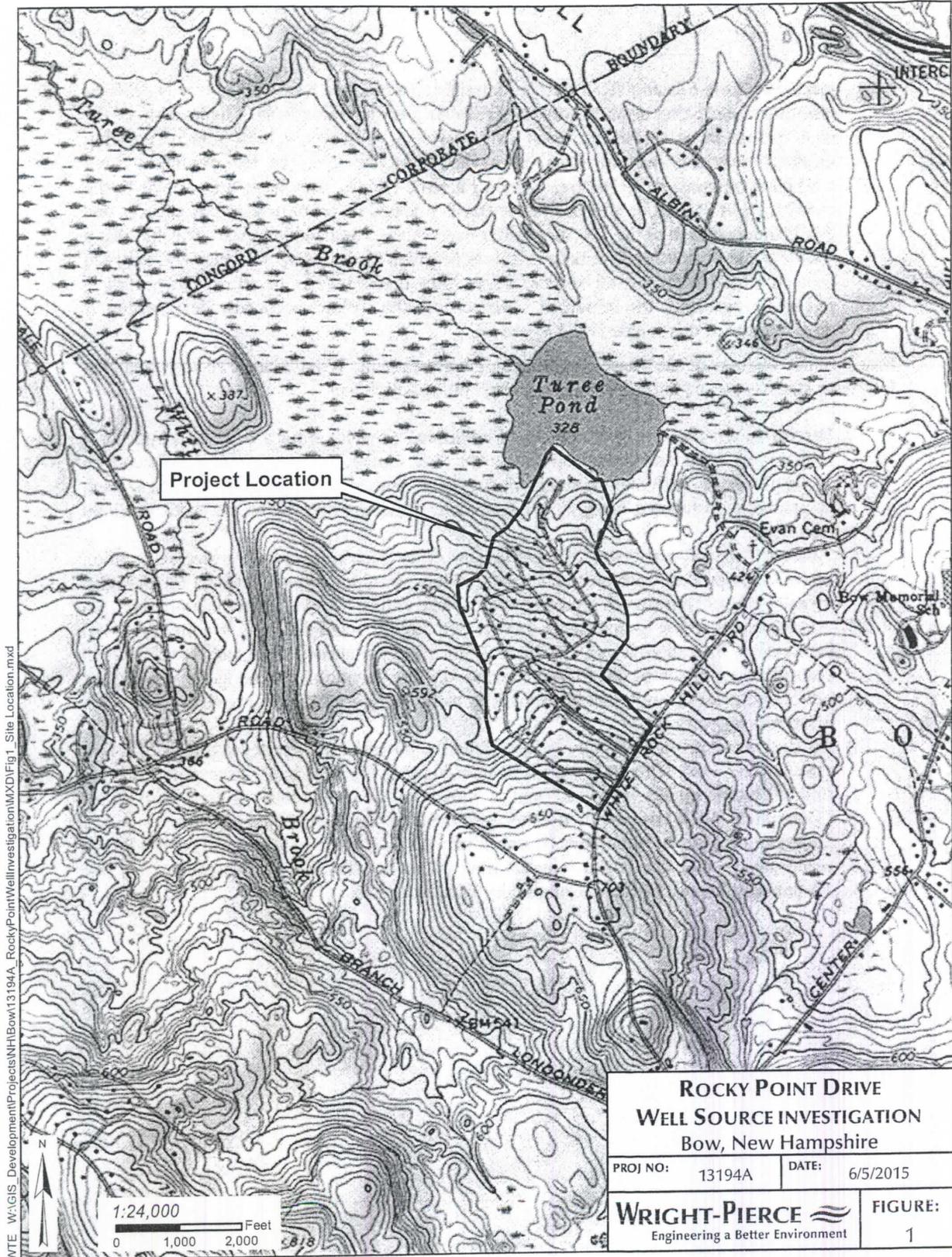
**Date of Response:** 7/22/20  
**Witness: Bob Gallo**

**Staff 2-3**

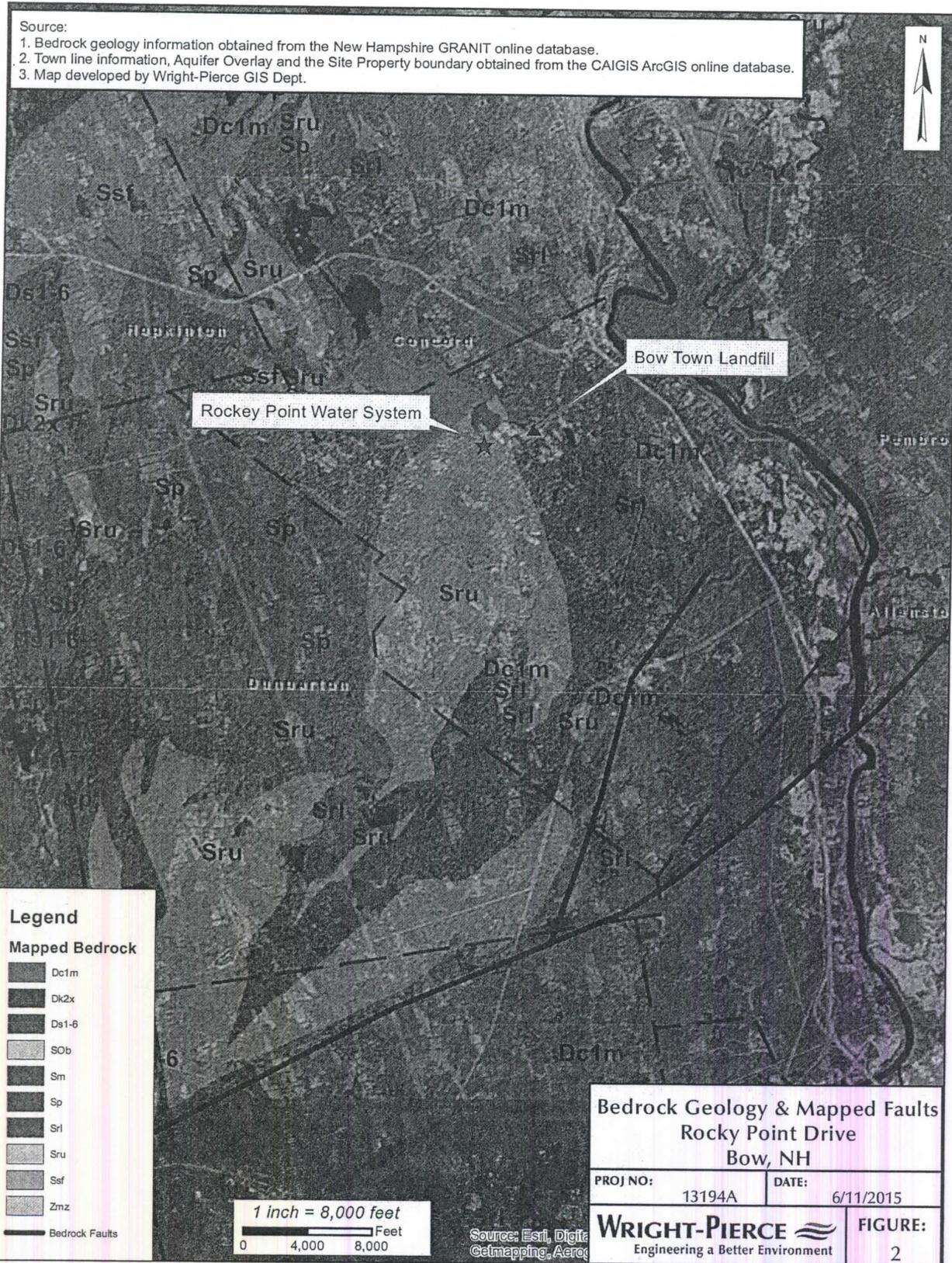
Regarding the response to Staff 1-9 Attachment (the Wright-Pierce study), pages 6-10 are not legible. Please provide a legible color copy of pages 6-10 of that Attachment.

**Response:**

A higher resolution scan of the previously submitted document has been provided. A color version of the report is not available.



Source:  
 1. Bedrock geology information obtained from the New Hampshire GRANIT online database.  
 2. Town line information, Aquifer Overlay and the Site Property boundary obtained from the CAIGIS ArcGIS online database.  
 3. Map developed by Wright-Pierce GIS Dept.

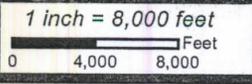


**Legend**

**Mapped Bedrock**

- Dc1m
- Dk2x
- Ds1-6
- SOb
- Sm
- Sp
- Srl
- Sru
- Ssf
- Zn

Bedrock Faults



Source: Esri, DigitalGlobe, GeoEye, Aero

**Bedrock Geology & Mapped Faults**  
**Rocky Point Drive**  
**Bow, NH**

PROJ NO:	13194A	DATE:	6/11/2015
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**WRIGHT-PIERCE**   
 Engineering a Better Environment

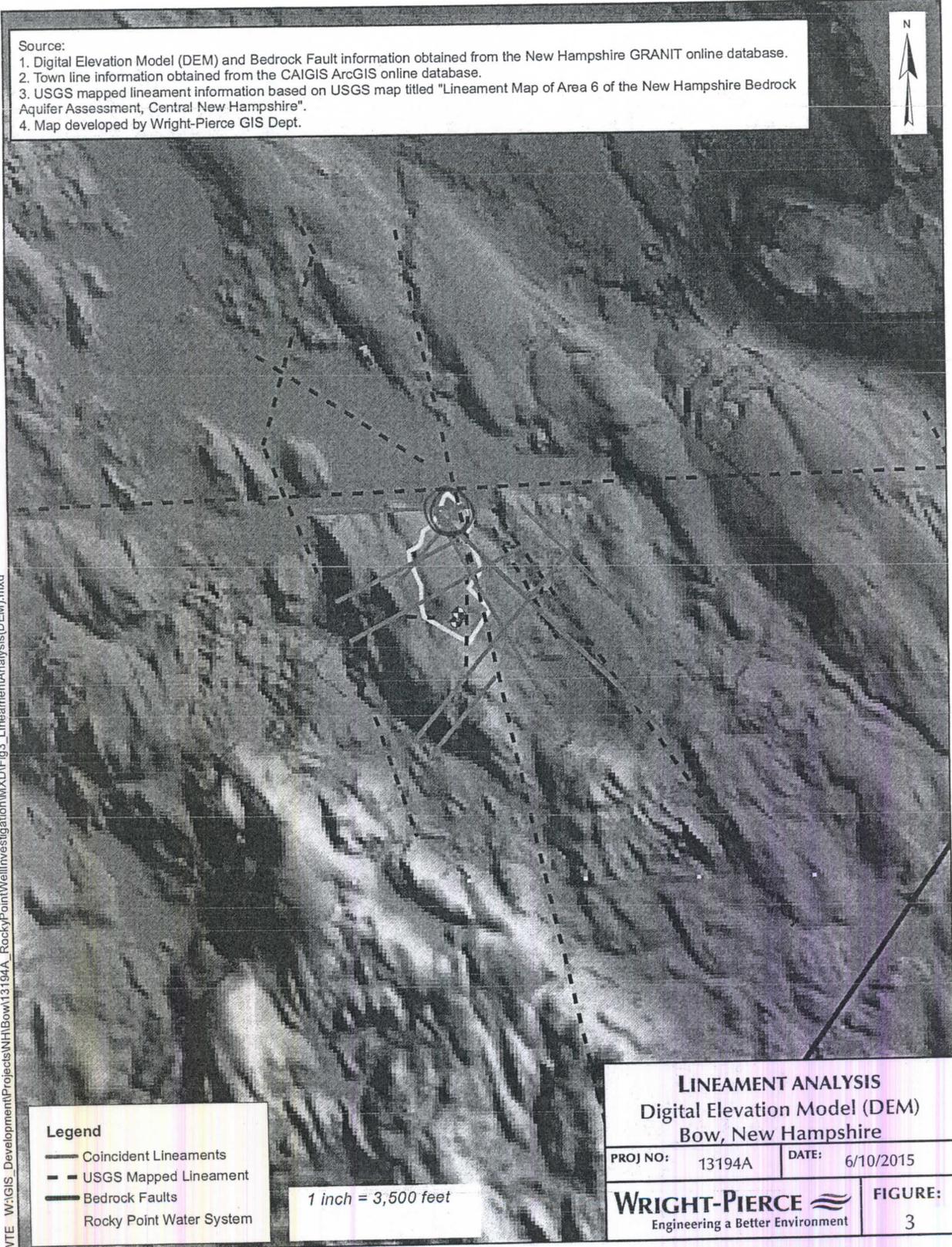
**FIGURE:**  
2

XYZ: W:\GIS\_Development\Projects\NH\Bow\13194A\_RockyPointWellInvestigation\MXD\Fig2\_BedrockGeology.mxd

Source:  
 1. Digital Elevation Model (DEM) and Bedrock Fault information obtained from the New Hampshire GRANIT online database.  
 2. Town line information obtained from the CAIGIS ArcGIS online database.  
 3. USGS mapped lineament information based on USGS map titled "Lineament Map of Area 6 of the New Hampshire Bedrock Aquifer Assessment, Central New Hampshire".  
 4. Map developed by Wright-Pierce GIS Dept.



WTE W:\GIS\_Development\Projects\NH\Bow\13194A\_RockyPointWellInvestigation\WXDI\Fig3\_LineamentAnalysis(DEM).mxd

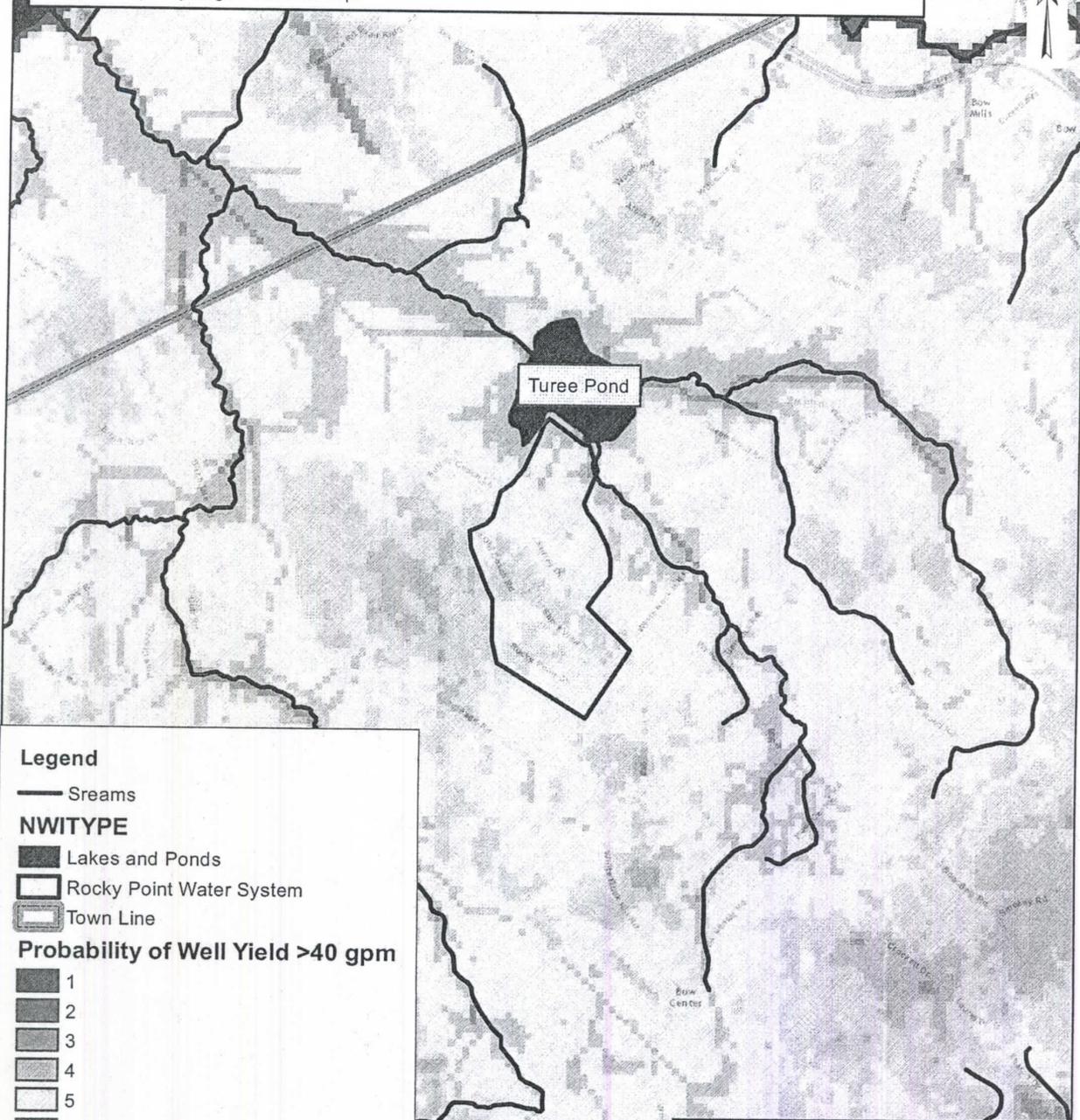


- Legend**
- Coincident Lineaments
  - - - USGS Mapped Lineament
  - Bedrock Faults
  - Rocky Point Water System

1 inch = 3,500 feet

<b>LINEAMENT ANALYSIS</b>	
Digital Elevation Model (DEM)	
Bow, New Hampshire	
PROJ NO: 13194A	DATE: 6/10/2015
<b>WRIGHT-PIERCE</b>	
Engineering a Better Environment	
<b>FIGURE:</b>	3

Source:  
 1. Bedrock Well Yield Probability information obtained from the United States Geological Survey (USGS).  
 2. Town line information, Aquifer Overlay and the Site Property boundary obtained from the CAIGIS ArcGIS online database.  
 3. Map developed by Wright-Pierce GIS Dept.



**Legend**

- Sreams

**NWITYPE**

- Lakes and Ponds
- Rocky Point Water System
- Town Line

**Probability of Well Yield >40 gpm**

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 99

1 inch = 2,000 feet  
 0 1,000 2,000 Feet

Sources: Esri, HERE, NRCAN, Esri Japan, TomTom, MapmyIn Community

<b>BEDROCK WELL YIELD PROBABILITY</b> Bow, New Hampshire	
PROJ NO: 13194A	DATE: 6/5/2015
<b>WRIGHT-PIERCE</b> Engineering a Better Environment	
<b>FIGURE:</b> 4	

XYZ W:\GIS\_Development\Projects\NH\Bow\13194A\_RockyPointWellInvestigation\MXD\Fig4\_bedrock\_prob\_map.mxd

Source:

1. Town line information, Aquifer Overlay and the parcel line information obtained from the CAIGIS ArcGIS online database.
2. Existing well locations are approximate and are based on information obtained from the New Hampshire Department of Environmental Services (NHDES) OneStop Online database.
3. Map developed by Wright-Pierce GIS Dept.

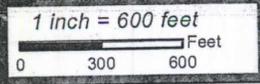


WTE W:\GIS\_Development\Projects\NH\Bow\13194A\_RockyPointWellInvestigation\WXD\Fig5\_ProposedWellLocationPlan.mxd



**Legend**

-  Existing Wells
-  Stratified Drift Aquifer



Source: Esri, DigitalGlobe, GeoEye, Aero

**Mapped Aquifers  
Rocky Point Drive  
Bow, New Hampshire**

PROJ NO: 13194A	DATE: 6/5/2015
	
Engineering a Better Environment	
	<b>FIGURE: 5</b>

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**White Rock SRF Financing**  
**Company Response to Staff Data Requests – Set 2**

**Date Request Received:** 7/8/20  
**Staff 2-4**

**Date of Response:** 7/22/20  
**Witness:** Nicholas LaChance

**Staff 2-4**

While acknowledging the relevance of the Company's response to Staff 1-16 in regard to the overall supply/demand situation, please provide the number of bulk water deliveries and total gallons delivered by month for June 2019 to the present.

**Response:**

Below is the requested data.

Date	Number of Deliveries	Total Gallons Delivered
August 2019	6	36,000
September 2019	8	48,000
October 2019	12	72,000
November 2019	16	96,000
December 2019	10	60,000
January 2020	14	84,000
February 2020	9	54,000
April 2020	6	36,000
May 2020	4	24,000

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**White Rock SRF Financing**  
**Company Response to Staff Data Requests – Set 2**

---

**Date Request Received:** 7/8/20  
**Staff 2-5**

**Date of Response:** 7/22/20  
**Witness: Nicholas LaChance**

**Staff 2-5**

Regarding the response to Staff 1-6:

- a) Why does the Company “suspect” that Bow schools are unable to serve the White Rock system?
- b) Might the schools supply at least some additional useful capacity? Please explain.
- c) What is the approximate capacity of the named schools?

**Response:**

- a) The Company made this assertion as there would need to be a study performed to determine if the Bow schools had additional capacity, whether the water is presently treated, would pump stations be required to bring the water into the White Rock system and so on.
- b) Potentially; however, as stated above that initiative would introduce another study to determine its efficacy.
- c) The Company doesn't have knowledge of this information.

DW 20-088  
Abenaki Water Company/White Rock  
Request for Approval of Financing  
AWC responses to Staff Discovery Requests - Set 3

---

**Date Request Received:**  
Staff 3-1

**Date of Responses:** 9/10/20  
**Witness:** Nick LaChance

Regarding Abenaki's August 27, 2020 filing (including the cover letter), Attachment, August 14, 2020 memo "White Rock Pressure Reduction Valve Test," please provide Mr. Davis' title and his employer.

**Response:**

Josh Davis is a New England Service Company employee. His title is water system engineer.

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**Request for Approval of Financing**  
**AWC responses to Staff Discovery Requests - Set 3**

---

**Date Request Received:**  
**Staff 3-2**

**Date of Responses: 9/10/20**  
**Witness: Nick LaChance**

Regarding Mr. St. Cyr's cover letter included with Abenaki's August 27, 2020 filing, which states "The change reduces the original financing request from \$400,000 to \$125,000. The change is due to delaying the search for a new source of supply.":

- a) Please explain or confirm all the reasons why Abenaki revised its filing from \$400,000 to \$125,000, including but not limited to the decision to replace two pressure reduction valves (\$35,000) which were not part of the original petition.
- b) Please provide the identity/ies of the person/people at Abenaki who have recently concluded that Abenaki is able to sustain demand at this time, absent source exploration.
- c) Please provide the identity/ies of the person/people at NHDES
  - a. who agreed with Abenaki, "that as long as AWC WR is able to sustain demand, then source exploration may not be necessary at this time?"and
  - b. whose comments prompted Abenaki's conclusion that "NHDES continues to support this project and has assured the Company that SRF at the previously provided terms and conditions (except for the lower amount) will continue to be available to the project."

**Response:**

a) The Company revised the sum of financing it was seeking due to system performance and economic reasons. The system has been able to sustain demand and avoid bulk water deliveries for the last 3 months; of which were during peak demand and through drought conditions with the help of an outdoor watering ban. This has been achieved through the combined efforts of the customers and the Company's systematic leak detection efforts. The significant number of bulk water purchases experienced in the prior 12 months was mainly due to undetected leaks in the distribution system. These have been identified and corrected resulting in no bulk water purchases over the last 3 months.

The addition of isolation valves will allow the Company to improve results in its leak detection efforts by isolating the system to potential problem areas. Further, the installation of isolation valves will allow for a fewer number of customers to be affected by any future distribution leaks as technicians will isolate the leak, allowing the wells the opportunity to keep up with demand in the remaining portion of the system.

The pressure reducing valves (PRVs) were added to the scope of capital work that would be completed within this financing as it was recently discovered that two of the PRVs are not functioning. The two subject PRVs are located at the highest gradient of the system; ultimately compounding system psi as the gradient slopes downward. The increased psi puts additional strain against the distribution mains, valves, services and fittings; which have already been described as sub-standard materials at the time of their installation. The additional strain creates another opportunity for the distribution system to become compromised.

Finally, the White Rock system has one of the highest water rates in the State. Company representatives met with the Village Shore Estates Association (VSEA) on August 20<sup>th</sup> to discuss the proposed projects, the potential impact on rates and the revised scope of capital work. The two parties agreed that the cost associated with source exploration, which is not guaranteed to provide supplemental sources, was far too great in its implication on future rates to consider at this time. This consideration was made in light of that fact that the Company is filing a general rate application imminently, regardless of the proposed capital work. The two parties are working jointly to seek a grant from the State Drinking Water Trust Fund (SDWTF) program to be used for source exploration. It is the shared position of the two parties that this would be the most equitable option to identify and bring an additional source of supply online considering the presently high-water rates.

b) After a series of internal discussions between Nicholas LaChance, Robert Gallo and Donald Vaughan, no bulk water deliveries over the 3 months indicates that the wells are able to meet demand provided that there is no outside water use.

c) Cynthia Klevins has been involved with this project since November 2019. After a discussion of the present status of the sources relative to sustaining demand, it was determined with Ms. Klevins that as long as demand is sustained the present sources will continue to be evaluated to determine if additional source exploration would be necessary. The basis for this evaluation is outlined in the Company's updated Corrective Action Plan (CAP), dated 9/1/20, which is pending DES approval. A copy of this plan is attached for your reference. Ms. Klevins provided reassurance of the SRF funding for the revised scope of work at that time.

Request 3-2-attachment

**RGallo@Newenglandservicecompany.com**

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**From:** RGallo@Newenglandservicecompany.com  
**Sent:** Tuesday, September 1, 2020 12:16 PM  
**To:** 'Klevens, Cynthia'  
**Subject:** Abenaki Water - White Rock - Corrective Action Plan Update

Good Afternoon Cyndi,

AWC would like to update the Corrective Action Plan for the White Rock System, dated October 30, 2019. Please see below:

**Source Supply:** We are now at a point where the system sources are meeting daily demand during the current drought. Several minor leaks and a significant leak were identified and repaired since the original CAP was submitted. We have not required bulk water deliveries for several months. In light of the stabilized production vs. demand, we request a 2-year extension from this date to complete a source investigation and construction of improvements. In year one we will continue to evaluate the system production vs. demand, and determine if the sources are adequate at the end of the period. If they are deemed sufficient, then we would request that the investigation of a new source be suspended, with the understanding that the investigation may be required at some time in the future. If it is deemed that the sources are not sufficient to serve the system needs, then year two would be devoted to a new source investigation and construction of the necessary improvements.

**Storage:** In February of 2020 we had the two 15,000-gallon storage tanks inspected, and they were deemed suitable for lining. The approved Corrective Action Plan stated that Abenaki Water Company would replace the two tanks, where now we are pursuing the lining effort. We are awaiting approval of the financing, and will have the lining done when we receive the approval. Since there has been a delay in the approval process we would like to qualify the timing of the liner installation. If approval of the financing is received too late in the year, it may not be feasible to have the lining done until Spring of 2021. If that is the case we will inform you of the delay, and request a later completion date for Spring of 2021. If financing is approved in the near term, we will have the lining done this year.

Please let me know if the information above is acceptable for amending the CAP. Thank you.

Robert Gallo, PE  
New England Service Company  
37 Northwest Drive  
Plainville, CT 06062  
Ph: (860) 747-1665  
Fax: (860) 747-2536

DW 20-088  
Abenaki Water Company/White Rock  
Request for Approval of Financing  
AWC responses to Staff Discovery Requests - Set 3

---

**Date Request Received:**  
**Staff 3-3**

**Date of Responses: 9/10/20**  
**Witness: Nick LaChance**

Regarding Abenaki's response to Staff 2-4 and Abenaki's August 27, 2020 cover letter, please either confirm that there have been no bulk water purchases since May 1, 2020 or provide the quantity of water purchased each month, from May 2020 through August 2020 inclusively.

**Response:**

A total of 4 loads, or 24,000 gallons, were purchased on May 6 2020. This was the last bulk water purchased to date.

DW 20-088  
Abenaki Water Company/White Rock  
Request for Approval of Financing  
AWC responses to Staff Discovery Requests - Set 3

---

**Date Request Received:**  
**Staff 3-4**

**Date of Responses: 9/10/20**  
**Witness: Nick LaChance**

Please indicate whether the homeowners' association supports or opposes the change in the scope of the financing and changes in the projects to be completed. Please provide any existing documentation relative to the homeowners' associations' position regarding the proposed change in scope.

**Response:**

Please see Company response to Staff 3-2(A). In addition, please see the enclosed letter from the VSEA President, dated 8/31/20, asking for swift PUC approval of the proposed financing so the improvements can be made this construction season. Otherwise, the specified improvements would not be made until the 1<sup>st</sup> half of 2021.

Response 3-4 attachment

August 31, 2020

Debra A. Howland  
Executive Director  
State of New Hampshire Public Utilities Commission  
21 South Fruit Street  
Suite 10  
Concord, NH 03301-2429

**Subject: Docket No. DW 20-088 Abenaki Water Company, Inc.  
Petition to Approve New Hampshire Drinking Water State Revolving Fund for  
White Rock Improvements**

Dear Executive Director Howland:

Village Shore Estates ("VSE") is an associated community located in Bow, NH comprised of 95 residential properties that share a water supply through community wells which are owned and operated by Abenaki Water Company ("AWC"). The water system servicing the community wells is known as White Rock water system. Village Shore Estates Association ("VSEA") provides this letter of support requesting the Public Utilities Commission ("PUC") approve Docket No. 20-088 and AWC's petition for a New Hampshire Drinking Water State Revolving Fund loan ("DWSRF") for urgent system improvements.

On November 1, 2019, the Department of Environmental Services ("DES") cited two significant deficiencies and accepted AWC's corrective action plan to address these issues. In February 2020, a DES tank inspection grant match was awarded in the amount of \$8,000 and AWC confirmed that the tanks could be repaired safely via a relining process rather than the more costly replacement option that was originally considered.

The White Rock water system has two 15,000 gallon leaking/corroded storage tanks and a deficient and inefficient distribution system. AWC seeks \$125,000 in funds via a low interest loan from the NH DWSRF. The project will include the installation of additional system valving for enhanced operational efficiencies, replacement of two pressure reducing valves to reduce system pressures and undue stress on the already fragile mains and the relining of the two 15,000 gallon storage tanks to prolong their life expectancy. Relining of the tanks MUST be completed as soon as possible to avoid the need for additional bulk water hauling.

AWC's filing was submitted to the PUC on June 2, 2020. The DES has approved and earmarked the requested funds. At this time we ask the PUC to act swiftly in the review process and approve the request for funding so as to not allow any regulatory lag that would negatively affect AWC's ability to complete these projects before the end of the 2020 construction season.

As I am sure you can appreciate, these projects are essential to the 95 residents of VSEA and will allow a reasonable use of our water supply and peace of mind through the winter season and beyond.

If you have any questions, please feel free to contact me directly

Thank you and kind regards,

Cristy L. Bresson, JD  
VSEA, President  
11 Surrey Drive  
Bow, NH 03304  
[cristy.bresson@allianzrm-us.com](mailto:cristy.bresson@allianzrm-us.com)  
(603) 226-8951 (home/office)  
(603) 507-3535 (cell)

cc: Nicholas LaChance, Treasurer, Abenaki Water Company, [NLaChance@NewEnglandServiceCompany.com](mailto:NLaChance@NewEnglandServiceCompany.com)

Cynthia Klevens, P.E., Small Systems Section Manager, Drinking Water and Groundwater Bureau, DES,  
[Cynthia.Klevens@des.nh.gov](mailto:Cynthia.Klevens@des.nh.gov)

Jayson Laflamme, Assistant Director, State of New Hampshire Public Utilities Commission,  
[Jayson.P.Laflamme@puc.nh.gov](mailto:Jayson.P.Laflamme@puc.nh.gov)

**DW 20-088**  
**Abenaki Water Company/White Rock**  
**Request for Approval of Financing**  
**AWC responses to Staff Discovery Requests - Set 3**

---

**Date Request Received:**  
**Staff 3-5**

**Date of Responses: 9/10/20**  
**Witness: Nick LaChance**

With regard to (a) Abenaki's statement in its August 27, 2020 cover letter, "...the 3 existing wells have been able to sustain demand throughout the peak season and during this year's summer drought," (b) the apparent trend, in the table copied below (from the Company's response to Staff 2-4), which shows declining bulk water purchases from November, 2019 to May, 2020 and (c) the Petition as initially filed on June 2, 2020 (including prefiled testimony and attachments):

Date	Number of Deliveries	Total Gallons Delivered
August 2019	6	36,000
September 2019	8	48,000
October 2019	12	72,000
November 2019	16	96,000
December 2019	10	60,000
January 2020	14	84,000
February 2020	9	54,000
April 2020	6	36,000
May 2020	4	24,000

- a) Please provide sufficient further explanation as to why Abenaki states it is now able to sustain demand during the peak season and during this year's summer drought?

**Response:**

Please refer to the response on request 3-2

- b) Is there any known, likely, or possible reason for the improvements in the three existing wells' performance such that Abenaki eliminated its request for funding to seek an alternate source?

**Response:**

The repair of distribution leaks has enabled the wells to rest instead of continuously working on a 24/7 basis. As such, during the pump's downtime, the wells are able to recover, to a certain degree.

- c) In addition to possible improvements to the performance of the three wells, are there any other known or suspected reasons why the system is able to meet demand?

**Response:**

The system is maintaining demand due in part to the continuous leak detection efforts being performed by Company technicians. Quick identification and repair of distribution leaks significantly improves the system's reliability.

- d) Why is Abenaki's initial conclusion that development of a new source was "necessary" and that attempts to get enough water from existing wells was "futile" no longer accurate?

**Response:**

The initial filing was submitted in May after a series of months of purchasing bulk water to maintain service. The outlook of the system sources, and their ability to maintain demand, was not encouraging. Given the recent history that the Company has illustrated, namely its ability to maintain demand through the peak summer months, the prudent investment appears to be upgrades in the distribution system and the relining of the two storage tanks.

DW 20-088  
Abenaki Water Company/White Rock  
Request for Approval of Financing  
AWC responses to Staff Discovery Requests - Set 3

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**Date Request Received:**  
**Staff 3-6**

**Date of Responses: 9/10/20**  
**Witness: Nick LaChance**

Please explain why the replacement of the two pressure reduction valves, which was not part of the originally proposed spending, is now included as part of the proposed expenditure? Please explain the reasoning for Abenaki now including this in the revised financing?

**Response:**

Please see the Company's response to 3-2(A).