March 3, 2022

Ms. Kathy Davis Howatt
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Bureau of Land Resources
17 State House Station,
Augusta, Maine 04333-00017

TROUT UNLIMITED
Sebago Chapter

Transmitted via e-mail

RE: **Draft Maine DEP Water Quality Certification for the Hiram Hydroelectric Project # L-07780-33-L-N, FERC Docket P-2530**

Dear Ms. Howatt:

We respectfully ask that you consider the comments of Sebago Chapter of Trout Unlimited (Sebago TU) before issuing the final Hiram Project a Water Quality Certification (WQC) in the above referenced DEP docket. As evidenced by earlier comments and submissions Sebago TU has submitted in this matter, the Applicant has not demonstrated that the project has met the standards for a Clean Water Act Water Quality Certification. As Sebago TU observed in its Motion to Intervene:

> *What was once a scenic tourist attraction now resembles an abandoned industrial site that attracts visitors who vandalize or otherwise degrade the site. Rather than encourage appropriate use and the measures needed, the DRFMP[1] seems to instead discourage use and simply eliminate problematic areas from the Project. The applicant Brookfield has demonstrated a nearly complete disregard for the continuing adverse effects of its operations on native, indigenous brook trout and other aquatic species, ignored DEP water quality standards in connection with its dewatering practices and allowed, and in some cases directly contributed to, the degradation of recreational, scenic and other environmental aspects at the Hiram Project. Presently, the applicant does not even provide a good vantage point from which to view the falls when it is watered. A free-running river that once allowed free passage of salmonids has been reduced to a leakage-supplied trickle during the summer months with any aquatic life traveling downstream forced into turbines killing and maiming an undetermined number of them."*[2]

Despite these obvious harms that are the direct result of Project operations, the Draft Water Quality Certification (L-007780-33-L-N DRAFT*)* takes no action to address any of them and proposes to grant the certification under the same terms and conditions that have resulted in these harms - rendering the project area suitable only for hydroelectric power generation at the expense of other uses, and at the expense of narrative and numerical water quality standards. The operational practices of the Applicant are therefore in direct contravention of not only federal dam relicensing law, but state water quality laws as well – as such, the DEP must deny this WQC. Our concerns are as follows:

[1] Draft Recreational Facilities Management Plan.
[2] Sebago TU Motion to Intervene, With Protest, Comments, and Recommendations for Preliminary Terms and Conditions by the Sebago Chapter of Trout Unlimited for the Hiram Project dated March 1, 2021, pages 32 and 33.

I - SIGNIFICANT DEFICIENCIES OF THE DRAFT WATER QUALITY CERTIFICATION - NARRATIVE STANDARDS

a. The Draft Water Quality Certification ("Draft WQC") does not consider or even mention the special status of the waters of the upper Saco River Watershed the Maine Legislature has explicitly spoken to under the State Water Quality Classification scheme, the Natural Resources Protection Act and elsewhere under Maine statutory law.

In order to grant state water quality certification under Section 401 of the Clean Water Act, DEP must conclude that there is a reasonable assurance that the continued operation of a hydropower generating or storage project will not violate applicable state Water Quality Standards. These standards have been established in the State's Water Classification Program (Title 38 MRSA Sections 464-469). These standards specifically designate the uses and related characteristics of those uses for each class of water and establish water quality criteria *necessary to protect those uses and related characteristics. Under Section 464, the Legislature declared "that it is the State's objective to restore and maintain the chemical, physical and biological integrity of the State's waters and to preserve certain pristine state waters*."

Evidence that the legislature intended to include this stretch of the Saco River under scrutiny for a WQC as a pristine water subject to special scrutiny is not only found in the water quality classification scheme[3] but noted in a parallel statutory scheme for water quality permitting under the Natural Resources Protection Act.[4] Although not an explicit water quality standard for the purposes of water quality certification, the special designation found under NRPA evidences a clear and consistent legislative intent and policy that water quality in this stretch of the Saco River is entitled to special consideration. This should, as a matter of law be considered as persuasive authority and not disregarded for the purposes of WQC, particularly when narrative water quality standards are considered as part of the certification process such as the preservation of "*ecological, social, scenic or recreational importance*" of Class AA waters[5] and "*recreation, in and on the water*" for Class A waters.[6] In short, the recreational and scenic aspects of a WQC cannot be summarily ignored or disregarded, particularly when the Legislature has singled out this segment of the river in not one, but two statutory schemes.

Sebago TU has clearly described the special status of the upper Saco in its prior filings. The Saco River segment located in the Project area is designated by statute as a river segment entitled to *special protection*.[7] To illustrate this, we again provide Attachment A that depicts the river segment and Hiram dam's central location. Elsewhere the Maine Legislature has also specifically stated that these waters

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[3] *See* 38 MRSA §467. Classification of major river basins**:** "All surface waters lying within the boundaries of the State that are in river basins having a drainage area greater than 100 square miles that are not classified as lakes or ponds are classified in this section. ….**12. Saco River Basin. ….** (3) From a point located 1,000 feet below the Swan's Falls Dam to its confluence with the impoundment of the Hiram Dam - Class AA. (4) From its confluence with the impoundment of the Hiram Dam to a point located 1,000 feet below the Hiram Dam - Class A. (5) From a point located 1,000 feet below the Hiram Dam to its confluence with the Little Ossipee River - Class AA …..) (bold text in original). The segment of the Saco River subject to this WQC is therefore classified as the highest and second highest classification waters can attain in the state.

[4] Natural Resources Protection Act 38 MRS § 480 et seq. ("NRPA").

[5] 38 MRSA § 465 2(A).

[6] 38 MRSA § 465 1(A).

[7] Specifically, under NRPA, 38 MRSA §480-P, "*Special protection for outstanding river segments*" (italics supplied). Under paragraph 16 the protected segment is described as "The Saco River from the Little Ossipee River to the New Hampshire border."

possess: "*outstanding scenic and aesthetic qualities and that certain areas along these rivers are of outstanding scenic, historic, archaeological, scientific and educational importance*."[8] The same section of the Saco River is also included as a river that: "*… because of their unparalleled natural and recreational values, provide irreplaceable social and economic benefits to the people in their existing state*."[9] The statute continues to say: "*Further, the Legislature finds that projects inconsistent with this policy on new dams and diversion projects, which constitute hydropower projects pursuant to Title 38, section 632, and redevelopment of existing dams will alter the physical and chemical characteristics and designated uses of the waters of these river and stream segments. It finds that these impacts are unacceptable and constitute violations of the State's water quality standards. The Legislature directs that no project which fails to meet the requirements of this section may be certified under the United States Clean Water Act, Section 401*."[10] Thus, under any statutory scheme, the Maine Legislature has clearly indicated its intent and policy regarding the Saco River and the Hiram Project, located within the specified segment of the river, is therefore a Project that deserves special scrutiny and consideration due to its location in waters recognized as being of outstanding importance and entitled to special protection.

b. **Given the special, unique status of this river segment, which is repeatedly and explicitly stated by the legislature in multiple water quality statutes, all consideration should be given to protecting the resource, *all* of its uses, and mitigating the obvious harms the Project continues to cause.**

The Hiram Project is also located in the middle of southwestern Maine's greatest concentration of waters where native, indigenous brook trout can be caught in brooks and streams, as listed by the Maine Department of Inland Fisheries and Wildlife (MDIFW).[11] Twelve waters are listed in the watershed. Of these, two are located immediately upstream - the Shepards River and Tenmile Brook; and two are located immediately downstream - Breakneck Brook and Pease Brook. Further downstream and before the next dam are Pigeon Brook and Quaker Brook with its tributary Heath Brook. A recent study underlines the importance of main stem rivers to the brook trout populations in their tributary streams.[12]

Furthermore, the Hiram Project is within the historic range of indigenous and federally endangered and threatened Atlantic salmon and a known historic migration pathway to spawning habitat in the Saco River within the watershed as well as habitat for co-evolved state species such as American Shad, alewives and eels. These are species that are vital to the state's commercial and recreational fisheries and as such should also warrant that special consideration be given not only to the fisheries impacts of the Project, but to the impacts a depleted fisheries ecosystem will have on scenic, aesthetic and recreational uses.

Given its special status, **consideration should have been given to the resource and all of its classification uses, not just hydro operations. Unfortunately, the Draft Water Quality Certification appears to give all latitude and consideration to hydro operations** as we will describe in subsequent sections of these comments.

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[8] 38 MRSA Chapter 6: Saco River Corridor, §951, Purpose. See also NRPA 38 MRSA §480-A.
[9] 12 MRSA Chapter 200: Maine's Rivers § 403.
[10] Ibid.
[11] From https://www.maine.gov/ifw/fishing-boating/fishing/fishing-opportunities/maine-fishing-guide/sebago-lakes.html
[12] Article: Rivers and large streams more important than originally thought for brook trout accessed at https://www.pennlive.com/life/2020/06/rivers-and-large-streams-more-important-than-previously-thought-for-brook-trout.html

c. The project does not meet the narrative standards for Class A waters with regard to designated uses including fishing and recreation or as habitat for fish and other aquatic life, in large part because the operator's dewatering practices cannot be characterized as "natural" as required by statute.

As DEP noted in its Draft License Application Comments: "*Brookfield White Pine Hydro LLC must demonstrate compliance with all designated uses as well as all numeric and narrative criteria in order for the Department to issue a water quality certification for the Hiram Project*."[13] The narrative criteria for the Class A waters immediately below Hiram Dam are:

"*A. Class A waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as natural*."[14] The waters from Hiram Dam to 1000 feet below it are designated Class A waters.[15]

As will be discussed below, there is no evidence that the Project meets numerical standards for DO and macroinvertebrates, particularly in the Class AA waters further downstream of the dam. However, there is ample legal authority for DEP to deny certification or impose WQC conditions based on violations of narrative standards.[16]

Presently at Hiram Dam, the minimum flow of 300 cfs is operationally diverted by the Applicant not through or over the dam itself, but through a separate penstock and the powerhouse up to its full generation capacity. Under these conditions, for most of the year, bypass flows are reduced to a trickle estimated at two (2) cfs and about half of the area of designated Class A below Hiram Dam is severely dewatered resulting in large areas of exposed rock and five small pools; four of the pools are connected to the trickle flow, one is not and is stagnant. This dewatered area remains classified as Class A despite the lack of water caused by Applicant's operational practices. The dewatered area is extensive - it is comparable in size to the amount of watered area in the area designated Class A. If it were a much smaller area, it might be overlooked, but it is so large that it must be considered. While this dewatering practice allows the applicant to continue to generate and sell electricity under low flow conditions, it is incompatible with other designated uses and numeric and narrative water quality standards.

1) Fishing: As the Applicant has reported, "*The pools in the reach were relatively deep and flows through and between the pools was provided by* ***leakage flows of approximately 2 cfs from gates at the dam****. Temperature and dissolved oxygen levels in the pools were good.* ***Limited fauna,***

[13] Maine DEP letter RE: FERC No. 2530, Hiram Hydroelectric Project Draft License Application Comments dated September 25, 2020.

[14] 38 MRSA §465 Standards for classification of fresh surface waters at ¶ 2.

[15] 38 MRSA §467 ¶ 12 A (4).

[16] *See S.D. Warren Company v. Board of Environmental Protection*, 2005 ME 27, 868 A.2d 210 (2005) ("S.D. Warren I"); *S.D. Warren Company v. Board of Environmental Protection*, 547 US 370 (2006) ("S.D. Warren II"). In S.D. Warren I at 442, the Court concluded that the narrative criteria at 38 M.R.S.A. § 465, which requires waters "of sufficient quality to support all indigenous fish species," was intended to be an integral part of the water quality standards for the BEP to consider. The Court also concluded, based upon the specificity of the designated uses at 38 M.R.S.A. § 465, that the Legislature's purpose for the language "suitable for the designated uses" was "that the designated uses actually be present." The court also stated that when those uses are not presently being achieved, the Legislature intended the quality of the water be enhanced so that the uses are achieved (internal citations omitted).

***including fish**, were observed, indicating that **the pools are infrequently used by aquatic organisms**. The overall height of the falls is reported as 55-feet. There is adequate connectivity between the pools that any fish dropping down during high flows would be able to pass out of the pools."*[17] (bold supplied for emphasis). Reports from people who have fished these pools confirm that while smallmouth bass are occasionally present in the lowest pool, they do not contain fish in fishable abundance, and there is no reason for that to occur. The attractant flow would be to the much greater quantities of water issuing from the tailrace, not to the pools that occur between the dam and the powerhouse. Runs of water of 2 cfs might conceivably be fishable for small fish in headwaters where there is overhead cover. Here there is no overhead cover, and little cover of any sort. The pools and the connecting 2 cfs flows are not under any reasonable definition a place to fish. This is in stark contrast to the situation at this site until around 2008, as reported by local residents who regularly caught brook trout and other fish in this section of river up to the toe of the dam (see detailed discussion below, and Attachment J).

2) Recreation in and on the water: The dewatered falls also lack the scenic character of a waterfall, or indeed even that of most flowing water. The flowing waters are hidden within the nearly 500-foot penstock - what remains is a great amount of exposed rock. Enjoyment of the aesthetic qualities of a place is an essential part of its recreational use, and the current practice of dewatering the falls destroys this. The unkempt appearance of the powerhouse and the industrial appearance of the exposed penstock complete the picture and it is not an aesthetic one. The inappropriate use of the resource in the downstream access area that the Applicant itself has so repeatedly documented does not seem out of place given that the hydro operation has assigned no importance to the aesthetics of a place whose aesthetics once made it a tourist attraction as is well documented by old picture postcards like the ones that we have included in our filings. As the Applicant itself has so repeatedly documented, this is no longer a site that encourages appropriate use – recreationally or otherwise. That deterioration has happened on their watch. However, allowing a Project area to become an eyesore does not excuse the Applicant from complying with the appropriate water quality standards.

The minimum flow of 300 cfs is prescribed to reasonably maintain the form and function of a mainstem river downstream of the dam. This cannot be accomplished by the 2 cfs trickle escaping through the gates on one side of the channel. A larger flow, spread over the full width of the dam, would attract fish and provide a much larger wetted area that would support flora such as Podostemum ceratophyllum that grows on hard bottoms in swiftly flowing rivers and streams. These "*plants grow fast and vigorously and provide habitat for many aquatic insects and their larvae, as well as Cnidaria, Turbellaria, Mollusca, Annelida, Hydrachnidia, Cladocera and Copepoda. Small fish feed on the invertebrates and freshwater snails graze on the foliage."*[18] Thus, current project operations that dewater large areas downstream of the dam minimize and eliminate the available habitat for aquatic plants and other species to the maximum extent.

II - SIGNIFICANT DEFICIENCIES OF THE DRAFT WATER QUALITY CERTIFICATION - NUMERIC STANDARDS

a. The project has not been demonstrated to meet DEP macro invertebrate standards in either the Class A waters below the powerhouse or the Class AA waters immediately below.

[17] Updated Study Report, page 2-3, 2.2.6 Summary.

[18] Naturalist listing on Threadfoot accessed at https://www.inaturalist.org/taxa/167115-Podostemum-ceratophyllum

Data on macro-invertebrate communities is a key study requirement for any of Maine's water quality classifications. **Remarkably, *there has been no data submitted by the applicant for any of the Class A area whatsoever on benthic macroinvertebrate sampling*.** Rock baskets were not deployed to the pools in the dewatered reach and the Applicant reported: "*The deep, sandy tailwater pool was not a suitable sampling environment for invertebrates in a river. As such, the sampling station was placed about 975 feet downstream of the powerhouse in riverine habitat.*"[19]

Setting aside the questionable statement regarding the suitability of a "*deep, sandy tailwater pool*" (which is without merit), as a sampling environment, the water quality criteria and designated uses applicable to the downstream waters of Hiram Dam are determined by how these waters are classified. The waters above and below Hiram Dam are classified as follows:

> *"(4) From its confluence with the impoundment of the Hiram Dam to a point located 1,000 feet below the Hiram Dam - Class A.*
>
> *(5) From a point located 1,000 feet below the Hiram Dam to its confluence with the Little Ossipee River - Class AA."*[20]

1000 feet below the base of Hiram dam - the Class A area - extends only to a point about 500 feet below the powerhouse. Thus, **975 feet downstream of the powerhouse is well beyond the Class A area and in the Class AA waters**. It is unclear whether the Applicant chose this location to sample to get a more favorable result or simply misinterpreted the plain language of the statute. In any event it appears to be in the wrong location. For clarification, we have provided Attachment B which illustrates the demarcation of Class A and AA waters relative to the Hiram Dam and powerhouse. In the absence of other interpretations, we must assume that the statute means what the plain language of the statute says: that the Class A waters extend from Hiram Dam itself, not the powerhouse.

DEP has established protocols for macro-invertebrate sampling[21] and we have included the key provisions as Attachment C. In its Foreword, the protocol document states: "*The Department has collected a large, standardized database consisting of benthic macroinvertebrate samples from above and below all significant licensed discharges in the State, from areas impacted by non-point sources, as well as from relatively unperturbed areas. These sampling locations were chosen to represent the range of water quality conditions in the State.*"[22] Apparently, although extensive, the sampling locations were not all inclusive. None of the sampling devices seems reasonably applicable to the Hiram Project: Rock-filled wire baskets are for "*wadeable* [sic] *rivers*" and *rock-filled mesh bags* for "*small flowing streams*"[23] and the Saco, Maine's fourth largest river, is clearly neither; boats were used for the fish assemblage study for a good reason. **Cones could, however, have been deployed into the deeper water in the Class A area.**

As stated in our WQC Application Comments, the statute is specific as to the location of the Class A waters associated with Hiram Dam.

[19] FLA, Exhibit E, page E-4-33.
[20] 38 MRSA §467 ¶¶ 12 A (4) and (5).
[21] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, DEP LW0387-C2014, Revised April, 2014.
[22] Id., page iv.
[23] Id, page 2.

"(4) From its confluence with the impoundment of the Hiram Dam to a point located 1,000 feet below the Hiram Dam - Class A.

(5) From a point located 1,000 feet below the Hiram Dam to its confluence with the Little Ossipee River - Class AA."[24]

This clearly defines the area of primary concern to be entirely in the plunge pool located below the powerhouse per Attachment D.[25] Water with similar characteristics should have been the site of evaluation, yet instead of sampling in the plunge pool, the data submitted was in waters on a point of land below it with different characteristics on a much narrower run of water. Scrutinizing the protocols, we found that sampler placement is to: ***"Avoid bank effects: samplers should be located in the middle 50% of the bank to bank width, or in an area with a flow regiment typical of the overall character of the stream segment."***[26] (Emphasis supplied) Attachment D also shows that the sampler was placed near the bank. Of additional note: we also discovered during our analysis that the field data sheet submitted for the macro-invertebrate study[27] provided as Attachment E shows the following Lat-Long Coordinates: 43° 39'52.49"N, 70° 36'03.27"W. This locates the samplers below the West Buxton Dam. While this makes exact location of the sampler impossible to determine, the Attachment F photograph[28] confirms that the Sonde was next to the west bank.

Please note that: *"Rooted aquatic grasses were present at the sample site and the substrates were covered with filamentous algae."*[29] This indicates that the sample site, located outside the Class A waters, was not only dissimilar from the Class A waters of primary interest but from the river section as a whole. The sampling site was located on an inside bend where currents are slower. Speaking with a local resident, the far bank from where the mesh bag samplers were deployed is deeper, as is normally the case with outside bends as currents are stronger there. The water on that bank should bear a greater resemblance to the Class A waters below the powerhouse. It was also reported that most of that section of the river does not support the algal growth described in verbiage and shown by photographs in the ISR. **While such algal growth is often present on the edges of streams, it is more consistent with slack water areas the protocol cautions to avoid.**[30] It does not normally appear in the deeper waters with more current that detaches filamentous algae. Current is also diminished at this location as some water passes through the back channel to the west to rejoin the flow below the sampling site.

Even given the variation from the sampling criteria used in selecting sampler type and placement, the results only supported Class B standards.[31] Given the sampler placement shown by Attachment D, **what the Applicant accomplished was not to demonstrate that the Class A water met Class A standards but that the Class AA waters immediately below only met Class B standards. The data only supported a 4% probability of Class A or Class AA."**[32] The data collected does not support that the Benthic community attains Class A and AA standards.

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[24] 38 MRSA §467 ¶¶ 12 A (4) and (5).
[25] Final License Application, Exhibit E, Page E-4-28, Figure 4-3. 2018 Water Quality Study Sample Sites, November 2020.
[26] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, page 5.
[27] ISR, Table 2.1-4, page 2-17.
[28] Id., Photo 2.1-2, page 2-10.
[29] Initial Study Report, February 2019, page 2-16.
[30] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, page 5. *"c) Avoid slackwater areas and eddies immediately upstream or downstream of large rocks and debris."*
[31] Id., Table 2.1-14, page 2-41. *"Probability of Class B 96%."*
[32] Ibid.

Sebago TU clearly stated these facts in its prior filings on the Hiram Water Quality Certification.[33] DEP chose not to direct the Applicant to redo the macro-invertebrate study when there was still time to do so before license expiration; compounding its inaction, DEP now chooses to ignore these obvious discrepancies in its Draft WQC. **While acknowledging the discretionary powers enjoyed by DEP, discretion does not extend to allowing an applicant to submit study data that has been collected in direct conflict with established DEP protocols.** The protocols should have been more strictly applied, especially given the special status afforded this river segment described above. DEP's finding in the Draft WQC that the existing Project flow regime maintains and supports habitat for aquatic species in the Saco River downstream of the Project dam is not supported.

b. The project has not been demonstrated to meet DEP numeric Dissolved Oxygen ("DO") in either the Class A waters below the powerhouse or the Class AA waters immediately below.

Only by completely ignoring the narrative criteria and relying solely on DO and macro-invertebrate sampling could the project conceivably meet Class A water quality standards. Here however even these criteria are not met. **The DO and Benthic Macro-invertebrate studies were co-located incorrectly to measure what they purport to measure.** There is therefore a complete absence of DO and Benthic Macro-invertebrate studies in the entire Class A section of the project below the powerhouse. DEP ignores these obvious discrepancies in its draft WQC. Again, DEP's finding in the Draft WQC that the existing Project flow regime maintains and supports habitat for aquatic species in the Saco River downstream of the Project dam is not supported. The Draft WQC does indicate this requirement may be met at some future time,[34] but it has not been met at present. DEP had time to, and should have, required Applicant to meet this requirement after Sebago TU alerted it to this deficiency in an earlier filing (CITATION REQUIRED). **It is significant that the proposed future monitoring will occur "*In the tailrace*" as should have been done during the study phase of relicensing.**

c. The DO study conducted in the by-pass reach was critically flawed.

Regarding Temperature and Dissolved Oxygen Study: *"Sampling should also occur in any bypassed segment of the river created by the project."*[35] Thus, **data from the by-pass at Hiram that is generally dewatered during the summer months is not optional but required by the protocol**. As stated in our WQC Application Comments, this is especially important for the Hiram Project because the dewatered area above the powerhouse is roughly equal in size to the area below the powerhouse. The combination of these areas constitutes the Class A water plainly defined by the statute.

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[33] Sebago TU letter dated May 12, 2021, RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530); Sebago TU letter dated June 21, 2021. RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530).

[34] Draft WQC (L-007780-33-L-N DRAFT), page 7: *"…BWPH proposes to develop and implement a plan to monitor dissolved*
oxygen downstream of the Project dam in Hiram Falls and below the Project tailrace to reaffirm that applicable Class A water quality standards are met."

[35] DEP Sampling Protocol for Hydropower Studies, Rivers and Streams, Temperature and Dissolved Oxygen Study, Sampling Stations, December 2017

That having been said, DO levels reported in Initial Study Report.[36] did not meet DO levels on at least five occasions. The FLA notes this is because of "*impoundment effect*."[37] Attachment G[38] shows water temperatures taken at different locations in the impoundment, the by-pass and the tailwater. Please note that while it is difficult to see from the graph, the temperatures in Pool 3 vary to a much greater degree than temperatures from the other locations. This is not due to impoundment effect but to the effects of so much bare rock interacting with a trickle of water: we have dubbed this the 'much rock, little water' effect. If this were not the case, Pool 1, the upper pool, would show the greatest variations. Please also note that it is impossible from the graph to determine if rises in tailwater temperatures correlate with impoundment temperatures. The data either is not graphed or is hidden behind other data. Please additionally note the discrepancy between pool numbers in the verbiage and the legend of the graph: Pool 2 in the verbiage, Pool 3 in the legend of the graph. It is therefore not possible to conclude from the data that the "*impoundment effect*" is responsible for the failures documented.

Five Sondes were deployed in five pools in the dewatered falls depicted in Attachment H,[39] data was only reported from two, and neither was located in the stagnant pool. **The fact that less than half of the sensors were functional during the course of the study and none of them were located in the area of greatest concern is a fatal flaw.** The study should have been repeated and sensors monitored more closely and replaced if non-functional.

Again, Sebago TU clearly stated these facts in its prior filings on the Hiram Water Quality Certification.[40] DEP chose not to direct the Applicant to redo the dewatered reach DO study when there was still time to do so before license expiration; DEP continues to disregard these obvious discrepancies in its Draft WQC.

d. The project has not been demonstrated as even meeting the standards for Class C waters.

Maine statutes defining Class C waters state:

"4. Class C waters. *Class C shall be the 4th highest classification.*
A. Class C waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as a habitat for fish and other aquatic life. [PL 2003, c. 227, §4 (AMD); PL 2003, c. 227, §9 (AFF); PL 2005, c. 561, §10 (AFF).] "

The dewatered reach below Hiram Dam minimizes habitat suitable for aquatic life. **Discussions with past and current DEP staff indicate that ledge type habitat of the type that constitutes the substrate for the**

[36] ISR, Attachment E, Figures 2.1-6 and 2.1-7, page 2-30.
[37] FLA, Exhibit E, Page E-4-33.
[38] Id., Exhibit E, Page E-4-37 Figure 4-7.
[39] Id., Exhibit E, Figure 4-6.
[40] Sebago TU letter dated May 12, 2021, RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530); Sebago TU letter dated June 21, 2021. RE: Brookfield White Pine Hydro, LLC's, DEP Application # L-07780-33-L-N, Hiram Hydroelectric Project, for §401 State Water Quality Certification, (FERC Docket P-2530).

dewatered section often has minimal value as habitat and thus, dewatering the reach is of no consequence. That is clearly not the case for Hiram Dam.

There is value in the dewatered reach below Hiram Dam that is being minimized and ignored by the Draft Water Quality Certifications. On June 8, 2021, Sebago TU Conservation Committee member Matt Streeter visited the Hiram Dam site in order to photograph conditions. Some of these photos have been attached, along with detailed descriptions, as Attachment I. The photos demonstrate the following:

1) That the grade of this 500-foot section of river is moderate, walkable, fishable, and passable by most fish species.

2) That the east side of the cascade, where high velocity flows from dam releases are concentrated, is scoured of all sediment and plant life, giving the impression that aquatic life is not sustainable.

3) That by contrast, the west side of the cascade, spared the damage caused by dam releases, sustains basic aquatic plant and animal life and riparian vegetation, which could be a great deal more varied and abundant if minimum flows were directed over the full width of the dam, and high velocity flows from gate releases were kept to a minimum.

4) That, combined with the testimonial of local residents (see Attachment J), demonstrates that brook trout, among other species of fish, can and did inhabit the full length of the cascade up until around 2008.

5) That returning a flow of 300 cfs, over the full width of the dam, and moderation of the most extreme flows during releases, could restore this 500-foot section of river to a productive, fishable section of river.

In sum, due to the way the dam is currently being operated, this section of river does not provide aquatic life structure and function, does not provide scenic value, and does not provide the recreational values of fishing or other in-water recreation required by even a Class C classification. These values were provided before flows over the dam were severely reduced in 2008 in violation of Maine's antidegradation policy,[41] and the project was apparently profitable. With a modest modification to the flow regime, these values could and should be restored.

It should also be noted that this request for minimum flows to be directed over the dam and not through a 500-foot sluiceway is generally the standard, not the exception to the rule. Nearby examples of projects that incorporate these features in southwestern Maine include the Worumbo Project and the Bonny Eagle Project which is the next dam downstream from Hiram Dam. The burden is on DEP to show that there is a reason for dewatering the reach by a Use Attainability Analysis, not on stakeholders to show that there is potential value to the dewatered habitat. Direction of minimum flows through the turbine was a point of controversy during the last license amendment of the Hiram Project license[42] that was resolved in favor of the operator instead of the resource without explanation or justification. There is nothing in the record for this relicensing to justify this obvious disregard for the resource that is in conflict with general DEP practice. The demonstrable quality of the reach below the dam for aquatic habitat and recreation in this case dictates that this project be treated as others have been and minimum flows not be directed through the penstock and turbines leaving this as the only downstream path for aquatic organisms for 8 1/2 months out of the year.

[41] 38 MRSA §464¶4(F).

[42] Maine DEP letter dated April 30, 1999, ER: Application for Amendment of License, Hiram Hydro Project, FERC No. 2530.

III – OTHER SIGNIFICANT DEFICIENCIES

a. The 2007 Settlement will never provide fish passage at Hiram Dam on its present course.

The history of the 2007 Agreement has been one of missed targets and delays. Disappointing returns continue to be a feature of the required reports. The 2020 Saco River Diadromous Fish Passage Report states:

> "*This year, the East Channel fishway successfully passed 34,246 river herring, 5,353 American shad, 3 Atlantic salmon and 18 juvenile American eels; and the West Channel Denil fishway was operated in a wide open, fully volitional manner and fish counts were not taken. In addition to the 34,246 river herring successfully passed through the East Channel fish lift, BWPH biologists trucked approximately 1,400 above the Bar Mills Project, 1,100 above the West Buxton Project, and 1,500 above the Bonny Eagle Project in 2020 to meet upriver stocking goals. Currently, remnant populations of American shad and river herring provide adequate brood stock for Saco River restoration purposes without resorting to out-of-basin sources of fish."*[43]

The numbers of river herring counted fall far short of the carrying capacity of the Saco. One example is the returns for river herring. The Skelton Dam impoundment is 488 acres in size. The estimate for river herring production in Maine is 235 per acre.[44] Multiplying these factors results in 114,680 for returns for the Skelton impoundment **alone**. The present returns are what would be expected in a watershed like the Royal River, a small coastal system north of Portland, not the Saco, Maine's fourth largest watershed. It is enough to say that only three Atlantic salmon returned in 2020 despite continuing stocking efforts. That the Applicant would describe American shad and river herring as *"remnant populations"* in this or any other context speaks volumes.

Lack of progress on Maine's Kennebec and Androscoggin watersheds over the years has shown that relicensing is the only time that hard dates and outcomes can be set that dam operators can be held to. There have been two major delays to the fish passage implementation schedule for the Saco Watershed already since the 2007 Agreement was initially signed with dates having already slipped between seven and nine years. The latest amendment was issued in 2019.[45] Based on past performance and since there is no penalty for delay to the operator, further delays should be expected. Without concrete provisions in the new license, it will be highly unlikely for Hiram Dam to see fish passage within the next 20 years. During this time, American eels, white suckers and likely some larger brook trout will continue to be killed by Brookfield turbines as Sebago TU has documented has occurred in the past.[46] The historic range of American eels is throughout Maine. There is no reason or justification that corrective measures for these species should have to wait another twenty years - or more.

b. There is nothing in the record to indicate that a recreational facilities management plan will be developed that will adequately address the recreational needs of the project.

[43] Brookfield 2020 Saco River Diadromous Fish Passage Report dated February 2021, page 11.
[44] Maine Department of Marine Resources Strategic Plan for the Restoration of Diadromous Fishes to the Penobscot River, March 2008, page 16.
[45] FERC Order Modifying and Approving Fish Passage Assessment Report and Recommendations for Fish Passage and Fisheries Management issued July 18, 2007.
[46] Sebago TU letter dated December 18, 2019, Subject: Comments of Trout Unlimited, Sebago Chapter Regarding Observed Fish Kills Related to the Operation of the Hiram Hydroelectric Project (FERC Project 2530-054).

It is within the prescriptive authority of DEP to address recreational facilities provided as mitigation for the project. Meaningful recreational studies were not conducted during the study phase of the relicensing and the Draft EA submitted by FERC was conspicuously lacking in information regarding the status of existing facilities and features as described by Sebago TU's Comments.[47] FERC declined to order the Recreational Opportunities Study requested by Sebago TU. The Recreational Facilities Inventory conducted by Brookfield was seriously deficient ignoring recreational features in the project vicinity that have been used by local residents for decades but that had been fenced off by Brookfield. The scenic overlook and the nature study area that Brookfield has proposed to eliminate from the recreational plan have been so long neglected by Brookfield that many local residents have lost interest in them. To paraphrase a local resident, 'After years of watching the facilities deteriorate, it has been so long since they were actually viable, that no one remembers them as whole and lovely.' Brookfield succeeded in their quest to make the areas so unusable that people will not decry their elimination.

Regarding the downstream areas on the west side-new parking lot, the beach and portage trail there have also been neglected and inadequate care taken of the facilities. The parking area becomes overrun during peak usage, so that the Town of Hiram had to place no parking signs along River Road. The beach area itself has trash and illegal camping, which makes families hesitant to utilize the space, (see attachments K and L), the Town of Hiram is unsure of what access they actually have as evidenced by the Municipal Officers Meeting Minutes of Jan 20,2022: "Brookfield lease for River Road beach area. Terry [town clerk] will check out". Brookfield has not replied to their requests for further information.

There is nothing in the record to indicate that a recreational facilities management plan will be developed that will adequately address the recreational needs of the project. Without a concerted effort to gather information and ideas on encouraging appropriate use from potential user groups from a much larger area than the abutting towns (like that rejected by Brookfield in the study phase of the relicensing) there can be no expectation that adequate measures will be determined to improve the situation at the Hiram Project. One of Maine's most under-remediated projects will become even more so. This is further supported by the fact that the permanent arrangements for a boat launch in the impoundment requested by MDIFW still remains unresolved. The Draft WQC mentions that an informal launch exists, but does not note that Brookfield's proposal in their Final License Application has been deemed unacceptable by MDIFW.[48]

Loss of recreational facilities is a serious deficiency of this relicensing – even a reasonable opportunity to view the falls when watered is not provided. Given all that has transpired before, a water quality certification issued without provision for the most essential features such are watering the falls and providing reasonable access to view the falls abrogates DEP's responsibilities to the project and its resources and will ensure that these harms will persist for the term of the new license. The vandalism

[47] Sebago TU Comments on the Draft Environmental Assessment for Hydropower License, Hiram Hydroelectric Project, P-2530-057 dated October 22, 2021.

[48] MDIFW letter dated March 12,2021, Re: MDIFW Comments on the Final License Application for the Hiram Hydroelectric Project (FERC No. 2530), page 3: *"The Licensee suggests an existing private, informal boat launch located approximately 3 miles upstream of the Hiram dam provides adequate public access. MDIFW contends the site is not well known or advertised, and there is no guarantee that this private, informal site will remain available to the public in the near-term, let alone for the duration of the new license. Additionally, the Licensee suggests they will work with MDIFW to evaluate the need for a new Hiram boat launch if the existing launch becomes unavailable. This is unacceptable to MDIFW; the need is there, the existing access is unadvertised and is unknown by much of the public, and it is inadequate to address the anticipated long-term need over the term of the new license."*

that the Applicant has documented repeatedly and that DEP acknowledges in its Draft WQC[49] is evidence per se that the project area has been rendered unsuitable for recreation.

IV - CORRECTIVE PRESCRIPTIONS REQUIRED FOR THE HIRAM PROJECT TO MEET WATER QUALITY STANDARDS

a. That Minimum Flows Shall Be Directed Over the Falls and NOT Through the Penstock and Powerhouse

Unless specifically exempted by statute or Use Attainability Analysis, all of Maine's flowing waters must meet Class C standards per 38 MSR 38§464¶4:

"A. Class C waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as a habitat for fish and other aquatic life."

Dewatering Hiram Falls makes it unsuitable for fishing and as habitat for aquatic life. The most direct way to mitigate both of these adverse effects would be for the Applicant to divert the minimum flow evenly across the dam spillway, and not as is presently being done, through the penstock and powerhouse. The immediate benefits would include:

1) The stagnant pool would be eliminated. The 2007 Settlement Agreement (discussed and cited below) is designed to put Atlantic salmon into the Big Ossipee River and thus the pool below Hiram Dam. The stagnant pool currently represents a stranding hazard and potential illegal taking of an endangered species should an Atlantic salmon become stranded there.
2) Aquatic organisms would have a path downstream during the summer and other low-flow periods other than though a turbine.
3) Aesthetic qualities of the site would be partly restored, especially during the summer when the site receives its greatest use.
4) Improving the aesthetic qualities would increase public pride in the site and have the effect of lessening the inappropriate use of the Downstream Access Area.
5) DO levels and the presence of macro-invertebrates in the reach would increase, increasing the suitability of the habitat for both indigenous brook trout and eventually Atlantic salmon parr in that pool.
6) The improved flow from 2 cfs to 300 cfs would provide a higher volume of oxygenated water for all aquatic plant and fish species in the Project area.

The current practice of sending minimum flows through the powerhouse does nothing to reduce the impact of the project and instead perpetuates its cumulative and continuing adverse environmental impacts.

[49] L-007780-33-L-N DRAFT, page 20.

b. Upstream Salmonid Fish Passage by 2032 Without Preconditions

When DEP last reviewed whether the operations of the Hiram Dam met state water quality standards,[50] it is fair to say that the legal question of whether state water quality law required the owner of a hydropower project to install upstream and downstream passage at its dam(s) in order to allow passage for indigenous species to reach their native spawning and rearing habitat had not been clarified by Maine's Supreme Judicial Court (the "SJC"). However, in the ensuing years since the Hiram Dam was last certified, any uncertainty around this issue and around DEP's authority to order fishways as a condition of water quality certification has evaporated. Beginning in 1991 with the Court's decision in *Bangor-Hydro-Electric v. Board of Environmental Protection,*[51] and then culminating in the SJC's decision (upheld by the U.S. Supreme Court) upholding DEP's and BEP's 2003 requirement of phased fishways in the Presumpscot River certification[52] – *a decision based on circumstances strikingly similar to those encountered today on the Saco River* -- any prior question of whether the designated uses and narrative criteria contained in 38 MRSA §465 ¶1 and 2 provide DEP with the authority to order the construction of fish passage as part of certification has been removed.

The question of whether DEP has the legal authority under Maine law to order the Applicant to install upstream and downstream passage for indigenous fish in the circumstances found today on the Saco River is not in doubt. What is clear is that if DEP does NOT establish a hard date for fish passage at Hiram Dam, it will be acquiescing to continued delays that would likely extend provision of fish passage at Hiram Dam past the new licensing period. DEP must follow its own precedents regarding the timing of when passage must be installed - precedents on timing that were established in certifications on the Presumpscot River, and recently reinforced on Cobboseecontee Stream - in light of the failure of the 2007 Settlement Agreement, to which DEP is not a signatory, to effect fish passage. Put simply, if DEP does not set a hard date for fish passage at Hiram Dam, it would acquiesce to indefinite delays, exactly opposite of what its own precedent establishes.

Sebago TU asserts that there is no better way to "*repair, rehabilitate and restore*" the Hiram Project environment than providing salmonid fish passage for both indigenous brook trout and Atlantic salmon. The 2007 Settlement Agreement is predicated on restoring Atlantic salmon access to the pool directly below Hiram Dam. It makes little sense to do this and not to provide passage for Atlantic salmon to the next pool above and the excellent habitat located there. Both brook trout and Atlantic salmon require access to critical habitat to survive and thrive. Access to spawning habitat is most critical and loss of access to that habitat for Atlantic salmon resulted in their reduction to a remnant population on the Saco many years ago. While the 2007 Settlement Agreement was intended to correct this, the agreement since its implementation has been plagued by unmet goals. The Applicant's most recent report documents poor river herring passage rates, and that Atlantic salmon are barely being maintained at remnant levels by the heroic efforts of the Saco Restoration Alliance.[53] DEP has the authority to address safe, timely and effective fish passage as part of its water quality certification process and has the opportunity to address some of the gaps and shortcomings that have become evident in the implementation and amendment of the 2007 Settlement Agreement. Relicensing is the best time to fix a hard deadline for fish passage at Hiram Dam to ensure that goals are met.

[50] Maine DEP letter dated April 30, 1999, ER: Application for Amendment of License, Hiram Hydro Project, FERC No. 2530.
[51] *See Bangor-Hydro-Electric v. Board of Environmental Protection,* 595 A.2d 438 (1991).
[52] See S.D. Warren I and S.D. Warren II.
[53] Brookfield 2020 Saco River Diadromous Fish Passage Report dated February 2021.

MDIFW comments on the Applicant's Final License Application included the following statements:

> *"As MDIFW was a party to the "Fisheries Agreement(s)", our Agency did not initially comment on fish passage provisions. In general, the State and Federal resource agencies responsible for diadromous fisheries management typically take the lead on fish passage negotiations, and MDIFW recognizes these passage facilities also benefit some resident, inland fish species. As Trout Unlimited pointed out in their comments dated March 1, 2021,* ***this area supports an abundance of native, wild trout resources above and below the dam, and it remains unclear if or how the dam may impact those resources.*** (emphasis supplied) *Consequently, in 2032 MDIFW recommends that the scope of the original Agreement should at least give some consideration to native brook trout, and not be solely driven by Atlantic salmon.*
>
> *In addition, while we appreciate the Licensee's Fish Assemblage Study to explore the above issue,* ***it was a cursory study that does not refute the potential use of areas above and below the Project by wild trout.*** (emphasis supplied) *As noted earlier by our Agency, the study design was not robust enough to answer Trout Unlimited' s concerns. If FERC is willing to give more consideration to the native trout resources in the upper Saco River drainage, a more detailed study should be considered when fish passage for Atlantic salmon is addressed in 2032."*[54] (Bold supplied for emphasis).

MDIFW is a signatory to the 2007 Agreement and as such, cannot recommend more than it did above under the terms of the agreement. DEP is not a signatory to the 2007 agreement, and as such can and should go further to correct the deficiencies of that agreement. Given the importance of wild brook trout habitat to the watershed and the 2007 Agreement's documented performance, poor fish passage[55] and schedule movement towards delay,[56] DEP must address and include conditions for safe, timely and effective salmonid fish passage in the WQC prescriptions.

c. That the Applicant Provide Reasonable Public Access to a View of Hiram Falls and That the Recreational Facilities Plan Encourage Appropriate Use of the Resource, Rather Than Discourage Use by Limiting Access

Under 38 MRSA §**464 Classification of Maine Waters 4. General Provisions** … §464 4 (F)(3) "*The department may only… approve water quality certification pursuant to the [CWA], if the standards of classification of the water body and the requirements of this paragraph are met… The department may issue a discharge license or approve water quality certification for a project affecting a water body in which the standards of classification are not met* ***if the project does not cause or contribute to the failure of the water body to meet the standards of classification***." (emphasis supplied). Here the Project is clearly contributing to the failure of the Saco River, specifically the dewatered section immediately downstream of the dam, to meet applicable Class AA or A standards - of "*ecological, social, scenic or recreational importance*" and "*recreation, in and on the water*." Given the circumstances discussed extensively in these comments and other submissions the WQC cannot be approved.

[54] MDIFW Comments on the Final License Application for the Hiram Hydroelectric Project (FERC No. 2530), page 2.
[55] Brookfield 2020 Saco River Diadromous Fish Passage Report dated February 2021.
[56] Brookfield letter, Subject: Saco River Fish Passage Assessment Agreement Amendment for Brookfield White Pine Hydro LLC's Cataract Project (No. 2528), Skelton Project (No. 2527), Bar Mills Project (No. 2194), West Buxton Project (No. 2531), Bonny Eagle Project (No. 2529), Hiram Project (No. 2530) dated May 8, 2019.

The recurring vandalism that the Applicant itself has documented shows the Hiram Project to be currently unsuitable for recreation, a designated use required by Maine law.[57] Since the last license for the Hiram Project was issued on December 22, 1982, the following project remediation measures have been allowed to deteriorate or have been fenced off, all dates are approximate:

1) Nearby parking for the Fisherman's Trail (east bank) - fenced off ~2003
2) Nearby parking for west bank view of Hiram Falls (when watered) - fenced off ~2014
3) Access to west bank view of Hiram Falls (when watered) and informal picnic area - fenced off ~2014
4) Nature Study Area - deteriorated to the point of being unusable, greatest deterioration since ~2014
5) Scenic Overlook - no longer provides a view of the falls (when watered) or water since ~2015
6) Portage Trail to terminus that is constantly watered - not included in Recreational Facilities Inventory provided 2019 in the initial Study Report. This was a recreational facility that had been in use for years.
7) A 500-foot section of high quality fishing water, which was a popular regional fishing destination, was eliminated by dewatering ~2008.

Assuming that conditions placed on the project during the last relicensing provided some measure of adequate site remediation, the loss of the above makes that no longer the case. The Applicant's approach seems to be to prevent the public from accessing the river so that it does not have to address the river's environmental needs.

The view from the east bank was allowed to overgrow; the view from the west bank has been fenced off. The FLA does not anywhere describe a reasonably accessible vantage point from which to view the falls when they are watered. The Draft WQC notes loss of the Overlook without comment or specific corrective action.[58] This is the preeminent feature of the project location and one that must be addressed as a first step in providing for appropriate recreational use of the project vicinity.

Recreational use is a designated project function, and the Applicant itself has amply shown that the area is too often **not** being used appropriately for recreation in virtually every FERC filing since the PAD. The project has lost the recreational features stated above; all that the Applicant has offered in return is a picnic table, a port-a-potty (during the summer months) and a smaller parking lot than the one it fenced off that it placed in an inconvenient location. Restoration of any or all of the removed project facilities noted above should be reconsidered in addition to restoring a view of the falls. Adequate parking must be provided; overall, parking has been reduced to about one-third of its former levels. Trails should provide access to a vista of the falls, the canoe portage should extend to a terminus that is watered throughout the year. On its present course, relicensing will unquestionably result in a reduction of, not improved recreational use of, the Hiram Falls vicinity and that is not the standard.

[57] 38 MSRA 38§464¶4
[58] L-007780-33-L-N DRAFT, page 6.

V - ADDITIONAL NOTE and CONCLUSION

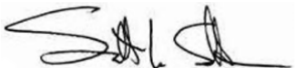
DEP has an important statutory delegation of authority to participate in the federal dam relicensing process. Should it choose to do so, as it has here, it must adhere to the statutory and legal requirements of the WQC process and legislative policy and intent regarding the water quality and multiple uses of Maine waters.

It should be noted that MDEP summarized many pages of documentation, analysis and comment filed to the MDEP docket by Sebago TU, as well as the ten comments by members of the public that are part of the record, in about half of a page.[59] The suggestion that fish passage arrangements for 2032 be renegotiated under the 2007 Agreement contained therein are insufficient for the reasons previously stated. With the exception of MDIFW, which has participated subject to the limits of the 2007 Agreement, state and federal agencies have been largely absent, apparently either because of: the provisions of the 2007 Agreement, higher priorities, asset limitations during the current high volume of relicensing in Maine, or a desire to distance themselves from the vandalism in the downstream access area that is a recurring theme in the relicensing and potential source of political embarrassment. Agency silence or inability to support the relicensing makes consideration of public comments essential, and the Draft WQC appears to largely ignore the details and substance of them. This is unacceptable.

The narrative standards for Class A waters must be met and DO and macroinvertebrate studies must be redone and meet applicable sensor location standards in locations in accordance with established DEP protocols for the project to receive a Maine Water Quality Certification. As was the case with the Ellsworth Project, regardless of how DEP reacted to study data presented by the Applicant, the burden is on the Applicant to meet applicable water quality standards. Should Brookfield meet narrative and numeric requirements at some future time, the measures outlined above must be prescribed as terms and conditions of the certification. In the alternative, lacking these reasonable provisions, the proposed Application will not meet the relevant and applicable state standards required for certification and DEP must deny the certification.

Respectfully,

Tuck O'Brien - President, Sebago TU Chapter
tuckobrien@me.com



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[59] L-007780-33-L-N DRAFT, page 25, PUBLIC COMMENTS.

ATTACHMENTS

A - Map of Specially Designated Saco River Segment

B - Map of area below Hiram Dam

C - Excerpt from Methods for Biological Sampling and Analysis of Maine's Rivers and Streams

D - 2018 Water Quality Study Sample Sites

E - Habitat Measurements in the Tailwater Section Downstream of Hiram Dam for Aquatic Macroinvertebrate Sampling

F - Location of datasonde downstream of Hiram Project

G - Water Temperature from the Hiram Impoundment and Tailwater and the Hiram Falls Reach

H - Dewatered Falls Pools and sonde placement

I - Photos from June 8, 2021 survey by Matt Streeter

J - Comments of local residents regarding historical presence of brook trout and other fish in the dewatered section of the river

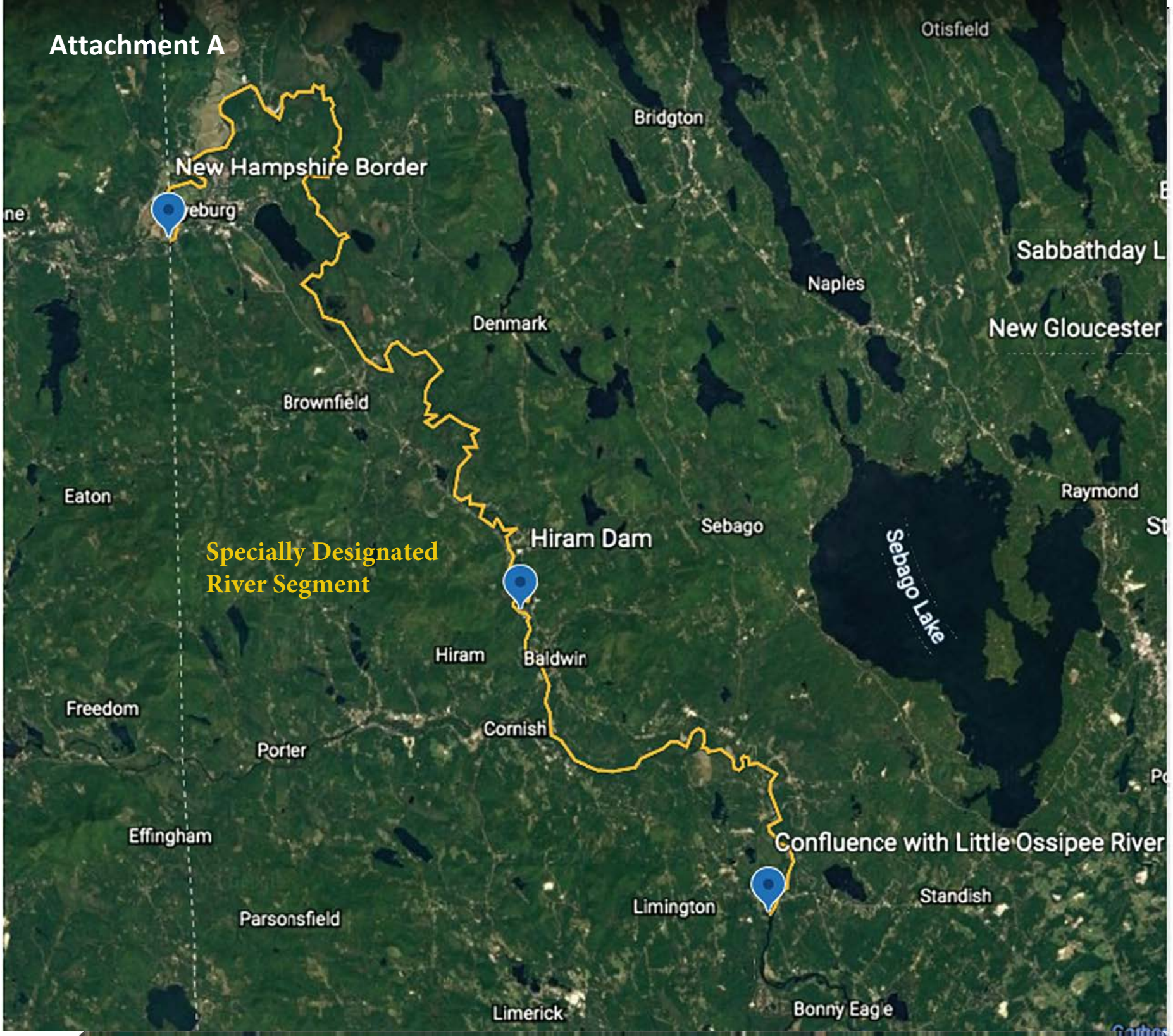
K - eComment of Mike Herman

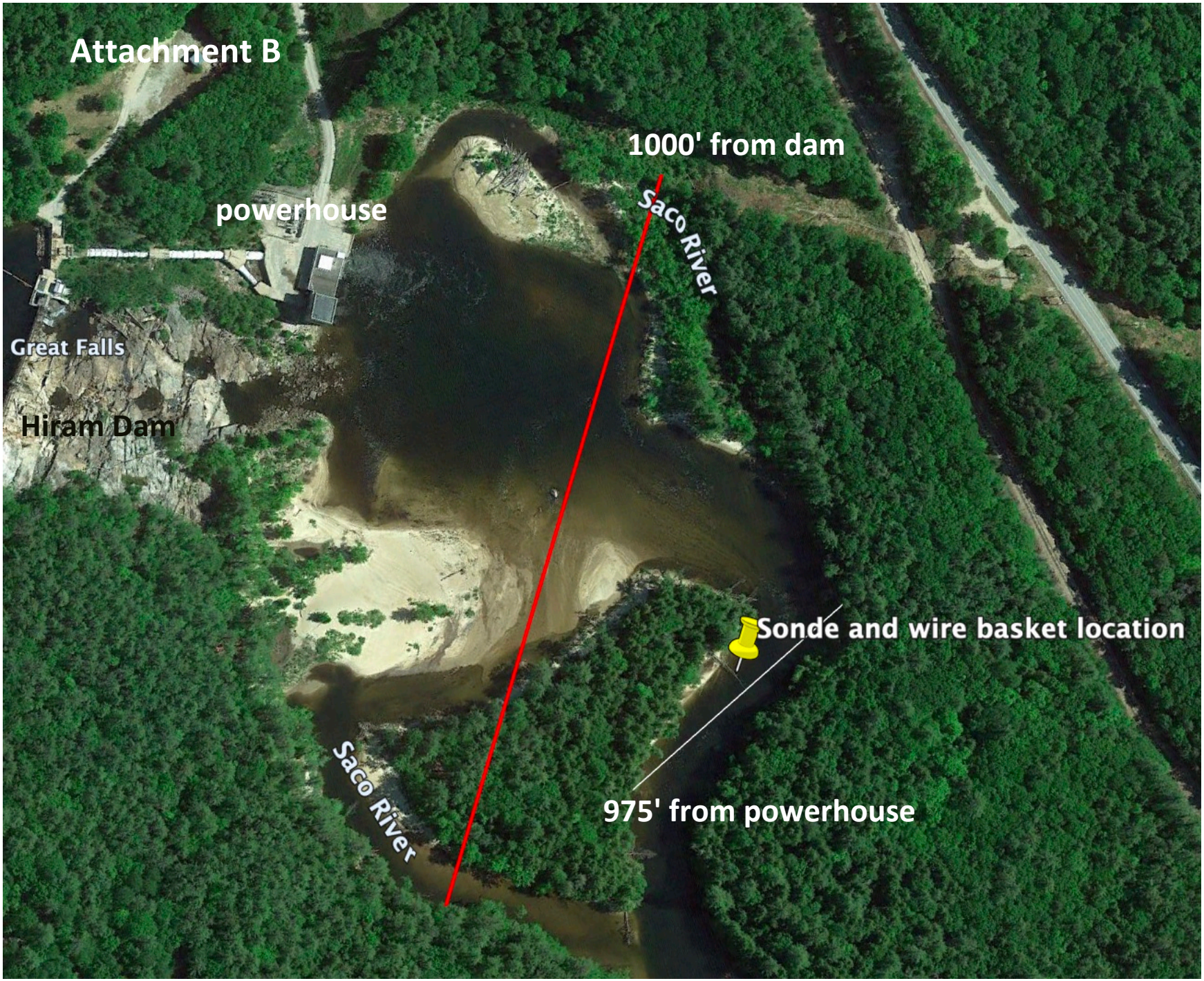
L - eComment of Patricia Barber

DISTRIBUTION

Electronic copy to Scott Boak – DEP

Filed to FERC Docket P-2530


Attachment A
Otisfield
Bridgton
New Hampshire Border
Sabbathday L
Naples
Denmark
New Gloucester
Brownfield
Eaton
Raymond
Sebago
Hiram Dam
Specially Designated
River Segment
Sebago Lake
Hiram
Baldwin
Freedom
Cornish
Porter
Effingham
Confluence with Little Ossipee River
Standish
Limington
Parsonsfield
Limerick
Bonny Eagle


Attachment B
1000' from dam
powerhouse
Saco River
Great Falls
Hiram Dam
Sonde and wire basket location
Saco River
975' from powerhouse

Attachment C

"2. Apparatus, Equipment, Supplies, Instruments

(1) Sampling devices

a) Rock-filled wire basket introduced substrate

Use: flowing wadeable, eroded, mineral-based bottom rivers and streams.

Description: cylindrical plastic coated or chrome wire, baskets with at least 1.5 cm spaces between wires, a hinged opening, and secure closure (Klemm, D.J. et al, 1990).

Substrate material: clean, washed, bank-run cobble, graded to uniform diameter range of 3.8 to 7.6 cm (1.5 to 3 inches) in size (#2 roofing stone).

Baskets must be filled to 7.25 +/- 0.5 kg (16 lbs +/-1 lb) of substrate material.

b) Rock-filled mesh bag introduced substrate

Use: small flowing streams, too shallow for rock baskets to be fully submerged.

Description: mesh bags of sufficient size to hold 7.25 +/- 0.5 kg of cobble substrate as described above, with at least 2.54 cm aperture mesh, and secure closures.

c) Closing introduced substrate cone

Use: deep, non-wadeable rivers having sufficient flow to have an eroded, mineral based bottom.

Description: cone shaped wire, or plastic coated wire basket filled with substrate material and closed by means of an inverted, weighted funnel (Courtemanch, 1984).

Substrate material: (see above Rock-filled wire basket substrate material)."[45]

[45] Methods for Biological Sampling and Analysis of Maine's Rivers and Streams, page 2.

Attachment D

FIGURE 4-3 2018 WATER QUALITY STUDY SAMPLE SITES

Attachment E

Table 2.1-4: Habitat Measurements in the Tailwater Section Downstream of Hiram Dam for Aquatic Macroinvertebrate Sampling, Saco River, July-August 2018

Macroinvertebrate Field Data Sheet

Log Number _____	Directions_____	Type of Sampler**RBG**
Station Number 1	_____	Date Deployed **7-18-18**
Waterbody **Saco**	_____	Number Deployed **3**
River Basin **Saco**	Lat-Long Coordinates	Date Retrieved **8-15-18**
Town **Hiram**	Latitude **43°39'52.49""**	Number Retrieved **3**
Stream Order **6**	Longitude **70° 36' 03.27"**	Collector(s) **P Leeper MME**

1. **Land Use** (surrounding watershed)		2. **Terrain**	3. **Canopy Cover**
☐ Urban	**X** Upland conifer	☐ Flat	☐ Dense (75-100% shaded)
☐ Cultivated	☐ Swamp hardwood	**X** Rolling	☐ Partly open (25-75% shaded)
☐ Pasture	☐ Swamp conifer	☐ Hilly	**X** Open (0-25% shaded)
X Upland hardwood	☐ Marsh	☐ Mountains	(% daily direct sun) **80%**

4. **Physical Characteristics of Bottom** estimate % over 12 m stretch							
[ ]	Bedrock	[50]	Cobble (2.5" – 10")	[30]	Sand (<1/8")	[ ]	Clay
[ ]	Boulders (>10")	[20]	Gravel (1/8" – 2.5")	[ ]	Silt	[ ]	Muck

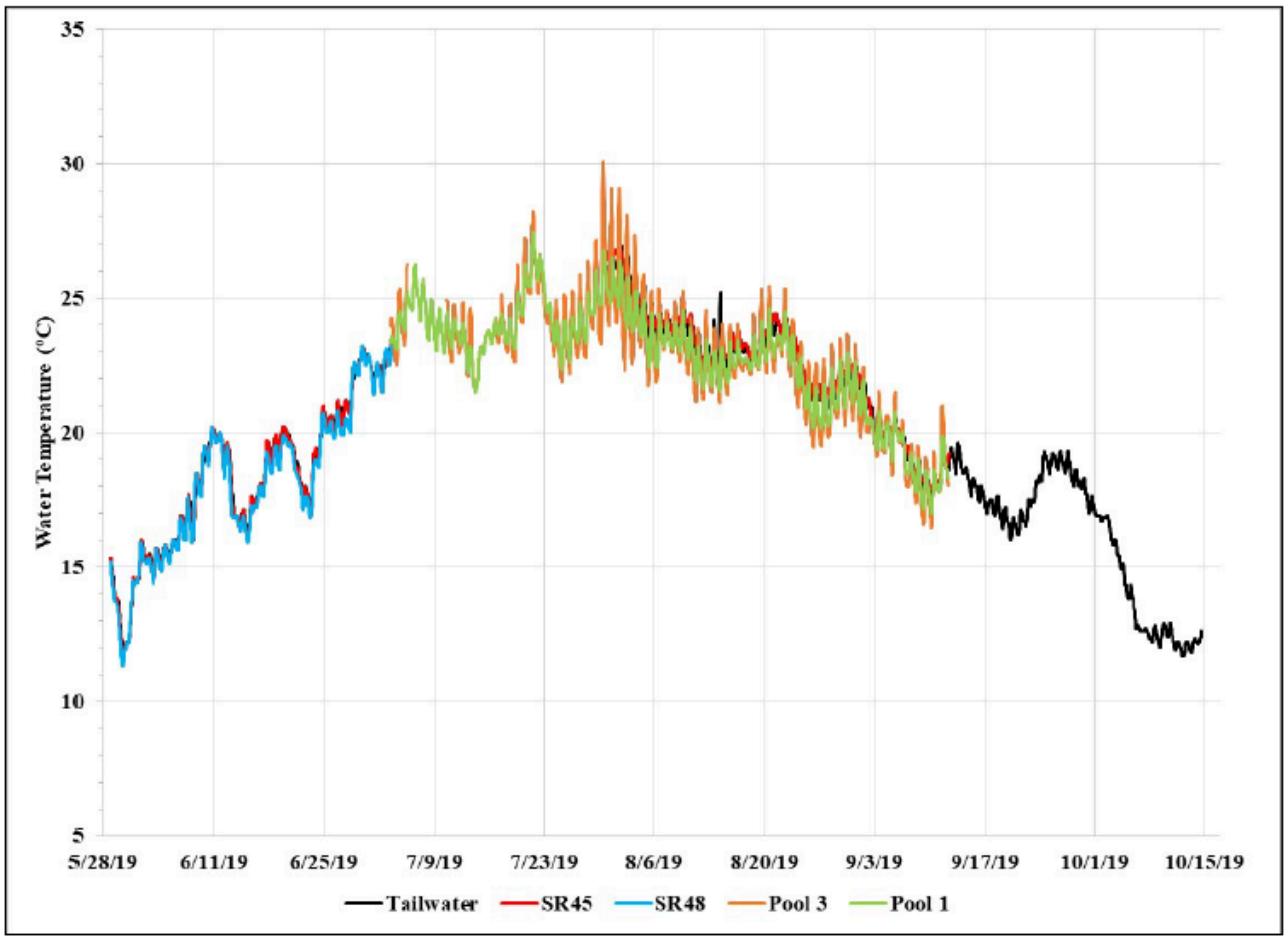
5. **Habitat Characteristics** (immediate area)		Temp. Probe # ☐ deployed	7. **Water Samples**
Time **1030h**	Time **1100h**		☐ Standard
Wetted Width **145'**	Wetted Width (m) Bank	6. **Observations**	☐ Other
Bank Full Width	Full Width (m)	7-18-18 –	Lab Number
Depth **4.1'**	Depth **4.2'**	Rooted macros- grass, attached filamentous algae	8. **Photograph**
Velocity **1.4fps**	Velocity **1.7fps**		Put-In **Yes**
Diss. O_2 (ppm)**8.0**	Diss. O_2 (ppm)**7.9**		Take-Out **Yes**
Temp (C) **24.2**	Temp (C) **23.0**		
Turbidity	Turbidity		
DO Meter #_____Cal? **Y** / N?	DO Meter #_____Cal? **Y** / N		

Attachment F

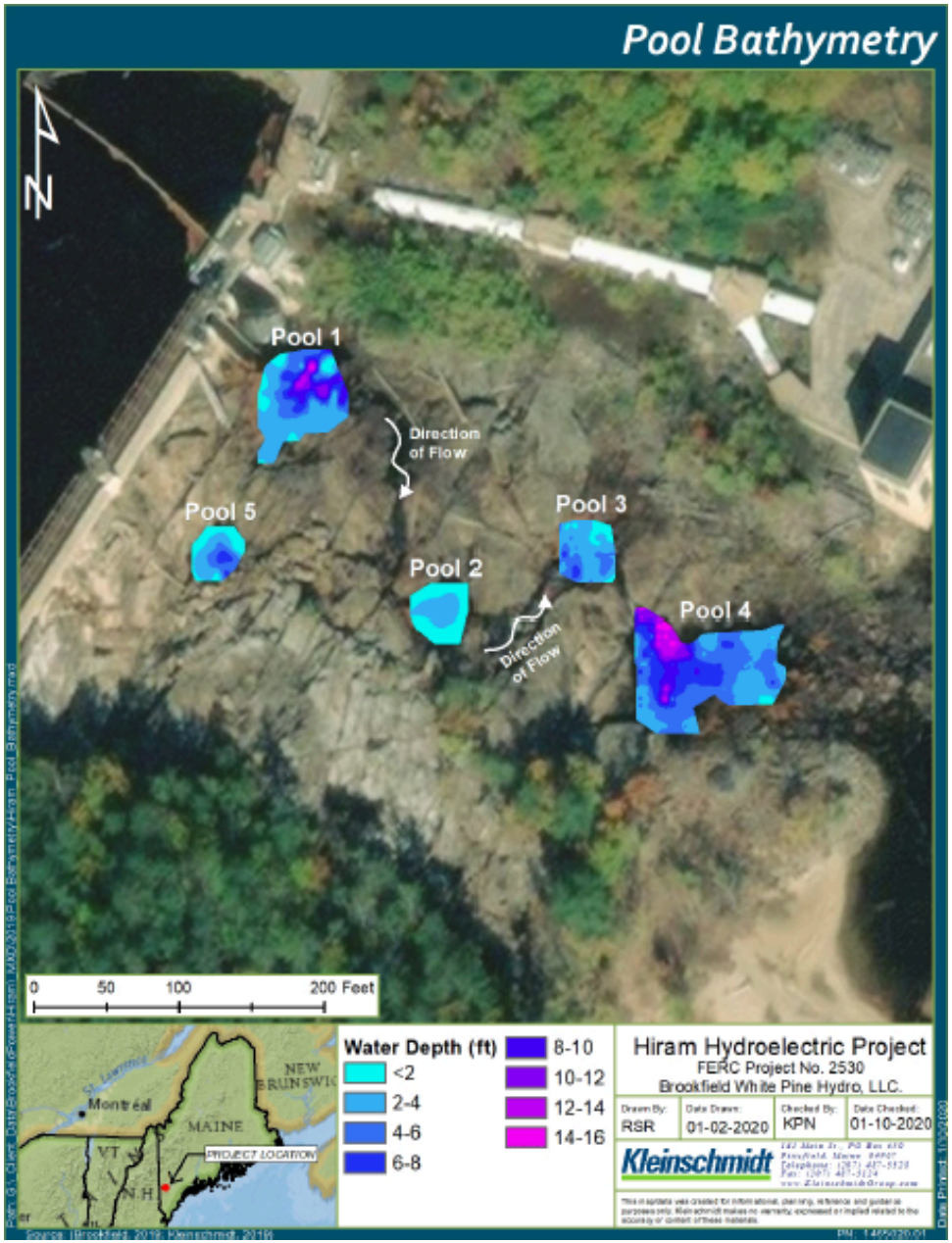
Photo 2.1-2: Location of datasonde downstream of Hiram Project

Attachment G

FIGURE 4-7 WATER TEMPERATURE FROM THE HIRAM IMPOUNDMENT AND TAILWATER AND THE HIRAM FALLS REACH, MAY 28 TO OCTOBER 14, 2019



Attachment H



Attachment I

Includes four photos from June 8, 2021 survey by Matt Streeter and overhead inagery

Photo 1, East side 1: This photo shows the east side of the 500-foot long cascade below Hiram Dam, which is dewatered 8 ½ months out of the year, viewed from the downstream end of the cascade. The photo demonstrates that the grade of the cascade is not steep. At moderate flows, it is easily walkable and fishable (I walked around this area with little effort), and passable by any variety of fish species. It is what fisher men and women would call “pocket water”, if it were not dewatered. MDEP’s analysis concluded that the cascade below the dam does not contain aquatic life, based apparently on a review of this section of the cascade. It can be clearly seen that the reason this section of river is devoid of sediment, vegetation, and related aquatic and terrestrial life is that it is in direct line of the narrow dam gates and the excessively high flows that occur when large releases are made, scouring everything but the larger stones out of the water’s path in this narrow channel. If those large flows were moderated and/or distributed across the full width of the cascade, the scouring effect could be mitigated, and if steady flows of 300 cfs were distributed continuously across the full width of the cascade, this scoured out section would recover appropriate sediments and aquatic plants to support a variety of aquatic life. Instead, this section of river is allowed only leakage flows of 2 cfs during 8 ½ months out of the year, interspersed with occasional concentrated, high velocity, destructive flows of water. In short, it is not anything in the nature of the landscape that has made this section of river devoid of life, but rather the operation of the dam itself.

Photo 2, East side 2: This photo shows the gates up close, with about 100 feet of river bottom. It demonstrates all the more starkly the scouring effect of releases from the dam gates on the substrate of the river in this section.

Photo 3, west side 1 - description on second page following.

Photo 4 , west side 2 - description on following page.

Photos 3 & 4, West side 1, West side 2 (above): These photos are characteristic of the west side of the cascade, which is not subjected to the concentrated flows of dam releases. Though dewatered, the pockets in this section at the time these photos were taken contained water and retained aquatic plant and animal life including algae, aquatic insects and tadpoles. Sand and gravel is abundant, and riparian plant species are present. As on the east side, the grade is moderate and with a modest flow would be passable by most fish species. This is attested by the comments of Bruce McLaughlin (Attachment L), a fisherman who fished this section of cascades from its base to the toe of the dam on a regular basis from the early 1980's through 2008. According to McLaughlin, "At that time, there was a fair amount of water flowing over the entire dam". Along with many other fishermen and women for whom Hiram Falls was a destination fishing spot at the time, he "fished all of the pools, starting at the upper ones just below the dam. There we caught decent sized brook trout, and as you descended the rock face to the lower pools and area across from the power house we caught pickerel, fallfish, brown trout, eels and bass". Even in the photos of this dewatered section, any fisher man or woman would recognize that this would be an abundantly populated section of river if it were not dewatered 85 percent of the time.

Photo 5, Google Earth Satellite view: Like the other photos, this satellite view of the cascade serves to show that the grade in this section of river is far from being too steep to sustain aquatic life and fish habitat. It also demonstrates the dramatic difference in habitat on the east side (top of photo) and the west side (bottom of photo), with the red line roughly demarking the two sides. The east side, where the high velocity gate releases periodically scour out the channel, there is no woody debris, no mid-size boulders, and no terrestrial vegetation. On the west side, all of these elements are present. In fact, from ground level it is apparent that the river channel extends some distance under the tree canopy.

Attachment J

Comments of local residents regarding historical presence of brook trout and other fish in the dewatered section of the river

Patty Barber, Hiram Maine 10/31/2021:

I remember when I moved to Hiram in 1999, my boys and I would frequently go to the Hiram Falls. The parking area adjacent to the upper ledges on the west side would always be full of cars, and you could walk the trails from above the dam, to the west side ledges, to the beach area, and along the canoe portage trail that ended well beyond the swimming area to spot where the Saco widened downstream. When Bruce and I first met, he would take me fishing at the Hiram Dam, teaching me how to tie on trout flies and fish the upper pools. My son caught a beautiful brown trout in the lower back pool adjacent to the west side of the falls one spring. I remember days of catching so many bass near the powerhouse that we were fished out in an hour's time! After Brookfield restricted access to the west side ledges and parking area, we have tried to fish the same areas, but now catch only the occasional bass or sunfish. Nothing close to what it was like before when more water was flowing over the whole dam.

Bruce McLaughlin, Hiram Maine 10/30/2021:

I was living in Portland in 1983, in my 20's, and working at a local motorcycle shop. My buddies and I would go fishing on Mondays, the day the shop was closed. A co-worker, Larry Collomy, had a brother who lived in Hiram, and told us about fishing at the Hiram Dam. My friends Bobby Doak, Eric Heath and myself set off for Hiram, and asked some of the locals at the store how to get to the Hiram Dam fishing area. They directed us to River Road, and the west side of the existing dam. We parked at the large parking area beside the trails that led directly to the ledges below the dam. At that time, there was a fair amount of water flowing over the entire dam. We could only access the west side, since the water flow precluded moving across to the east side. We fished all of the pools, starting at the upper ones just below the dam. There we caught decent sized brook trout, and as you descended the rock face to the lower pools and area across from the power house we caught pickerel, fallfish, brown trout, eels and bass. For years this was one of our favorite fishing destinations. In 1994 I moved and started my family, so I didn't fish Hiram for a while. In 2005 I moved to East Hiram, and with my boy and his local buddies Johnny and Drew, they were 10 or 11 years old at the time, we would all fish the Hiram Dam. Everyone had a great time, for they would always catch a ton of fish- bass, eels, pickerel, fallfish and a few brown and brook trout. Sometime around 2008, Brookfield increased the height of the dam, adding a rubber boom, and fenced off access to the parking and west side fishing trails. They limited water flow over the dam to the east side only, through the gates. Many of the pools on the west side dried up. We tried to fish the beach area, and the area across from the turbines, but the fishing fell off, and we would catch only the occasional bass and sunfish. The last few years, every time we have attempted to fish the pools and the river by the dam, we have been disappointed.

Attachment K

mike herman, Needhm, MA.

To whom it may concern at F E R C,
I am a Native of ME and a Property owner in Cornish.
I am writing this letter to express my feelings and thoughts about the relicensing of Hiram Dam, Project Number P2530. My Children, Grandchildren and I have enjoyed Canoeing, Kayaking, Fishing, Swimming and Picnicking on the Saco River near the dam, for many years!
Over the last 12-13 years we have seen a continued degradation of this area. I am not sure who is to blame but is sin to let what once was a beautiful Family Recreation Area fall into total disarray. We cannot go there any longer. The Dead Fish coming through the Turbine liter the banks downstream from the Dam. There are more fences, less Parking, more Trash and Broken Glass, all of which make the area less accessible and less desirable!
As the Licensing Body I am certain that you can put requirements on the power company, and possibly the town, to clean up this mess.
I realize that Hiram Dam does produce a good amount of clean energy, but at what cost? There is no reason that The Power Company and the Local Citizens cannot share this beautiful area.
I would like to suggest; a Major Clean Up, More Parking, More Patrols by Local, State and Environmental Law enforcement. It is also imperative to add and a Fish Ladder which will allow clean, safe passage for fish most of the year, with out compromising the efficiency of the dam!
Thank you for your careful consideration in this matter.
Regards,

Michael Herman

Attachment L

PATRICIA A BARBER, Hiram, ME.

I live in East Hiram and have been fishing, swimming and hiking in and around the Saco River and the Great Falls area for over 20 years. I have seen first hand the influence Brookfield's Hiram Dam has had on the waterways, wildlife, and surrounding recreational areas. The dam has destroyed any semblance of a flowing river. The Great Falls are not falls, but a series of rocks and stagnant pools. The falls are almost completely dewatered most of the summer. I have walked up the entire rock face, dry as a bone, from the sandbar/beach area to just below the concrete dam. I have tried to fish the little pools that remain in the hollowed out rock areas and they are devoid of fish- not even frogs or waterbugs are present. 99.9% of the water of the Saco River flows from the impoundment behind the dam through the turbine blades to the pool by the sandbar.

These falls were essential to the local Native People's populations. They supported renown native brook trout, American Eel, and Atlantic Salmon fisheries. They were a great recreational destination with an overlook, a diner, a Great Falls side park and picnic area, and swimming hole. These have mostly disappeared since the dam was built. Now there are chain link fences, metal gates, sketchy overgrown overlook and 'nature trail' areas, dewatered falls, and the only fish you can catch are bass, an invasive species.The beach and sandbar area below the turbines is still a popular swimming area, but I myself am afraid to swim out too far, fearful that the turbines will suck me under. Some users leave mounds of trash and rotted food, dig out shallow toilet areas in the sand, and camp out overnight and party against permission. The local townfolk and volunteers try to keep the area clean and safe, but it is a losing battle.

It is imperative for the health of the waterway and the lives that depend on it that there be a connection above and below the dam (NOT through the turbine blades as is present now). There needs to be a working, natural fish passage to allow the native run brook trout (there are viable Brookie feeder streams above the dam impoundment), American Eels (the Saco supports healthy eels that are decades old, only to be chewed up by the turbines as they try to navigate back to the Sargasso Sea to reproduce), suckers and other native fish species. The fish passage needs to be in place for when the mandated fish passages in the downstream Saco River dams are opened up to allow the Atlantic Salmon back up the river to lay their eggs. The flow over the falls needs to return to allow the river quality to return, to allow a more natural aquatic ecosystem.

The recreational areas need to be improved: better parking (the lower parking lot only holds six cars, and has a narrow, bottlenecked entrance), policing and maintenance for safety, bathroom facilities, and a more inviting presence- the industrial infrastructure, with the chain link fences, metal gates, trash and debris, aging powerhouse and warning signs lends an air of neglect, misuse and danger.

Brookfield and their partners have benefited greatly from taking and using all of the water from Great Falls to build their own profits. They owe a debt and some respect to the river, its wildlife, and the people who love and use the area. It's time Brookfield gave something back, to replace some of what was taken, to bring back life and a natural ecosystem to an ancient and beautiful place.

Patty Barber Hiram Maine