

March 29, 2023

Mr. Jim Amaral  
Chair, Planning Board  
Town of Alna, Maine  
1574 Alna Rd.  
Alna, ME 04535

Re: Public comment for Crooker Construction, LLC application for blasting at the Alna, ME quarry

Dear Mr. Amaral,

Please find public comments directed to the annual Crooker Construction application for blasting at their Alna, Maine quarry. I am a resident of Alna and live year-round on the Sheepscot River approximately 2.5 miles downriver as the crow flies from the quarry. Our family also has 140 acres of conservation land on the Sheepscot River some five miles downriver as the crow flies from the quarry site. For over 85 years our family has owned this property and has valued conserving it and improving the Sheepscot River watershed and fishery.

A number of individuals in the community have expressed concerns about the applicants' steady expansion over the past several years, and I offer my own observations about the application and also offer several proposed permit conditions and requests of the applicant below.

## 1. Significant expansion in quarry operations

Per Exhibit G, the rate of expansion at the quarry as measured several different ways shows a steady and significant expansion without the commensurate level of scrutiny and evaluation of the impacts the expansions may be having on the surrounding environment and community. Many of the studies done on the Crooker operation were performed decades ago, and should be renewed before any further growth is permitted.

Requests by the applicant for 2023 increases in operations nearly doubling the yards of production from 53,188 yards in 2022 to 100,000 yards in 2023 (See Exhibit G) should be carefully evaluated now that a moratorium ordinance has been passed at the Town Meeting on 3/25/23 which prohibits expansion.

The number of blast days in held in 2022 was 14 and the applicant is requesting a 36% increase to 19 in 2023 which should also be carefully evaluated now that the Town moratorium ordinance has passed. Also, the applicant is requesting up to 4 blast days per month in 2023 when in 2022 there was never a month of more than two blast days, representing a 100% requested increase. Lastly, the applicant is requesting up to 3 blasts per day in 2023, when there was never a blast day of more than two blasts in 2022 (See p.11-12 of the application).

**Proposed condition: Cap approved 2023 levels of actual blast days, number of blasts per day, explosives used, holes per year, feet of bore hole and yards of production at 2022 actual levels or less, until further impact studies are performed (see items 2 through 6 below) and/or a local mineral extraction ordinance is developed.**

## Footprint Expansion

It appears from p.10/66 of the application (See Exhibit F) that the applicant plans to significantly expand the footprint of their 2023 working pit from the 2022 footprint. It is unclear from the application and diagram what current size the quarry operates at and to what size the applicant is requesting. The map on page 10 of the application lacks specificity around “2023 work area” size and 2022 quarry size and quantitative detail to scale on the footprint(s).

Given the significant water aquifer, wetlands and Sheepscot River in the area, it is suggested that the Town consider limiting the applicant to a one-acre aggregate working pit size at any one time – see items 2 and 3 below for further consideration.

In addition, requests by the applicant for 2023 increases in work area size should be carefully evaluated now that a moratorium ordinance has passed at Town Meeting 3/25/23 which prohibits expansion until a local ordinance is developed.

**Proposed condition: The application is incomplete and the diagram on page 10 must be clarified to provide more precise detail to scale on the exact quarry size, footprint and proposed expansion size and footprint.**

**Proposed condition: The applicant is limited to a one acre aggregate working pit size at any one time, or the 2022 size, whichever is smaller, until further studies are performed and/or a local mineral extraction ordinance is developed.**

## 2. Ensuring Water Quality

If permitted to expand operations, the applicant has not demonstrated that their proposed expanded quarry operations will not lower water quality, and has not committed to a broader water quality testing program commensurate with their past and planned expansions. The last pre-blast assessments on water quality were performed in 2018, and should be renewed and enlarged exponentially to scale with their past and planned expansions since then. Exhibit G shows the steady rate of growth at the quarry site measured several different ways, and the scale and quantity of deep well and water quality monitoring should keep pace with these levels of growth. As an example, the use of 3,504 lbs. of explosives in 2018 vs. 63,970 lbs. of explosives in 2022 represents an exponential 18-fold level of growth, with resulting potentially toxic leachates, by-products and residues from the explosions not to mention increases in noise, vibration, potential groundwater impacts, etc.

Indeed, one elevated level of the petroleum hydrocarbon naphthalene suggestive of a petroleum spill was detected in one deep monitoring well (see Exhibit C) in 2019.

It is unclear from the record the exact number of actively monitored wells in place, as the numbers and locations appear to have changed from 1993 to present. The applicant seems to focus on 8 wells noted on p. 36-40 of the application yet there are many more that have been monitored in the past (See Exhibit H) and it appears there is lack of consistency in monitoring data on a larger set of wells.

Lastly, in conversations with state regulators there are reports that the applicant is utilizing the Whitefield Pit/Alna Quarry as a landfill to import “rock dust”, fines or other processing waste from other locations into the site to use as infill. The community is not aware of the applicant holding any State or local permits to operate a landfill at the site, and very little is known about this practice, the scale of this activity, its purpose(s), where material is coming from, the volume and content of the material, testing results for composition/hazardous compounds, its suitability as fill when hydrated,

etc. The applicant has also not commented on how these fines might affect water quality, turbidity and/or interfere with natural groundwater flow as the fines permeate the aquifer.

**Proposed condition: The applicant shall expand the groundwater quality and turbidity testing program on a quarterly basis to include the water source wells of all abutting properties in addition to the applicants' newly drilled monitoring wells, the 20 monitoring wells installed by SME in 2001 and those recommended in Exhibit F (or pending independent third-party hydro geologic survey recommendation) to match the size and scale of their past and planned expansion, and report results to the Alna planning board annually.**

**Proposed condition: The applicant shall halt all landfill activities of any fill material being brought into the quarry site for any reason until detailed information is provided to the Alna planning board on this practice, material composition, volume, intended use(s), etc.**

### **3. Wildlife Habitat/Spring Brook Impacts**

A 2001 stream hydrologic study indicated potential water temperature and habitat impacts to Spring Brook and its tributaries that flow into the Sheepscot River. See Exhibits A and D. This survey is now over twenty years old, and because of climate change effects in Maine that have occurred over this time and because of intensified vegetation management practices employed by CMP in the electricity transmission corridor that this brook runs through, a new hydrologic characteristics and temperature survey of this brook and related streams and brooks and all potential impacts to the habitat is warranted.

**Proposed Condition: The applicant shall have an independent third party perform an updated evaluation of stream hydrologic characteristics of all nearby streams, brooks and water features as was done in 2001, and report the results to the Alna planning board.**

### **4. Air Quality/Particulate Emissions Concerns**

The applicant has not adequately explained the effects of their past and planned quarry expansion on air quality/particulate emissions with regard to their rock crushing or other apparatus on-site. There is no data reporting on air quality at the applicants operation. In addition, the applicant had air quality violations in 2009 that resulted in a \$2,500 fine by the DEP. Therefore some level of monitoring and reporting is appropriate given the operational growth highlighted in Exhibit G since 2009.

For news article see:

<https://lcnme.com/currentnews/crooker-fined-regarding-whitefield-pit-operation/>

#### **Crooker Fined Regarding Whitefield Pit Operation**

May 31, 2009 at 12:00 am

Violation of an air emission license condition at a Whitefield gravel pit has been resolved. A consent agreement dated March 25 between Harry C. Cooker & Sons Inc., of Topsham, the Dept. of Environmental Protection (DEP), and the state Attorney General's Office requires payment of a \$2500 penalty.

**Proposed condition: The applicant shall provide air quality data for the past 15 years, perform air quality testing quarterly and report all data to the Alna planning board annually.**

## 5. Road, Traffic & Safety Concerns

The applicant has not demonstrated that there will be no impact to public safety with the additional increase in traffic and wear on roads to and from the quarry resulting from their past and planned expansion. The last traffic study completed was over thirty years ago, and a new modern study should be completed by an independent third party with updated and modern data (See Exhibit B).

As a resident on Alna that travels up and down Rt. 218 (Alna Rd.) a minimum of twice per day and often several times per day, I can attest to several close call interactions with gravel trucks on Rt. 218 that are straddling or over the center line, causing me to veer onto the road edge or shoulder. Rt. 218 is historically poorly maintained and the shoulders are soft and dangerous in some areas. I believe that excess wear and tear on this road is due to the heavy quarry loads coming from and going to the applicants' site. I believe these impacts are measurably greater than the loads seen on typical "back roads", and feel a new traffic and road wear study should be performed. Another example of growth outpacing monitoring may be shown on Exhibit G where 3,989 yards of material was harvested in 2018 and this has grown over thirteen fold to 53,188 yards in 2022. Assuming an average weight of 2,000 lbs. per square yard, this additional 49,199 yards of material harvested equates to 98,398,000 additional lbs. of load on our local roads last year.

These loads have negative and disproportionate impacts to state and town services such as snow plowing, road repairs and repaving, road noise, excess wear and tear on resident vehicles and road safety.

**Proposed condition: The applicant is required to hire an independent third party to update the 1992 Traffic and safety study to evaluate the impact of quarry operations on road quality and safety conditions coming from and going to the site, and to provide the results of this study to the Alna planning board. In addition, the applicant shall provide data to the planning board for the past 5 years and annually in the future indicating the total number of trucks entering or leaving the site each month with loads in excess of 3 yards.**

## 6. Noise Pollution, Vibration and lower property values

As noted in Exhibit E, the applicant exceeded the DEP decibel limit levels of 129 Db on 6 occasions in 2022 (prior year data unavailable to determine if this is a frequent occurrence). While the Town of Alna limit of 133 Db was not exceeded, a lower value should be evaluated to at least match the DEP level. The applicant should be more mindful of the Alna building code ordinance where excess noise is considered a nuisance which can lead to enforcement action and revocation of the business permit. It is also unclear why and when the decibel limit was increased from 100 Db to the current 129 DEP/133 Town Db levels – as noted in Exhibit E the DEP permit issued in 1988 set a limit of 100 Db at the site boundary.

In addition, as noted in Exhibit E, the recommended USBM air blast overpressure threshold of 0.10 upon which window glass can fracture was routinely exceeded at the Weeks location. Excessive noise and vibration felt at the site has been a frequent complaint I hear when talking with members of the community, and the planning board should consider additional methods to evaluate these levels surrounding the quarry. It is also unclear where and when the "local criterion" and "local agreement" for peak particle velocities at certain peak frequency levels was made (See Exhibit E).

There is a perceived reduction in property values in the area surrounding the applicants' operations, and further study should be considered in this area before permitting additional growth in quarry activities.

**Proposed conditions:**

- A. The applicant will augment noise pollution monitoring with a minimum of 10 additional locations as recommended in Exhibit F and report this data to the Alna planning board annually.**
- B. The applicant will report within 24 hours to the Alna code enforcement officer and municipal town office each time a noise threshold is exceeded.**
- C. The applicant shall provide documentation to the Alna Planning board indicating how and when the 100 Db town noise limit was increased, and how and when the “local agreement” on peak particle velocity at certain peak frequency levels was decided.**
- D. The applicant shall have an independent third party real estate evaluation conducted to assess the impact on property values in the area surrounding the Alna quarry over the life of operations, and to report all findings to the Alna planning board.**

Thank you for the opportunity to provide public comment on this application as a concerned resident of Alna and property owner along the Sheepscot River and for carefully considering my comments and suggested permit conditions. Should you have any additional questions, please do not hesitate to contact me at [philbrick7@aol.com](mailto:philbrick7@aol.com) or 207-380-6973.



Jeff Philbrick  
Alna, ME

# Exhibit A: Impacts to Spring Brook

p. 12/46: 2002 Town of Alna application for site plan development

## VI(A)(1)(v). Wildlife Habitat/Properties of Historical Significance

WAI performed a review of significant wildlife habitat at the Site and in the surrounding area. The Maine Natural Areas Program has indicated that “their data does not show any rare exemplary botanical features mapped within the project area”. According to correspondence from the Maine Department of Inland Fisheries and Wildlife (MDIF&W), “no significant wildlife habitat has been identified on the project Site”. However, MDIF&W did indicate that “a significant fisheries resource exists within the vicinity” and questioned possible secondary impacts that could potentially result from the expansion of the gravel pit, particularly if excavation occurs below the water table. In the current proposed expansion, a separation of two feet or more must be maintained between the depth of excavation and the location of the high (i.e., wet season) groundwater table. However, in response to the MDIF&W correspondence, which was in reference to a small stream called Spring Brook (shown on Site Plan – Attachment A), SME conducted a field evaluation of the stream during August and September 2001. Based on SME’s observations and understanding of the Site, the stream temperature of Spring Brook will not be significantly affected by the proposed Whitefield Pit expansion. SME’s letter report on this issue is included as Attachment G.

In addition to reviews of wildlife habitat, the Maine Historic Preservation Commission (MHPC) was contacted regarding the proposed expansion. The MHPC has indicated “there are currently no archaeological properties listed on the National Register of Historic Places within the immediate vicinity of the proposed project location and,

## Exhibit B: Archaic traffic study

p. 12/46: 2002 Town of Alna application for site plan development

### VI(A)(1)(t). Vehicular Traffic

Based on Maine DEP Site Location of Development/Condition Compliance and Modification Finding of Fact Permit No. L-00758-80-H-M (Corrected Order issued November 20, 1992), vehicular traffic at the Site is limited to 250 truck trips per day between the permitted hours of operation (6:00 AM to 6:00 PM Monday through Friday, infrequently Saturday, including start-up). The proposed development will not result in increased vehicular traffic at the Site or to and from the Site.

# Exhibit C: Petroleum Hydrocarbon detected at well

p. 31/483 DEP application for variance to blasting below the seasonal high water table

TABLE 2-2

SUMMARY OF BASELINE MONITORING RESULTS  
FOR DEEP BEDROCK MONITORING WELLS  
ALNA QUARRY AND WHITEFIELD GRAVEL PITS

Parameter	B-19-1	B-19-2	B-19-3	B-19-4
Groundwater Depth (ft-BGS)	9.65 to 18.26	17.93 to 22.45	64.55 to 66.05	0.30 to Flowing
Groundwater Elevation (ft-NAVD88)	299.88 to 308.49	266.84 to 271.36	201.27 to 202.77	234.36 to 234.36
Specific Conductance ( $\mu\text{mhos/cm}$ @ 25°C) <sup>2</sup>	117 to 120	116 to 129	551 to 592	159 to 176
pH (standard unit)	7.2 to 8.8	6.7 to 8.3	8.5 to 10.5	7.9 to 8.3
Temperature (°C) <sup>3</sup>	9.1 to 10.6	10.1 to 12.9	10.2 to 11.6	10.3 to 11.2
Eh (mV) <sup>4</sup>	149 to 293	122 to 338	-282 to 121	-71 to 322
Dissolved Oxygen (mg/L) <sup>5</sup>	2.7 to 3.1	1.9 to 3.7	$\leq 0.1$ to 0.8	$\leq 0.1$ to 1.9
Turbidity (NTU) <sup>6</sup>	4.6 to 19.9	$\leq 0.1$ to 36.2	$\leq 0.1$ to 13.6	4.3 to 12.5
Iron (mg/L)	3.07 to 15.8	0.264 to 12.1	1.94 to 6.82	3.21 to 12.2
Manganese (mg/L)	0.044 to 0.119	$\leq 0.01$ to 0.107	0.041 to 0.237	0.081 to 0.200
Nitrate (mg/L)	$\leq 0.1$ to 1.37	$\leq 0.1$	$\leq 0.1$	$\leq 0.1$
Extractable Petroleum Hydrocarbons (EPH) ( $\mu\text{g/L}$ ) <sup>7</sup>	All Non-Detect	All Non-Detect	All Non-Detect	See Note 1
Volatile Petroleum Hydrocarbons (VPH) ( $\mu\text{g/L}$ )	All Non-Detect	All Non-Detect	All Non-Detect	All Non-Detect

Notes:

<sup>1</sup> There was one detection of naphthalene at B-19-4 at a concentration of 0.59  $\mu\text{g/L}$  on October 31, 2019. Naphthalene was not detected above the laboratory detection limit of 0.4  $\mu\text{g/L}$  at B-19-4 on June 4, 2020, September 29, 2020, and May 25, 2021.

<sup>2</sup>  $\mu\text{mhos/cm}$  @ 25°C – micromhos per centimeter at 25 degrees Celsius

<sup>3</sup> °C – degrees Celsius

<sup>4</sup> mV – millivolts

<sup>5</sup> mg/L – milligrams per liter

<sup>6</sup> NTU – Nephelometric Turbidity unit

<sup>7</sup>  $\mu\text{g/L}$  – micrograms per liter

The baseline groundwater quality data was compared to the Maine Center for Disease Control (MECDC) drinking water guidelines, which used the U.S. Environmental Protection Agency (U.S.EPA) drinking water standards and health advisory levels.<sup>1</sup> There were no health-based MECDC drinking water guidelines or U.S.EPA drinking water standard and health advisory level exceedances for the parameters analyzed.

Results that fell outside of these guidelines are limited to U.S.EPA secondary drinking water regulations, which are based only on aesthetic considerations, and are summarized below:

- pH was outside of the secondary drinking water regulation range for aesthetic considerations (6.5 to 8.5) during one or more baseline monitoring events at B-19-1 and B-19-3;
- Iron was above the secondary drinking water regulation for aesthetic considerations (0.3 mg/L) during one or more baseline monitoring events at B-19-1, B-19-2, B-19-3, and B-19-4; and

<sup>1</sup> United States Environmental Protection Agency, 2018. 2018 Edition of the Drinking Water Standards and Health Advisory Tables.



## Exhibit D: Archaic 2001 stream hydrologic study

p. 26-30/46 2002 Town of Alna site plan development permit application

**SME**

*Sevee & Maher Engineers, Inc.*  
Waste Management and Hydrogeologic Consultants

October 12, 2001

01018

streamsurvey.doc

H.C. Crooker & Sons, Inc.  
Attn: Tom Sturgeon, Engineer  
Route 196  
P.O. Box 5001  
Topsham, ME 04086-5001

Subject: Evaluation of Stream Hydrologic Characteristics  
Whitefield Gravel Pit  
Alna and Whitefield, Maine

Dear Mr. Sturgeon:

This letter provides a summary of our findings during a field evaluation of a stream located southeast of the existing H.C. Crooker & Sons, Inc. (Crooker) Whitefield Gravel Pit and proposed expansion area. The stream is known locally as Spring Brook. This stream was discussed in a July 17, 2001 letter from William Woodward, Fishery Biologist for the Maine Department of Inland Fisheries and Wildlife (MDIFW) to Jean Lallier of Woodlot Alternatives. In his letter, Mr. Woodward noted concerns relating to potential impacts of the proposed gravel pit expansion on the temperature of water in the stream. The stream is fed by a number of cold water springs, at least one of which originates from the sand and gravel deposit being mined at the Whitefield Pit. Figure 1 (attached) shows the headwaters of the stream in relation to the proposed gravel pit expansion. The proposed expansion will not include any physical modification of the stream or the stream valley.

Sevee & Maher Engineers, Inc. (SME) conducted a drilling program in August and September 2001 as part of a hydrogeologic investigation for the proposed expansion area. During the drilling program, SME inspected Spring Brook from where it originates near the southern boundary of the proposed expansion to the road crossing at Rt. 218, approximately 4,000 feet southeast of the site (Figure 1). On August 29, 2001, the first SME survey of Spring Brook was conducted. This survey included locating springs that feed the stream and observing the geologic characteristics of the stream valley and streambed. A second survey of the stream was conducted on September 6, 2001 and included measurements of water temperature at several locations. The results of SME's inspection of the stream are summarized below. Based on our observations and understanding of the site, the stream temperature will not be significantly affected by the proposed expansion of the Whitefield Pit.

Page 1 of 4

## Exhibit D continued

p. 26-30/46 2002 Town of Alna site plan development permit application

### PHYSICAL CHARACTERISTICS OF STREAM

As shown in Figure 1, approximately 35 springs were identified in the valley of Spring Brook. The flow emanating from these springs varied from a trickle to several gallons per minute (gpm). In addition to the springs identified on Figure 1, numerous small seeps were observed on the hillsides at dozens of locations throughout the stream valley. Most of the seeps and springs appeared to originate at the contact between sand and gravel deposits and the underlying till. During the drilling program in the expansion area, it was noted that a layer of till several feet thick rests on top of bedrock at most locations. The till, being of lower hydraulic conductivity than the sand and gravel, holds up water from infiltrating into the bedrock, resulting in breakouts of water to the ground surface (i.e., springs) in the steep relief of the stream valley walls. At the time of the survey, which followed several weeks of very dry weather, several springs were observed to be dry.

The spring that originates near the Crooker site (see Figure 1) is located about 450 feet southeast of the expansion boundary and feeds a small tributary that enters Spring Brook approximately 900 feet downstream from the spring location (1350 feet from the expansion boundary). The flow of this tributary increases along its length, indicating that groundwater is discharging to the tributary between the observed spring location and the confluence with Spring Brook. It is estimated that the spring accounts for greater than 10 percent of the total flow in the stream. The main body of Spring Brook is about 3 feet wide where it crosses Rt. 218. The stream varies in width upstream of Rt. 218 and is in some locations less than 2 feet wide. Since many seeps, springs and small tributaries contribute water to Spring Brook, the flow increases along the entire length of the valley. The bottom of the stream typically consists of sand and gravel, except in the steeper sections where the bottom is mostly made up of cobbles and boulders. About halfway between the Crooker site and Rt. 218, the stream crosses a power line, where the tree cover is greatly diminished. In all other observed locations between the Crooker site and Rt. 218, the stream runs through wooded areas.

### TEMPERATURE SURVEY

Mr. Woodward noted his letter that the MDIFW measured the temperature of the water in Spring Brook at the Rt. 218 crossing to be 14.5 °C on August 5, 1999. SME's temperature survey was conducted in mid-morning on September 6, 2001. The temperature of the stream water at Rt. 218 during SME's survey was 11.9 °C. The colder temperature measured during SME's survey was probably due to season, time of day and/or the weather as compared to conditions during MDIFW's measurements.

During SME's survey, several temperature measurements were made at various locations along the stream and in springs feeding the stream. The coldest temperatures measured were at the origins of springs and seeps where a significant flow was observed.

## Exhibit D continued

p. 26-30/46 2002 Town of Alna site plan development permit application

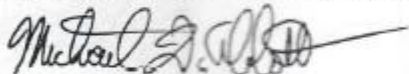
temperatures in the stream for fish habitat will be to protect or enhance the tree cover along the stream.

During the drilling program in the Whitefield Pit expansion area, a monitoring well (B-211) was installed just upgradient from the large spring. If necessary, this well can be used as a point for measuring groundwater temperature downgradient from the pit. Temperature measurements taken in the well and in the spring itself can be used to monitor the potential effects of future mining operations.

If you have any questions or comments regarding this letter, please do not hesitate to contact us.

Sincerely,

SEVEE & MAHER ENGINEERS, INC.



Michael D. Abbott, P.E., C.G.  
Project Engineer/Geologist

cc: Steven Patch (SME)  
Mark Christopher (Woodlot Alternatives, Inc.)

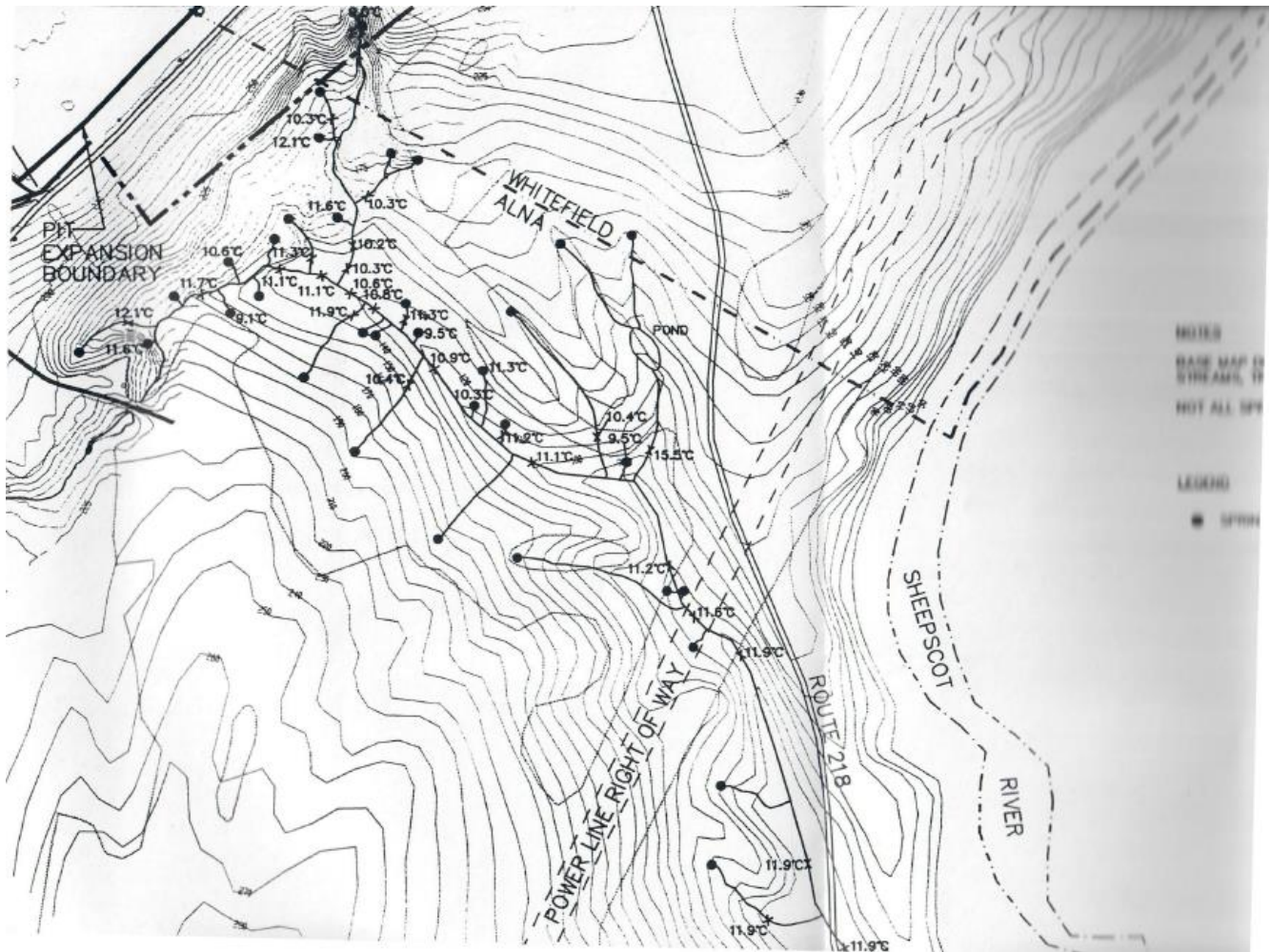
Attachments:

Figure 1 - Spring Brook Evaluation Map



# Exhibit D continued

p. 26-30/46 2002 Town of Alna site plan development permit application

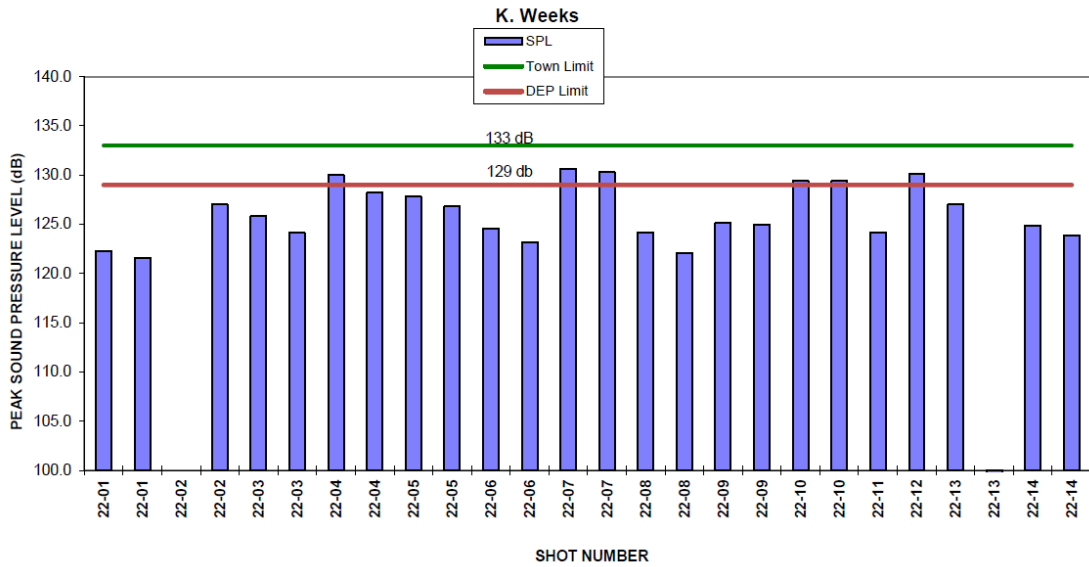


# Exhibit E: Excessive noise pollution

p. 35/66 of the Town of Alna 2023 Blast Permit Application

Alna Quarry  
2022 Permit Season

Sound Pressure / Air Blast

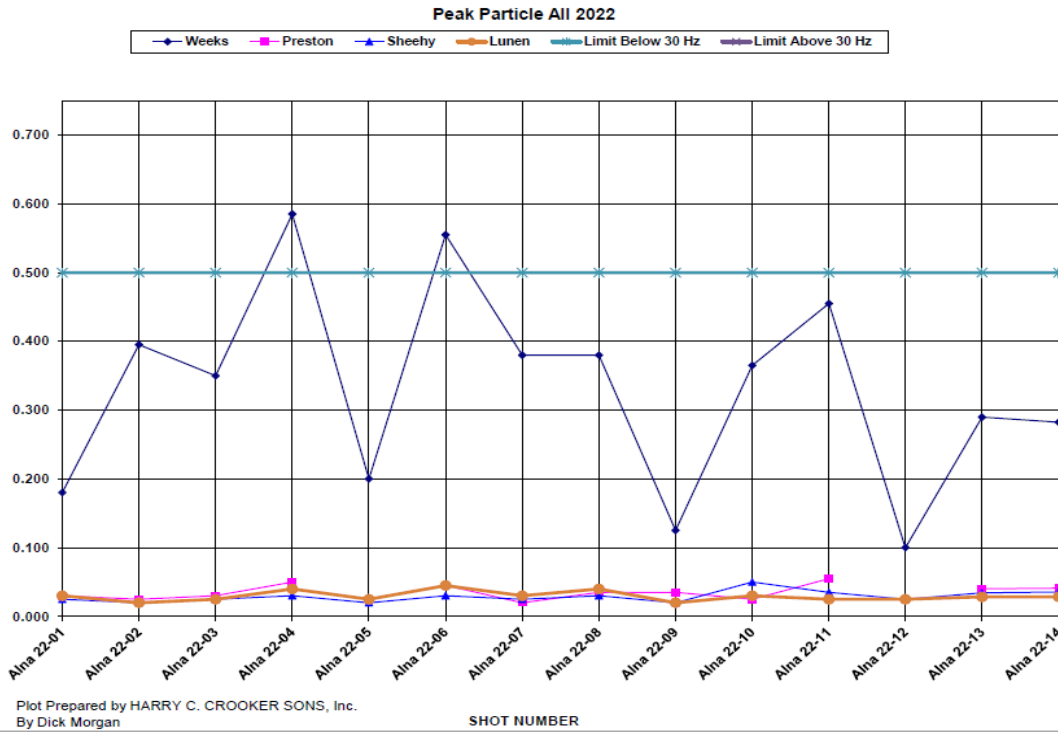


P. 22/66 of the Town of Alna 2023 Blast Permit Application

2/14/2023

Chart\_PPV

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Plot Prepared by HARRY C. CROOKER SONS, Inc.  
By Dick Morgan

SHOT NUMBER

# Exhibit E: Excessive noise pollution continued

p. 7/66 of the Town of Alna 2023 Blast Permit Application



604 Daniel Webster Highway  
Suite 104, Merrimack, NH 03054

Office: 1.888.627.9221  
Fax: 1.888.641.2674

## USBM AIRBLAST CRITERIA (RI 8485)

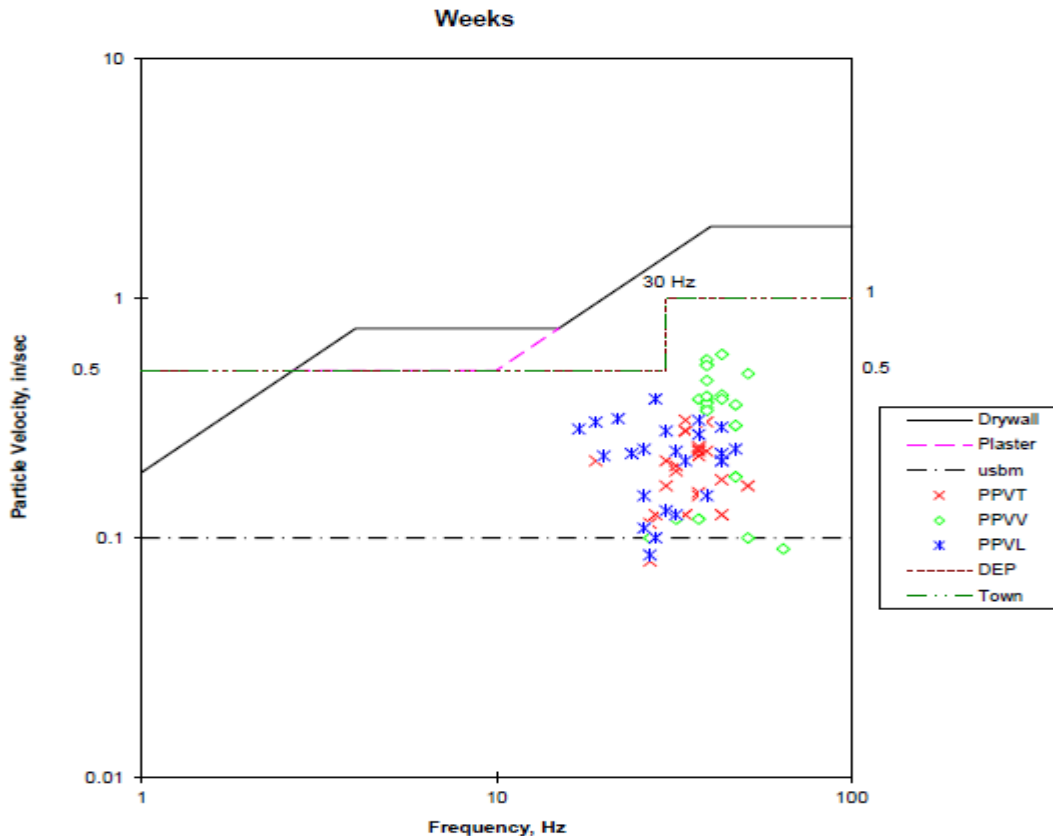
A study by the USBM documented the effects of airblast overpressure on structures in the USBM Report RI 8485 "Structure Response Produced by Airblast from Surface Mining". The results of this report recommend a conservative and safe limit of 0.0129 psi or an equivalent sound pressure level of 133 decibels (dB). Further studies by the USBM reported that airblast overpressures more than 0.10 psi or 150 dB were necessary to cause cracking to window glass.

## LOCAL CRITERION

By local agreement, the quarry has the following regulations: For peak frequency levels greater than 30 Hz maximum allowable peak particle velocity is 1.00 in/sec. For peak frequency levels less than 30 Hz, the maximum allowable peak particle velocity is 0.50 in/sec

p. 35-15/66 of the Town of Alna 2023 Blast Permit Application

USBM RECOMMENDATIONS (RI 8507)  
DEP RECOMMENDATION  
TOWN OF ALNA LIMIT



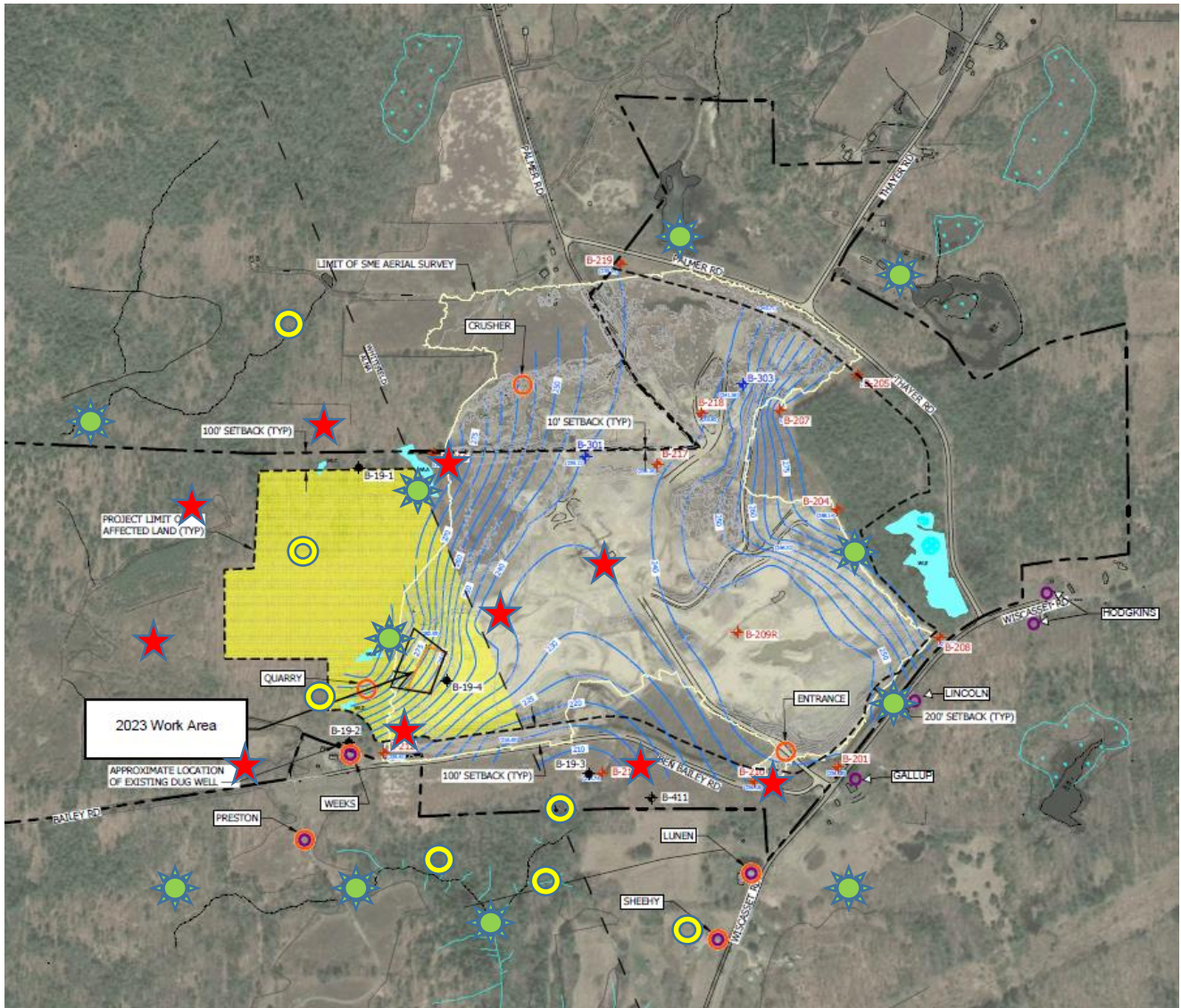
## Exhibit E: Excessive noise pollution continued




p. 16/46 2002 Town of Alna Site Plan Development Application

- Maine DEP Condition of Compliance Permit No. L-000758-80-B-C issued December 13, 1988, establishing maximum noise level at property boundary. At no time during the operation of the project shall noise levels exceed 100 dBc at the project's property boundary.

# Exhibit F: Site plan and suggested monitoring overlay

p. 10/66 of the Town of Alna 2023 Blast Permit Application overlaid with additional monitoring



- Proposed additional seismograph locations: 
- Proposed additional deep monitoring wells: 
- Proposed additional water quality wells: 



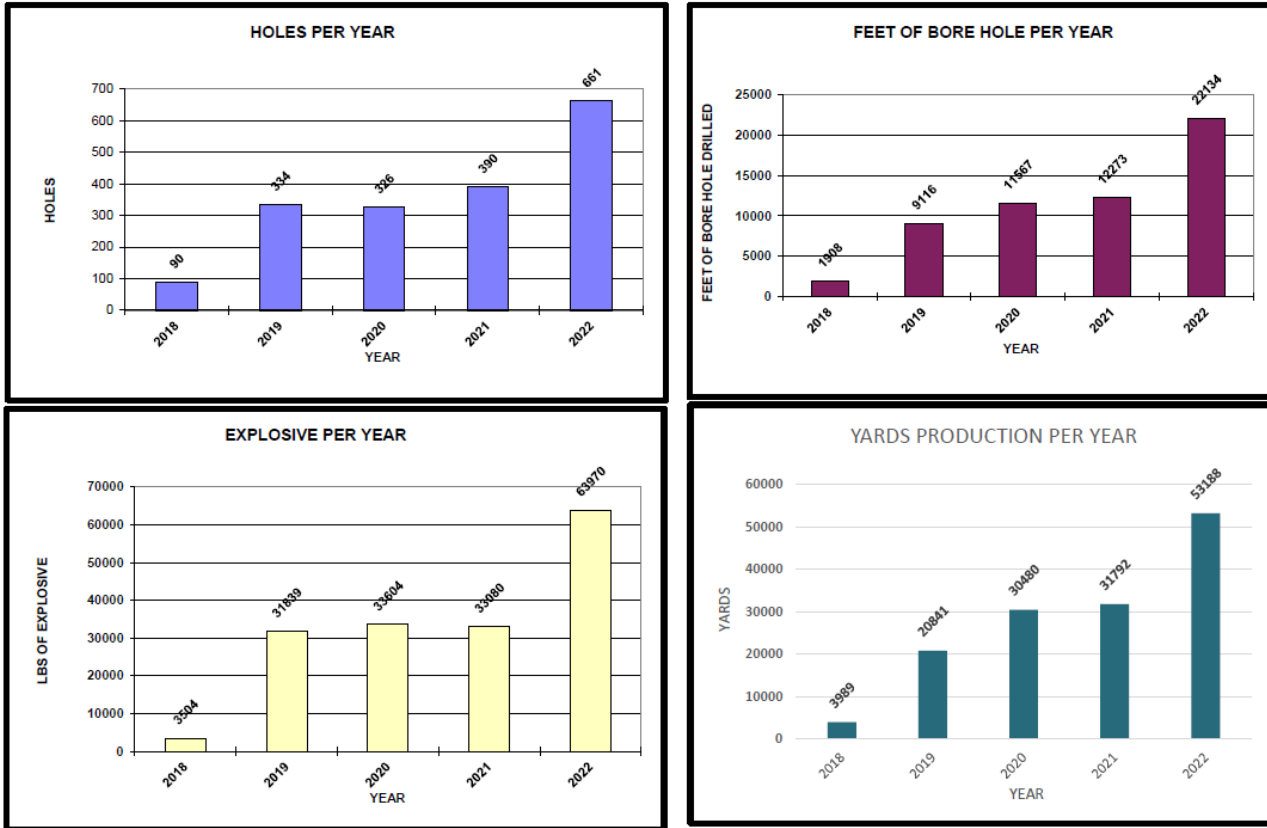
# Exhibit G

p. 41/66 2023 Town of Alna Blast Permit application

2/14/2023

Yearly DRL\_Alna.xlsx

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p. 45/66 2023 Town of Alna Blast Permit application

## Significant additional rate of production growth requested for 2023:

### Total number of cubic yards of material to be removed by Blasting

It is estimated a maximum of 100,000CY will be removed during the permit period.

### Estimate of the number of blasts required to remove the specified amount of material

Crooker is requesting a maximum (40) blast events for the proposed permit cycle. Blasting will occur on the scheduled days shown in the application (or next available good weather day). The number of blasts will not exceed what is listed in the section "hours of blasting" shown below.

p. 46/66 2023 Town of Alna Blast Permit application

- (b) **Hours of Blasting.** We propose to limit blasting to occur between the hours of 9am and 4pm, Monday thru Friday. No blasting will occur on National or State-recognized holidays. Blasting will be limited to no more than four (4) blast days per month and three (3) blasts on a given blast day.

# Exhibit H

p. 5/46 2002 Town of Alna Site Plan Development Application

Hydrogeologic Data for Significant Sand and Gravel Aquifers in Parts of Kennebec, Lincoln and Sagadahoc Counties, Maine). SME’s 1993 and 2001 field investigation included the installation of a total of 25 monitoring wells (5 wells in 1993 and 20 wells in 2001). Each monitoring well boring was advanced through sand and gravel deposits to the bedrock surface. Depths ranged from 10 feet to 105 feet. The material encountered ranged from fine sand to coarse gravel with cobbles and boulders. At most locations, a thin layer of till (2 to 7 feet) was encountered on top of the bedrock. Boring logs for monitoring wells installed on-site under SME’s supervision are attached to this Application (Attachment B). The locations of monitoring well boring are shown on the facility Site Plan (Attachment A).

p. 29/483 DEP application for variance to blasting below the seasonal high water table

TABLE 2-1

MONITORING WELL CONSTRUCTION DETAILS  
ALNA QUARRY AND WHITEFIELD GRAVEL PIT

Well ID	Well Completion Date	Material Screened	Screen Interval (feet-BGS <sup>1</sup> )	Ground Surface Elevation (ft-NAVD88) <sup>2</sup>	Well Riser/ Screen Diameter (inches)	Well Borehole Diameter (inches)	Screen/ Casing Material
B-19-1	10/1/2019	Bedrock Borehole	80-360	316.37	N/A <sup>3</sup>	6	Open
B-19-2	10/2/2019	Bedrock Borehole	60-460	287.39	N/A	6	Open
B-19-3	9/30/2019	Bedrock Borehole	320-400	265.76	N/A	6	Open
B-19-4	9/26/2019	Bedrock Borehole	60-350	232.95	N/A	6	Open
B-201	9/4/01	Sand & Gravel	83.0-88.0	283.26	2	4	PVC
B-204	8/27/01	Sand & Gravel	5.3-10.3	294.23	2	4	PVC
B-205	8/29/01	Till	14.1-19.1	293.17	2	4	PVC
B-207	8/29/01	Sand & Gravel/Till	6.5-11.5	287.96	2	4	PVC
B-208	8/27/01	Sand & Gravel/Till	10.0-15.0	291.19	2	4	PVC
B-209R <sup>4</sup>	NA <sup>5</sup>	Till	NA	245.60	2	NA	PVC
B-210	9/5/01	Sand & Gravel/Till	99.0-104.0	285.14	2	4	PVC
B-211	9/6/01	Till	86.0-91.0	268.49	2	4	PVC
B-212	9/11/01	Sand & Gravel/Till	45.0-50.0	286.81	2	4	PVC
B-216	9/12/01	Till	18.5-23.5	298.64	2	4	PVC
B-217	9/12/01	Sand & Gravel/Till	52.5-57.5	245.02	2	4	PVC
B-218	8/31/01	Sand & Gravel/Till	54.5-59.5	247.95	2	4	PVC
B-219	8/31/01	Sand & Gravel	45.0-50.0	248.86	2	4	PVC
B-301	12/9/02	Sand & Gravel	53.0-58.0	249.15	2	4	PVC
B-303	12/12/02	Sand & Gravel	32.0-37.0	252.34	2	4	PVC
B-411	NA	NA	NA	273.88	NA	NA	NA

Notes:

<sup>1</sup> BGS – below ground surface.

<sup>2</sup> From May 9, 2022 survey.

<sup>3</sup> N/A – not applicable

<sup>4</sup> Monitoring well B-209R replaced monitoring well B-209. Well log is not available for B-209R. B-209R is assumed to be screened in till, similar to B-209.

<sup>5</sup> NA – not available