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November 4, 2019 Project 171.05027.008

Mr. Kevin Martin
Compliance & Procedures Specialist
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

RE: Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Dear Mr. Martin:

This letter provides responses to the Department of Environmental Protection (DEP) letter from Kevin Martin to Elizabeth Ransom dated October 9, 2019. For clarity, each comment from that letter has been copied below and italicized. Responses are in regular text, and on the attached plans and figures as referenced below.

Natural Resources Protection Act (NRPA) application

1. According to Plan Sheet CE502, the proposed runoff diversion trench contains an underdrain pipe that will intercept groundwater, in addition to surface runoff, from off-site properties and convey the captured groundwater and surface water into Stream 9. In the application it is unclear whether post-development groundwater from the project site is sufficient to sustain flows in the downstream portions of Streams 3, 5, and 6. Please explain the flows that will be maintained in the portions of these streams proposed to be wetted by the applicant and demonstrate there is water of sufficient quantity and quality to ensure this mitigation function as intended. Also, please provide and describe the baseline that you use to measure pre-development flows against post-development flows.

The proposed diversion trench has been redesigned as shown on our response to Question 1 of the October 3, 2019 Technical Memorandum from Karem Gungor to Beth Callahan of DEP. Nordic has initiated collection of stream velocity measurements at the southern side of the proposed development for Streams 3, 5, and 6. Nordic proposes installing a weir in each stream (3, 5, and 6) near the southern property line for the development so that continuous measurements of discharge (or absence of discharge) can be developed for pre- and post- development conditions. Nordic will install a transducer at each of the weirs so that near-continuous data can be developed.

2. Please describe and quantify the impact associated with the road crossing over Stream 9 between Wetland 8 and Wetland 9. Please revise your alternatives analysis, minimization strategies, and compensation proposal to account for this impact.

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As noted in Nordic's August 22, 2019 response to DEP's July 3, 2019 comment letter, the culvert crossing at S9 located between wetlands W8 and W9 will be constructed using a natural open bottom culvert in order to avoid impacts to the streambed and allow it to continue to naturally manage floodflow during storm events. This will maintain the floodflow alteration function of S9, previously identified during the Functions and Values Assessment. Additionally, the use of the open bottom culvert will maintain the natural substrate of the streambed, and not negatively impact the substrate value. Additionally, by utilizing a wide culvert span and maintaining existing, natural flows, this culvert crossing will not have a negative impact on the streams channel morphology, bank erosion or pool/glide and riffle/run quality. The crossing will be placed at greater than 1.2 times bankfull width and will have no temporary or permanent impacts to Wetlands 8 and 9.

3. Please state the projected amount of surface water and groundwater that will be discharged into Stream 9 from the proposed runoff diversion trench and whether this additional volume of water will affect the viability and persistence of the supplemental plantings in Restoration Areas 1 and 3, and the physical geomorphology of the stream channel and associated riparian area. Please demonstrate the capability of Stream 9 to successfully handle the additional flows from the proposed runoff diversion trench without adversely affecting the proposed stream compensation and without adversely modifying the physical characteristics of Stream 9 and its riparian area.

The size of the drainage area for Stream 9 has not appreciably changed between pre- and post-development conditions. As noted in our response to the June 25, 2019 Technical Memorandum from Karem Gungor to Beth Callahan of DEP, the diversion of the offsite stormwater to PT6 provides little increase in flow at that analysis point due to additional off-site area being drained to that location. The channel being used for diversion is being constructed at a slope of 0.005 feet per foot and will be utilizing stone check dams. There will not be appreciable erosion caused by the channel. In addition, it should be noted that while there is minimal increase in flow to analysis point 6 due to the additional area draining to that location, there is less area contributing further downstream in Stream 9. Comparison of pre- and post- development flows at PT 9 illustrate this point. The geomorphic characteristics of the stream can reasonably be expected to be developed based on the 2-year storm flow through the stream. Given that 2-year storm flow through Stream 9 is essentially unchanged from pre- to post-development conditions, the geomorphic characteristics of the stream are also not expected to change beyond how they would be changing naturally.

4. Describe how the methods and results of the Qualitative Habitat Evaluation Index address the reasonableness of proposed stream alterations and compensation at the project site.

The Qualitative Habitat Evaluation Index (QHEI) was identified as a qualitative means to evaluate on-site streams that could be impacted or enhanced as a part of the project. This method is more comprehensive than an Index of Biotic Integrity (IBI), an Invertebrate Community Index (ICI), or a Headwater Habitat Evaluation Index (HHEI) which does not include a biological survey.

The QHEI uses a qualitative scoring method with six separate categories and a possible total score of 100. Field data sheets are used to score properties including substrate, instream cover, channel morphology, bank erosion and riparian zone, pool and riffle run quality, and

gradient/drainage area. Qualitatively, scores less than 30 can be thought of as corresponding to an IBI rating of very poor. Scores less than 50 can be thought of as corresponding to an IBI value of poor.

As noted in the QHEI, the overall quality of the streams onsite is poor, and the existing streams have limited or no potential to achieve higher aquatic biological functions. Using the QHEI method, the highest scoring reach of stream on the site was Stream 9c, with a score of 42, followed by Stream 8 with a score of 38.5. Although still a low score (corresponding to an IBI rating of poor), S9c scored higher than other site streams because of improved channel morphology and riffle run characteristics. The lowest scoring reach of stream was Stream 9b, which has historically been channelized with significant removal of riparian vegetation. It is currently a narrow open swale with mowed grass leading up to the edge of either stream bank. This section of stream received a very poor score (17/100) due to poor substrate, instream cover, channel morphology, bank erosion, and riffle run scores.

The proposed on-site compensation, which includes restoration plantings along all sections of Stream 9 as well as replacement of a culverted driveway crossing on S8 and another culverted driveway crossing on D7, is expected to significantly improve the scores for the full length of Stream 9. Specifically, S9a will see immediate improvement to instream cover and bank erosion/riparian zone scores through the planned planting of riparian vegetation and deeded protection of up to 75 feet wide adjacent to the stream bank. Substrate, channel morphology, and riffle/run scores would also be expected to improve over time. S9b will show substantial improvement through the restoration of this section, as instream cover, which is currently sparse, will be vastly improved, as will the riparian zone. Improvements to D7 and S8 through the replacement of a currently hung set of three culverts and a hung single culvert with open bottom aluminum arches will provide not only improved stream characteristics to D7 and S8, but also to S9c, as the three streams join at the coastal wetland and increasing the connectivity and improving the instream cover is expected to result in improved water quality and increased macroinvertebrate diversity. These improvements are expected to also provide connection to downstream fish habitat along the lower reaches of S8 and S9.

Although Streams 3, 5 and 6 will be altered on the project site, Nordic proposes to maintain flows in the remaining portions of these streams as indicated in our response to Question 1 above. Nordic also proposes compensation and improvements to the lower portions of these streams as shown on the impact compensation plan in Attachment A. Specifically, this includes removing unnecessary piping from Streams 5 and 6, providing bank stabilization, and creating improved trail crossings and stream bottoms along the Little River trail. Similar improvements are planned for Stream 3, where bank stabilization, slope stabilization, and other compensation measures are planned. With the projects described, Nordic proposes 225.5 linear feet (lf) of stream restoration measures, broken down as follows:

S3 Western Bank:

- New plank bridge raised off stream bed, lengthened to span banks (32 lf of stream protection)

- providing bank stabilization with stone steps (5 lf)

S3 Eastern side:

- Bank stabilization at base of steps (3 lf)

S5:

- Replace rock in stream bed with new arch bridge and use rock to create riffle/pool complex (18.5 lf of stream restoration)
- Concrete and aluminum culvert removal (40 lf stream restoration)

S6:

- Replace rock in stream bed with new arch bridge and use rock to create riffle/pool complex (13 lf of stream restoration)
- Concrete culvert removal (24.5 lf stream restoration)
- Bank stabilization (7 lf)

D7:

- Replace hung culvert with arch culvert (65 lf)
- Restore stream bed (80 lf)
- Restore plunge pool below arch (15 lf)

5. Please describe how the proposed stream compensation replaces the macroinvertebrate habitat that will be lost as a result of proposed impacts to Streams 3, 5, and 6. Consideration should be given to developing a macroinvertebrate sampling methodology that will be implemented as part of baseline and post-restoration monitoring and reporting in Stream 9. Monitoring results should be both qualitative and quantitative in nature with a focus on species diversity and abundance.

The QHEI documents that existing Streams 3, 5, and 6 have low invertebrate abundance and diversity, likely at least in part, due to the current intermittent nature of the streams and the lack of deep pools. Restoration of Streams 3, 5, 6 and 9 and the changed drainage profile of the site is expected to improve instream cover, bank erosion and riparian zone, and riffle-run characteristics of Stream 9, thus providing more consistent macroinvertebrate habitat.

As noted in the Water Resources Monitoring Plan submitted as part of the Site Location of Development Application that accompanied the NRPA application, Nordic proposes to monitor NRPA jurisdictional streams located on-Site. These streams will be monitored for aquatic macroinvertebrates in the late spring to early fall. Following a baseline assessment to be conducted preconstruction, NRPA jurisdictional streams containing documented aquatic

macroinvertebrates will be monitored for aquatic macroinvertebrates on an annual basis for the duration. This investigation will be conducted in accordance with general methods described in the NRPA Identification Guide for Rivers, Streams, and Brooks[1] and EPA guidance document Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition[2].

Please refer to the Water Resources Monitoring Plan for additional details regarding monitoring of the restoration of Stream 9 and additional proposed site wetland biomonitoring.

6. Supplemental plantings are proposed in the riparian area of Stream 8 as shown in Restoration Area 4 of the proposed impact compensation plan. Based on information in the record and Department observations from previous site visits, this riparian area is established with existing vegetation, including several species of trees, shrubs, grasses, and groundcover. Additional plantings are not necessary in this area and will not provide an environmental lift to the functions and values of Stream 8 due to the existing establishment of vegetation in this area. For this reason, the Department recommends that the proposed plantings be removed from the stream compensation plan. Other methods of stream compensation should be considered and proposed.

The supplemental plantings proposed in the riparian areas of Stream 8 are meant to revegetate the areas disturbed during the replacement of the culvert. The project is committed to stabilizing all disturbed areas with native vegetation that provides wildlife value. However, it is understood that the plantings in this area are not acceptable to the DEP as part of the overall impact compensation, only the culvert replacement itself as it provides for improved aquatic passage.

The proposed plantings have been removed from the Impact Compensation Plan, and a revised plan is attached as Attachment A.

Based on the above comment from DEP, Nordic has considered additional methods of stream compensation for the proposed project. As identified in the QHEI, Streams 3, 5, and 6 are currently of low function and value, with limited or no potential to achieve higher aquatic biological functions on their own. In addition, historical anthropogenic impacts are visible along sections of these streams both onsite and within the 250-foot shoreland zone that will be retained by the City of Belfast as part of the proposed project. These impacts include placement of fill materials such as corrugated steel and concrete pipes, stone and soil fill, and vegetative debris from logging operations. Nordic proposes to remove fill and restore and stabilize banks and riparian vegetation along the portions of Streams 3, 5, and 6 that will remain following

[1] Danielson, T. J. 2018. *Natural Resource Protection Act (NRPA) Streams, Rivers, and Brooks.* Maine Department of Environmental Protection, Augusta, ME.

[2] Barbour, M.T., J. Gerritsen, B.D. Snyder, and J.B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water; Washington, D.C.

construction of the proposed project. This additional compensation is shown on the Attachment A.

7. Freshwater wetlands within 25 feet of streams are freshwater wetlands of special significance. Ch. 310, § 4(A)(8). The application materials submitted August 22, 2019, contain updated stream identification and wetland delineation information. Please provide a corresponding update of the wetlands of special significance present on the site; explain the proposed impact to these wetlands, if any; and discuss why any impacts are reasonable and no practicable alternative less damaging to the environment exists.

Please see the attached memo and figures from Normandeau Associates updating the stream identification and providing enlarge detail plans denoting the presence of wetlands of special significance on the site (Attachment B). Square footage of impacts to these specific freshwater wetlands are shown on the figures accompanying the Normandeau memo. Because the project is a water dependent use, Chapter 310 of the DEP's rules requires submission of an Alternatives Analysis. The Alternatives Analysis submitted with the NRPA application provides extensive detail regarding the water dependent nature of the use and the absence of a practicable alternative.

8. Please submit a plan that outlines the staging area where seawater pipeline segments will be stored prior to installation. If the segments will be stored at the primary project site, please describe how the segments will be transported across, and deposited into, the coastal wetland without disturbing salt marsh vegetation and the outlets of Streams 8 and 9c. If the pipeline segments will be brought to the site by barge from an off-site location, please provide this location and show the upland staging area on a plan.

Construction materials for the seawater piping in the upland zones (Station 0+00 to 5+00) will be stored and staged in the eastern portion of the Building 2 footprint shown on sheet CE112 submitted with the application. Approximately 80,000 square feet of onsite space is available for staging during early construction stages. Materials will be transported by loader or other equipment appropriate for the size and weight of the materials being transferred. Materials needed for construction on the Eckrote property will be transported across Route 1 at the pipeline crossing location. All activities on the Eckrote property will remain within the designated 40-foot wide construction easement.

Access to the intertidal zone from the Eckrote property will be through the 40-foot construction easement. Once beyond Station 5+00, equipment will operate on construction mats. Work within the intertidal zone will be limited to the 100-foot maximum impact corridor width. Piping and other materials needed for construction within the intertidal and subtidal zones will be delivered by barge during appropriate tide cycles. An existing permitted facility, intended for similar types of work/use, will be utilized for offsite staging. An example of such facility is Cianbro's Eastern Manufacturing Facility located on the edge of the Penobscot River in Brewer, Maine (see Figure 1). Similar, nearby permitted alternatives will be evaluated prior to construction.

Figure 1 – Offsite Staging Area; Cianbro's Eastern Manufacturing Facility in Brewer, ME

9. Additional erosion and sedimentation control measures should be considered and implemented to prevent turbidity in the coastal wetland during construction. Such measures include, but are not limited to, a system for monitoring and reporting turbidity during construction, use of a fully enclosed dredge bucket, limiting the hoist speed of the dredge bucket when operating in the water column, and use of a scow or a secondary containment system to prevent overflow of dredged materials.

Construction mats will be utilized by equipment to minimize impacts to the coastal wetland. These mats will start at the convergence of the Eckrote property with Streams 8, 9c, and the salt marsh/intertidal zone and will extend along the pipeline route to the low water line. See Sheets CS-104, CS-105, CS-503, and CS-504 for additional erosion and sedimentation control measures.

Methods to limit turbidity generation during work will include the following operational control measures:

1. Turbidity barriers/curtains will be utilized as applicable to water depth and tide cycle around the work area.
2. Work will be sequenced to allow major excavation to occur during a low tide cycle thereby minimizing the excavation area exposed to the water column.

3. When excavation activity occurs in areas where excavated materials will be pulled through the water column; a closed dredge bucket or similar tool will be utilized to contain the sediments. In addition, crews will be instructed to minimize hoist speeds and overall disturbance of the sediments. In general, excavation and backfill work is to be completed during a low tide cycle to minimize exposure of sediments and dredging activity to the water column.
4. A turbidity monitoring program will be established with a plan submitted to DEP for review prior to construction start. The program will include visual monitoring at the site of activity and a metered monitoring program with NTU readings taken around the work zone to assure turbidity generated from the work does not impact background water quality standards. Locations of metered monitoring and suggested action levels to implement additional turbidity controls at the point of activity will be included in the plan.

10. All equipment working within the coastal wetland must operate from a barge or construction mats. If working from construction mats, these mats must be shown on a plan. Construction mats must also be removed from the coastal wetland when not in use.

Within the intertidal zone (Station 5+00 to 13+50), 16 to 20-foot wide construction mats will be utilized by equipment to minimize impacts to the coastal wetland and will be removed once no longer needed. These mats will start at the convergence of the Eckrote property with Streams 8, 9c, and the salt marsh/intertidal zone and will extend along the pipeline route to the edge of the low water line. Mats will be weighted down or anchored to remain in-place during high tide cycles. Mats will be utilized throughout the duration of construction in this zone. See Sheets CS-104 and CS-105 for location of construction mats.

Mats will be positioned at the streams to limit impacts and facilitate implementation of the project wetland/stream restoration plan.

11. Please describe how the work area within the coastal wetland will be stabilized and remain dry and uninterrupted between tide cycles.

In order to minimize impacts to the coastal wetland, the piping in the intertidal zone will be installed in 20 to 100-foot segments during low tide cycles. This will involve the following steps:

1. Excavate an appropriately sized trench for the length of pipes to be installed using excavators supported by construction mats;
2. Place excavated material on a jack-up barge, grounded-out barge, or other containment structure (positioned during high tide) adjacent to the trench and within the 100-foot wide impact corridor;
3. Set the pipe assembly (including two intake lines and one discharge line connected by concrete collars) into the trench;
4. Mechanically connect flanges at the pipe ends to the flanges of the previously installed pipes; this work will be done within a trench box to support the trench and protect construction personnel;

5. Backfill the trench using the previously excavated material and dispose of excess soil at a designated off-site, upland location.

12. Please overlay a construction sequencing plan with an overhead aerial imagery plan. Include the locations of all erosion and sedimentation control measures, excavation/trenching activities, and dredging activities.

Please see Sheets CS-104 and CS-105, Attachment C.

13. Compensation for wetland impacts and stream impacts must be separated into two proposals, because the functions and values for these resources are different. According to the NRPA, 38 M.R.S. § 480(Z), Maine's In Lieu Fee (ILF) program is not an eligible method for compensation of impacts to streams. For this reason, a dollar value cannot be placed on proposed stream impacts and the square footage of on-site stream compensation cannot be used to reduce the ILF compensation formula for proposed freshwater wetland impacts. The ILF wetland compensation formula is:

(Direct wetland impact/sq. ft. x (natural resource enhancement & restoration cost/sq. ft. + avg. assessed land valuation/sq. ft.)) x (resource multiplier)

Based on the amount of proposed freshwater impacts as listed in the August 22, 2019 submission, the ILF calculation for freshwater wetland impacts, is:

190,389 sf x ($3.61 + $0.09) x 1 = $704,439.30

Please revise the proposed compensation fee amount accordingly. All compensation fee amounts could be reduced by decreasing the amount of impact to on-site natural resources.

In-Lieu- Fee

To compensate for wetland impacts the project will pay into the in-lieu-fee program as calculated below using the following formula:

(Direct wetland impact/sq. ft. x (natural resource enhancement & restoration cost/sq. ft. + avg. assessed land valuation/sq. ft.)) x (resource multiplier)

Impacts to freshwater wetlands are being partially mitigated via permittee-responsible on-site compensation through the stabilization of slopes and stream bed protection at S3, S5, S6 and drainage D7 (1,723.50 sq ft) and riparian buffer restoration of S9 (91,065 sq ft). The permittee-responsible on-site compensation includes:

S9:
Riparian buffer restoration (91,065 sq. ft)
S3 Western Bank:
- Native plantings after bridge replacement (160 sq. ft)
- Revegetation with native plantings (297 sq. ft)

S3 Eastern side:

- Stone steps along steeply sloped trail (195 sq. ft)
- Slope stabilization with native plantings (390 sq. ft)

S5:

- 166.5 sq ft of stream bed protection with a new bridge

S6:

- 325 sq ft of stream bed protection with a new bridge)
- Revegetation with native plantings on either side of bank (100 sq. ft)

D7:

- Stabilize slopes at plunge pool with native plantings (90 sq ft)

The permittee-responsible on-site compensation totals 92,688.50 sq ft which offsets the calculated fee payment at a 1:2 ratio (92,688.50/2= 46,344.25). The enhancement and restoration cost for Waldo County is $3.61 per sq.ft. and the average assessed land value is $0.09 per sq.ft. The resource multiplier for wetlands of special significance that are permanently impacted is 2. All other permanently impacted resources are set at a multiplier of 1. All temporary impacts are to be restored in place and are not included in fee calculations.

Permanent Freshwater Wetland impacts that are not WOSS:

((185,400 -46,344.25x ($3.61 + 0.09)) x 1 = $514,506.28

Permanent Freshwater WOSS impacts:

((6,670 x ($3.61 + 0.09)) x 2 = $49,358.00

Permanent Coastal (subtidal) impacts:

((6,703 x ($3.61 + 0.09)) x 2 = $49,602.20

Total Compensation $613,466.48

Table 1. Freshwater Wetlands Impact Table

Wetland ID	[1]Cowardin Class	[2]Total Temporary Impacts (SF)	Total Permanent Impacts (SF)	Impact Total (SF)	Impacts to WOSS (SF)	Impact Characterization
W1	PFO	0	116,033	116,033	6,454	Direct, Fill
W2	PFO	0	24,612	24,612		Direct, Fill
W3	PFO	0	5,057	5,057		Direct, Fill
W4	PFO	0	692	692		Direct, Fill
W5	PSS	0	18,672	18,672		Direct, Fill
W6	PFO	2,716	3,120	5,835		Direct, Fill
W13	PEM	0	556	556		Direct, Fill
W15	PEM	0	10,643	10,643	216	Direct, Fill
W16	PSS	1,245	0	1,245	621	Direct, Excavation
W19	PEM	0	12,685	12,685		Direct, Fill
Totals	PFO	2,716	149,513	152,229	6,454	
	PSS	1,245	18,672	19,917	621	
	PEM	0	23,884	23,884	216	
Grand Total	**All**	**3,960**	**192,070**	**196,030**	**7,291**	

1 Cowardin Class: PSS = Palustrine Scrub-Shrub; PFO = Palustrine Forested; PEM = Palustrine Emergent

2 All temporary impacts will be restored in-place.

14. In revised application submissions, the seawater access system is proposed to be suspended above the seabed. Please state the elevation that the pipelines will be suspended above the seabed and state the reasoning for grading and filling any depressions along the pipeline route. If any areas of seabed are to be filled and/or graded, please revise your alternatives analysis, minimization strategies, and compensation proposal to account for this impact.

Where the seawater access piping is not buried (32+00 to 69+00) the revised anchoring design was developed to minimize the disturbance to the seafloor. Impacts will be limited to the footprints of the concrete collars that support the pipes and the area of the side anchors, as opposed to stone fill or mattresses that would otherwise cover the pipes and surrounding sea floor for the entire exposed length. The pipes will be suspended approximately 12 inches above the sea floor to allow most aquatic species to travel beneath. In the event that boulders, steep depressions, or other significant anomalies are discovered along the pipeline route, minor grading or removal could be necessary. However, based on the bathymetry, dive videos, and other data collected at the site, the bottom appears to be soft, smooth, and at a relatively constant grade. Therefore, corrections to the bottom are not anticipated.

Site Location of Development Act (Site Law) Application:

1. In accordance with the Department's Financial and Technical Capacity Standards of the Site Law, Chapter 373, § (B)(3)(a), please submit a letter of commitment or intent to fund indicating the amount of funds intended to be provided to the applicant for at least the first three tranches of the proposed project.

A letter of intent to fund is included in Attachment D.

2. Please submit sound level specifications for all outside sound-generating machinery and explain whether the resulting sound will comply with the corresponding Site Law standards. Will it be necessary to mitigate for the generation of noise from outside sound-generating machinery (e.g., cooling towers, generators, ventilation systems, etc.) by enclosing these noise sources?

Our analysis indicates that the regulated equipment of the facility during routine operation will produce sound levels that satisfy the noise level limits contained in Chapter 375.10 of Maine's Site Location of Development Law Regulations. Acentech Report No. 0480r3 (April 2019) and supplemental Table 2 (Revised; July 2019) summarizes our analysis and model results. The sound model was based on project-supplied information, which identified the ventilation systems, generator system, building construction, attenuators, and equipment layout. The 180 sources in the sound model cover primarily air inlet fans, air outlet fans, and open vents for the various tank buildings with attenuators as necessary to provide a typical sound power level for each individual source of 60 to 65 dBA. Dynamic insertion loss values for these attenuators range from 0 to 29 dBA. The additional sources modeled include the central utility plant (CUP) building, which houses the heating/cooling units and generators. The average sound level at the indoor perimeter of the CUP was estimated to be 85 dBA based on industry experience. The planned heating building will be constructed of sheet steel and 190mm mineral fiber insulation or of a comparable design, which should provide a sound transmission loss (TL) of 29 dB in the 250 Hz octave band and greater TL at higher frequencies. The engine generator units, which if not treated, would produce substantially greater sound than all other facility equipment. Therefore, the generator units will be installed in a building with concrete for the east and south walls and with the above steel/mineral wool wall construction for the other surfaces. In addition, a critical grade silencer will be installed on each engine exhaust and the building vents will be suitably treated. The rooftop of the CUP will house air-cooled condenser units rated for a 3-foot sound pressure of 75 dBA, and a 30-foot rating of 64 dBA. In order to mitigate the noise emitted by these units, the CUP is located centrally within the site. This locates it at least 500 feet from the site boundary, and surrounds it with the larger module buildings, which act as an additional barrier to sound transmittance. Based on the aforementioned equipment specifications, layouts, and site conditions, the sound model provided in the original application shows that the operation of the proposed facility will adhere to the sound laws and regulations put forth in the Maine Site Location of Development Act.

3. Please submit sound level specifications for all outside sound-generating machinery.

Please see above answer to Question 2 for response.

4. Please provide a draft Spill Prevention Control and Countermeasures (SPCC) plan.

Please see Attachment E for the draft hazardous materials Spill Prevention Control and Countermeasures (SPCC) plan.

In accordance with United States Environmental Protection Agency (EPA) Chapter 40 of the Code of Federal Regulations Part 112 (40 CFR 112), facilities must prepare and implement an Oil SPCC plan for any site that could reasonably be expected to discharge oil into or upon navigable waters or adjoining shorelines; and, meet one of the following conditions:

Please see Attachment E for the draft hazardous materials Spill Prevention Control and Countermeasures (SPCC) plan.

In accordance with United States Environmental Protection Agency (EPA) Chapter 40 of the Code of Federal Regulations Part 112 (40 CFR 112), facilities must prepare and implement an Oil SPCC plan for any site that could reasonably be expected to discharge oil into or upon navigable waters or adjoining shorelines; and, meet one of the following conditions:

1. Above-ground oil storage capacity exceeds 1,320 gallons; or

2. Underground oil storage capacity exceeds 42,000 gallons, unless the underground tanks are subject to all of the technical requirements of 40 CFR 280 or a state program approved under 40 CFR 281 (Maine Department of Environmental Protection [MEDEP], Chapter 691 – Rules for Underground Storage Facilities).

As defined by 40 CFR Part 112, the term "oil" includes all grades of motor oil, hydraulic oil, lube oil, fuel oil, gasoline and diesel, automatic transmission fluid, waste oil, and transformer mineral oil. The definition of oil also includes non-petroleum oils such as animal or vegetable oils and synthetic oils. The proposed Nordic Aquafarms facility may also meet the criteria requiring an Oil SPCC plan, which will be provided prior to site construction and operations when additional information regarding quantities and specific locations of onsite storage are available.

5. Please review and respond accordingly to the attached geology technical review memorandum dated September 17, 2019.

Please see Attachment F for responses to the geology technical review memorandum dated September 17, 2019.

6. Please review and respond accordingly to the attached stormwater management technical review memorandum dated October 3, 2019.

Responses to the October 3, 2019 stormwater management technical review memorandum are in Attachment G.

Please contact me with any questions or comments.

Sincerely,

RANSOM CONSULTING, INC.

Digitally signed by
Elizabeth M. Ransom, P.G.
Date: 2019.11.06 10:54:06
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Elizabeth M. Ransom, P.G.
Senior Project Manager

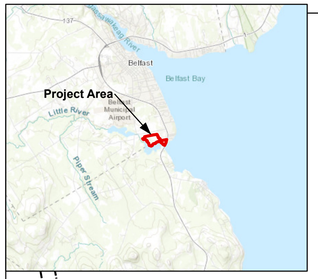
EMR:adm

ATTACHMENT A

Impact Compensation Plan

Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008



Restore in Place Specifications

Sewer Force Main

1. All excavated material will be side cast within the construction easement
2. Install Force Main
3. Backfill to original grade using side cast material
4. Restore stream channel and wetlands to original elevations, slope and substrate
5. Hydroseed disturbed area using New England Wetland Mix or equivalent at manufacturers specifications

Rte 1 By-Pass

1. A temporary adequately sized culvert will be placed along the stream channel
2. Once the intake and discharge pipes are installed all temporary areas will be removed and restored to original grades
3. The weltand area will be restored to original grade and hyroseeded with New England wet mix or equivalent at manufacturers specifications
4. Restore stream channel to original elevations, slope and substrate

Herbaceous Species	Indicator Status	Planting Specification/Number of Stems: Restoration Area 1	Restoration Area 2	Restoration Area 3
Onoclea sensibilis /Sensitive Fern	FACW			60
Acorus americana /Sweetflag)	OBL			60
Aster novae-angliae /New England Aster)	FACW-			60
New England Conservation/Wildlife Mix	See Sheet 4			See Sheet 4
Shrub Species				
Cornus racemosa /Gray Dogwood	FAC		10	
Hamamelis virginiana /Witch Hazel	FAC-		10	
Alnus incana /Speckled Alder	FACW+		10	
Cornus alternifolia /Alternate-leaved dogwood	UPL	6	13	3
Tree Species				
Pinus strobus /White pine	FACU	6		6
Acer Rubrum /Red maple	FAC	6		9
Acer saccharum/Sugar maple	UPL	2		
Picea rubens /Red spruce	FACU	3		4
Fagus grandifolia /American beech	FACU	6		
Carpus caroliniana /American hornbeam	FAC	6		
Acer negundo /Boxelder	FAC+	6		
Populus tremuliodes /Quaking Aspen	FACU	6		
Tsuga Canadensis/Eastern Hemlock	FACU	2		3

Impact Compensation Plan Specifications		
Plant Type	Stock	Planting Specification
Trees	4'-6'	64 sq. ft. on center
Shrubs	3'-4'	16 sq.ft. on center
Herbaceous	2" plugs	2 sq.ft. on center
Ferns	1 gal. pot	2 sq.ft. on center

*Indicator Code	Indicator Status	Comment
OBL	Obligate Wetland	Almost always occur in wetlands (>99%)
FACW	Facultative Wetland	Usually occur in wetlands, but may occur in non-wetlands (67-99%)
FAC	Facultative	Occur in wetlands and non-wetlands (34-66%)
FACU	Facultative Upland	Usually occur in non-wetlands, but may occur in wetlands (1-33%)
UPL	Obligate Upland	Almost never occur in wetlands (<1%)

* For planting details see Sheet 4

W1 W2 W3 W4 W5 W6 W7 W8 W9 W10 W11 W12 W13 W15 W16 W17 W18 W19

S1 S2 S3 S4 S5 S6 S7 S8 S9

AREA 1 AREA 2 AREA 3 AREA 4

Restore in place areas for sewer force main

Restore in place areas for Route 1 By-Pass

Restore in place areas for Route 1 By-Pass

-Restore stream bed using existing stone to create riffles/pools, revegatate both sides of bank

-Install arched bridge
-Restore streambed
-Remove 40 concrete and aluminum pipe

Western Side: improve bridge and stabilize banks with plantings

Eastern Side: install steps along steep slope, stabilize stream banks revegatate along steps and stream bank

Replace hung culverts with arch.

Culvert

Replace the single driveway culvert with arch and stabilize/ revegatate above arch and plunge pool below arch

Restore in place areas for Intake and Discharge Pipe Installation

Restore in place areas for Intake and Discharge Pipe Installation

Intake and Discharge Pipes

1. All excavated material will be side cast within the construction easement
2. Excavated material will preserved for backfill keeping salt marsh root mat intact and cobble beah substrate separate from subsurface soils
3. Protect root mat from exposure, drying, freezing
4. Install intake and discharge pipes
5. Once the intake and discharge pipes are installed, carefully backfill using preserved side cast materials
6. Ensure the root mat and cobble beach backfill material are set a original grade
7. Stablize root mat with wooden stakes at least 3 feet longer in depth than the root zone

N

0 40 80 160 240 Feet

Belfast Aquaculture Project
Impact Compensation Plan
Date: November 4, 2019

Species

- Alternate-leaved Dogwood
- American Beech
- American Hornbeam
- Boxelder
- Eastern Hemlock
- Gray Dogwood
- New England Aster
- Quacking Aspen
- Red Maple
- Red Spruce
- Sensitive Fern
- Speckled Alder
- Sugar Maple
- Sweetflag
- White Pine
- Witch Hazel
- Conservation Wildlife Mix
- New England Wet Mix

- Sewer Easement
- Stream Impact

Regime

- Existing Culvert
- Drainage
- Intermittent Stream
- Stream Not Field Delineated

- Easement Centerline
- Permanent Easement 25' Wide
- Temporary Easement 40' Wide
- Project Area
- Other Belfast Parcels

- Palustrine Wetlands
- Salt Marsh
- Cobble Beach
- Riparian Restoration Area

NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

ATTACHMENT B

Normandeau Memorandum

Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008

NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

Memorandum

Monday, November 04, 2019

TO: Elizabeth Ransom, Ransom Consulting

FROM: Adele Fiorillo, PWS, NHCWS

SUBJECT: Wetland and Stream Review, October 3 and 6, 2019

The Department of Environmental Protection (DEP) requested an updated assessment of drainages and streams under the Natural Resource Protection Act (NRPA). A Normandeau wetland scientist reviewed the site and extended the stream designation in three locations converting D3, D5 and D6 to S3, S5 and S6 in July of 2019. This requested change resulted in streams intersecting with wetlands with the potential to create Wetlands of Special Significance (WOSS), by definition, for W1, W15 and W19, in addition to the previously identified WOSS.

It is important that the project move forward in a manner that reflects the natural resources based on consensus between wetland scientists and the DEP. To that end, Normandeau revisited the site on October 3, 2019 to update the assessment and a peer review was completed on October 6, 2019 by Broadwater Environmental, LLC (BE, LLC). The results of both site reviews are outlined in this memo.

During the July 2019 review W15 was expanded and W19 was added in conjunction with the conversion of drainages D3, D5, and D6 to streams S3, S5 and S6. The property on which these wetlands are located is predominately vegetated with grasses (see tree line on Figure 1). Subsequent reviews did not change the wetland boundary of W19.

There were changes to W1 at its intersection with S5 following the October delineation but no other boundary adjustment were made at this location. W1 now extends further into the tree line at S5 (Figure 2, Photo 1), shortening the stream due to vegetation cover and no evidence of scouring. W1 vegetation characteristics in the area of S5 include the dominant species *Calamagrostis canadensis* (bluejoint grass, 85%) and a mix of 20% facultative upland plant species and 35% upland plant species. Soils in W1 are poorly drained silt loam and somewhat poorly drained silt loam in the stream.

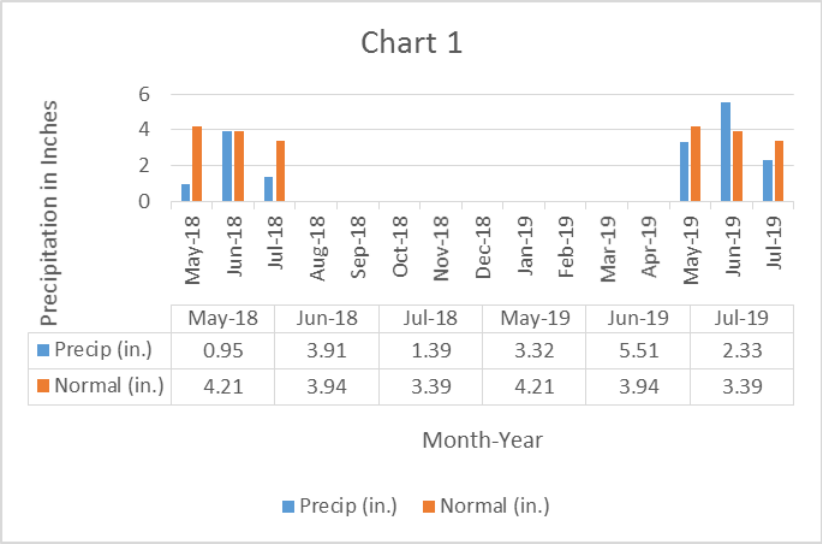
On October 6, 2019 BE,LLC walked the boundaries of W15 and the stream connection of S6 and the stream connections of W1 to S3 and D4. Most flags depicting the wetland boundary were still present in W15. Overall, the existing boundaries were generally accurate with 5 minor adjustments to flag locations in W15 (Figure 3). W15 has similar vegetation characteristic as the herbaceous areas of W1. This wetland consists of 40% meadow foxtail (*Alopecurus pratensis*, obligate) and 30% bluejoint (facultative). Other non-dominant herbaceous species include buttercup (*Ranunculus acris*, facultative) and bedstraw (*Galium mollugo*, upland). Once the

wetland enters into the treeline it connects with S6. Soils are somewhat poorly drained silt loam in the wetland and predominate within the stream channel as well.

W1 is connected to S3 by hydric soils and a stream channel. BE, LLC found hydric soils within the wetland portion of the drainage that discharges to S3. Therefore, the drainage designated as D4 was determined to be a regulated stream from existing flag NAI S4-2, down to S3. This is evidenced by sediment scour and accumulation (Photo 2). Above this flag (i.e., to the northwest), the "channel" was almost completely vegetated (Photo 3) and is an intermittent drainage that is a wetland but not a regulated stream. Figure 1 shows the upper portion of S4 interpreted to be wetland and the lower portions converted from D4 to S4.

Meadow foxtail is native to Europe and Asia and naturalized and common in the northeast United States. This grass species has a wide range of tolerance to soil moisture but avoids waterlogged soils. Bluejoint is a native grass that occurs in wetlands and disturbed sites. The seeds can remain viable for years and can quickly germinate when conditions are right but cannot germinate during dry periods.

It is important to note that in grasslands, particularly with the species present on this site, seasonal variations in rainfall during the spring months can result in significant expansion and contraction of areal coverage. Chart 1 shows a comparison of precipitation during the spring/early summer months of 2018 and 2019. The marked increase in rainfall in 2019, 7.69 inches greater than the same three months in 2018, likely resulted in the increase of areal coverage of bluejoint in W15 between 2018 and 2019. Bluejoint also tolerates a wide range of wetness in the soils and is even found in moderately well drained soils, hence the facultative designation. Species characteristics and seasonal variations in rainfall explain the observed differences between wetland boundaries between 2018 and 2019. The soil type, vegetation and disturbed nature of the wetlands made for a challenging boundary determination. Normandeau and peer review delineation are in agreement and confirm the accuracy of the revised boundaries shown on the attached figures.

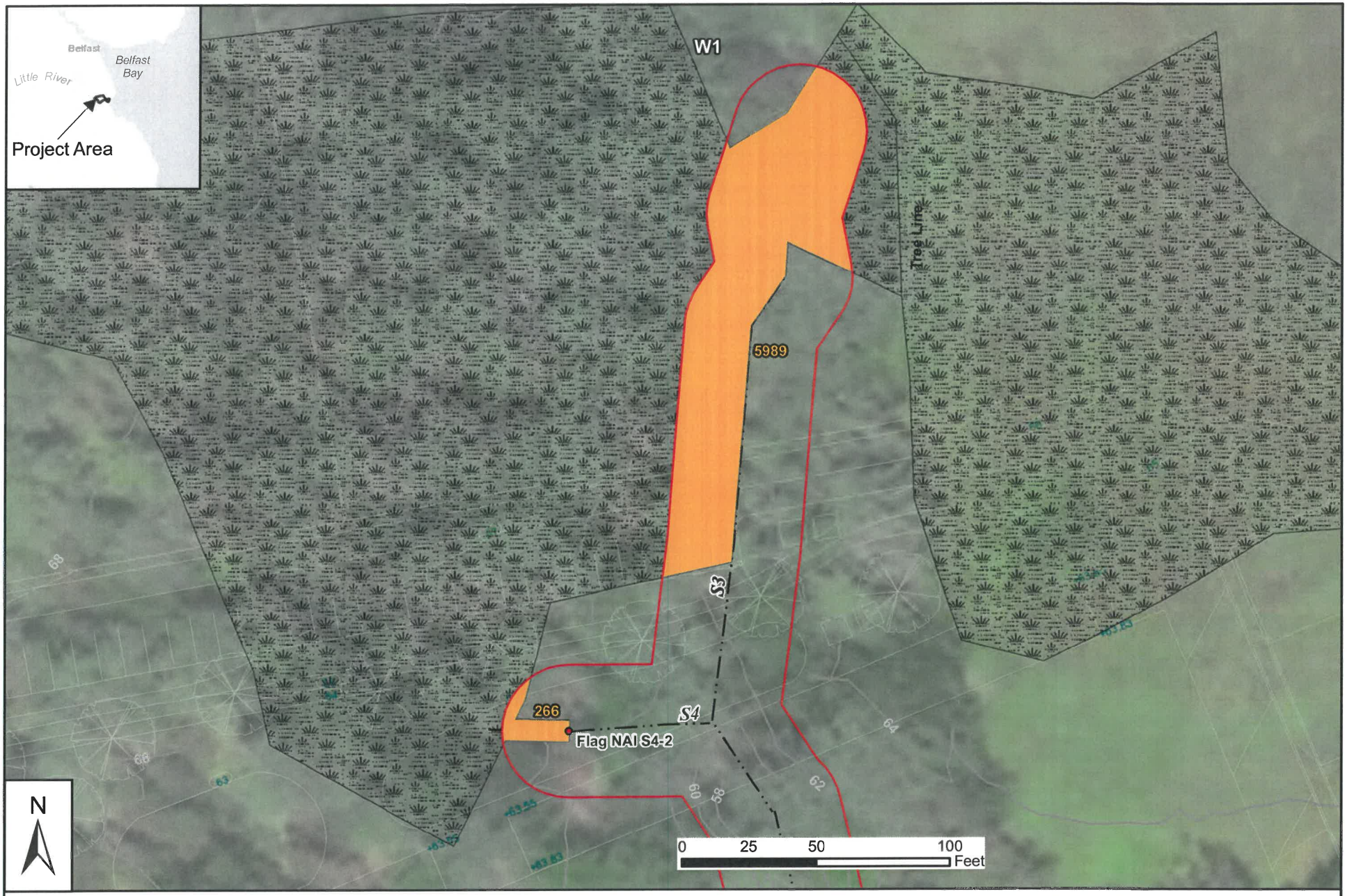


	May-18	Jun-18	Jul-18	May-19	Jun-19	Jul-19
Precip (in.)	0.95	3.91	1.39	3.32	5.51	2.33
Normal (in.)	4.21	3.94	3.39	4.21	3.94	3.39

As shown in Figures 1, 2 and 3 there are portions of W1 and W15 that fall under the definition of a WOSS solely by virtue of being within 25 feet of a NRPA regulated intermittent stream (Chapter 310, Section 4.A.(8)). There are other WOSS located on the project site, as identified in previous submittals to the DEP, and shown in Figure 4. However, the definition of WOSS in this case does not result in the accurate description of site conditions. Wetlands W1 and W15 WOSS are in no way special or significant and the streams that are associated with them are marginal as well. The silt loam soils in the area are conducive to erosion. The project site slopes from north to south and at the general location of a topographical break the slope steepens and collects surface run off sufficiently enough to erode the surface creating channels. There is every indication that these channels convey stormwater runoff and represent intermittent surface flows. Although the grasses are native they are indicative of disturbed sites and the wooded portions of W1 have been disturbed by logging and have a significant presence of facultative upland and facultative species including buckthorn (*Alnus frangula*), an invasive shrub species.

In summary, the wetlands marginally meet the criteria for wetlands, are vegetated with disturbance indicators along with observed disturbances and the intermittent streams exist as the result of conveyance of stormwater runoff. Changes in wetland boundaries and stream extent are indicative of site conditions as confirmed during recent Normandeau and peer review. The WOSS designation is by definition and is not indicative of site conditions.

I expect that the information in this memo is helpful in describing the circumstances relative to the determination of wetlands, streams and the characterization of same when considering impacts to WOSS.



Belfast Aquaculture Project
WOSS Impacts
Date: October 3rd and 6th, 2019

Flag NAI S4-2
25' Stream Buffer
Wetland of Special Significance
Existing Culvert
Intermittent Stream
Stream Not Field Delineated
2 Foot Contours (Existing)
Palustrine Wetlands
Salt Marsh
Cobble Beach
Normandeau Wetland Delineation

NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

Figure 1

Figure 1

Figure 2

Figure 2

Photo 1 – Area of previous conversion from D5 to S5 that is now part of W1 and no longer characterized as stream or drainage due to vegetated cover and lack of a defined channel. Taken October 3, 2019

Figure 3

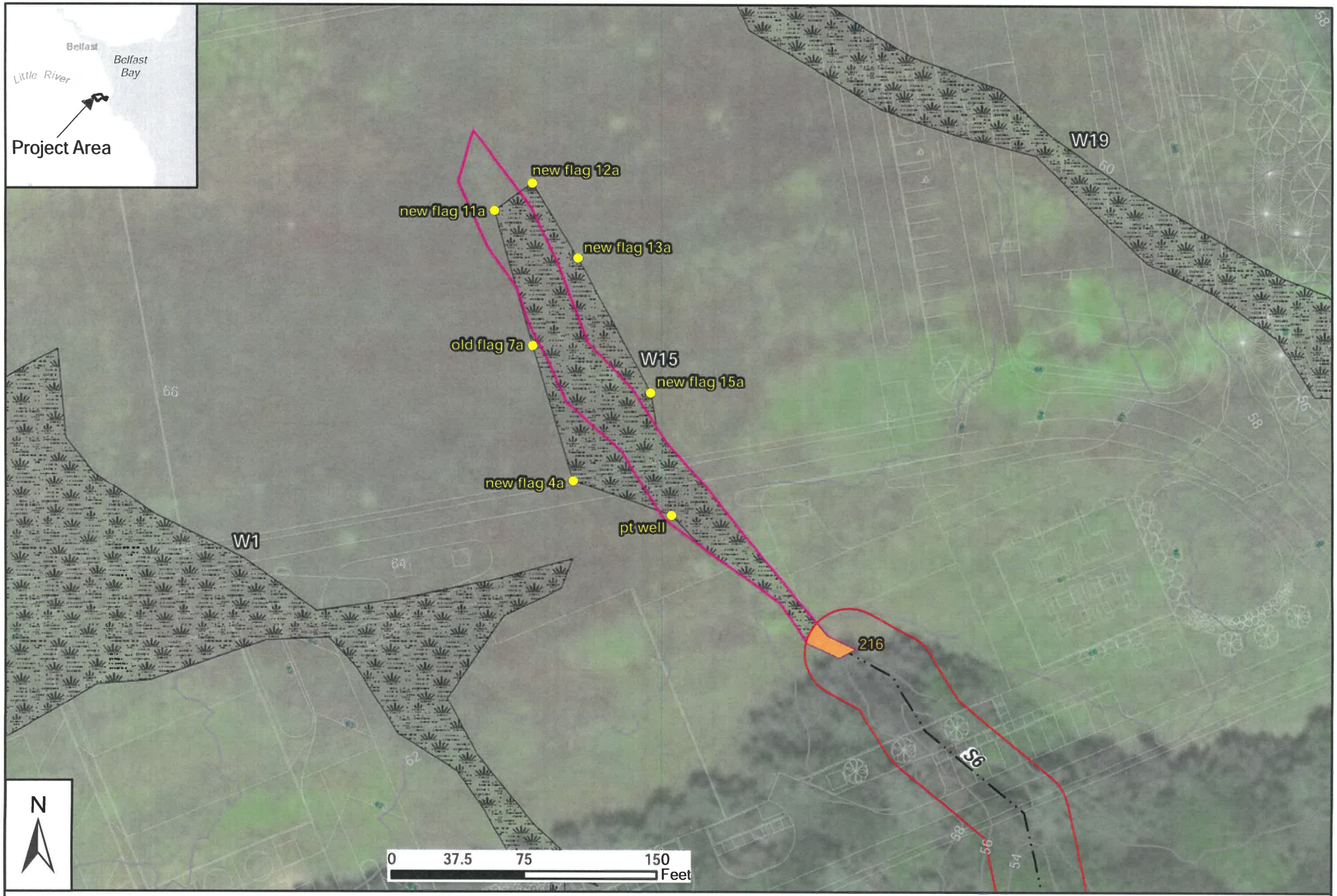
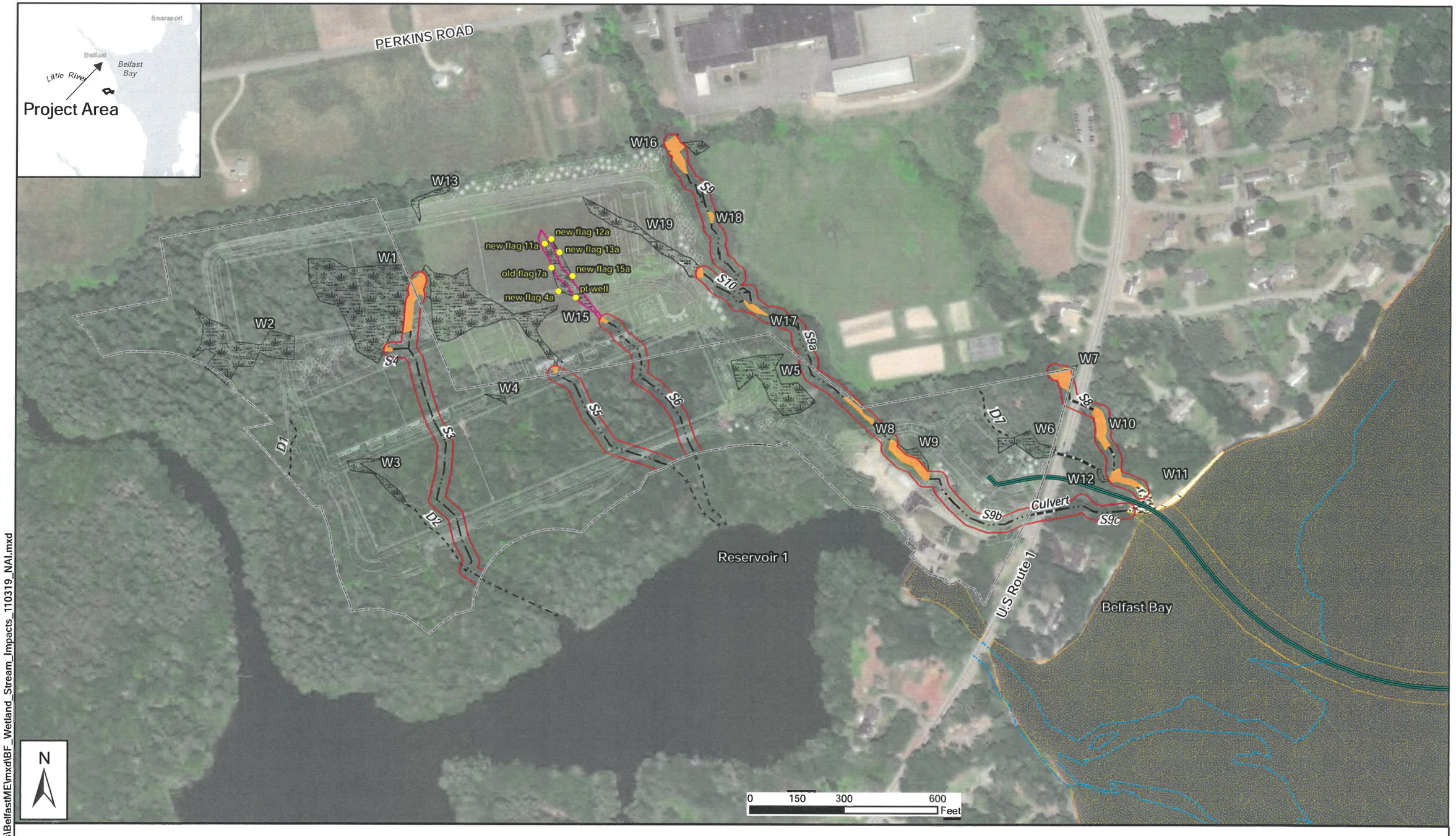


Figure 3

Photo 2 – The Stream portion of S4, formally D4. Taken October 6, 2019.

Photo 3 – The vegetated portion of S4. This is interpreted to be wetland, not stream. Taken October 6, 2019.



Path: J:\Projects\BelfastME\mxd\BF_Wetland_Stream_Impacts_110319_NAI.mxd

Belfast Aquaculture Project
Wetlands of Special Significance
Date: October 3 & 6, 2019

GPS Points
Mean Low Water
Belfast Water District Property Boundary
Current Pipeline Route
25' Stream Buffer
Freshwater WOSS
Coastal WOSS
Existing Culvert
Drainage
Intermittent Stream
Stream Not Field Delineated
Palustrine Wetlands
Salt Marsh
Cobble Beach
Previous (Normandeau) Wetland Delineation

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ENVIRONMENTAL CONSULTANTS

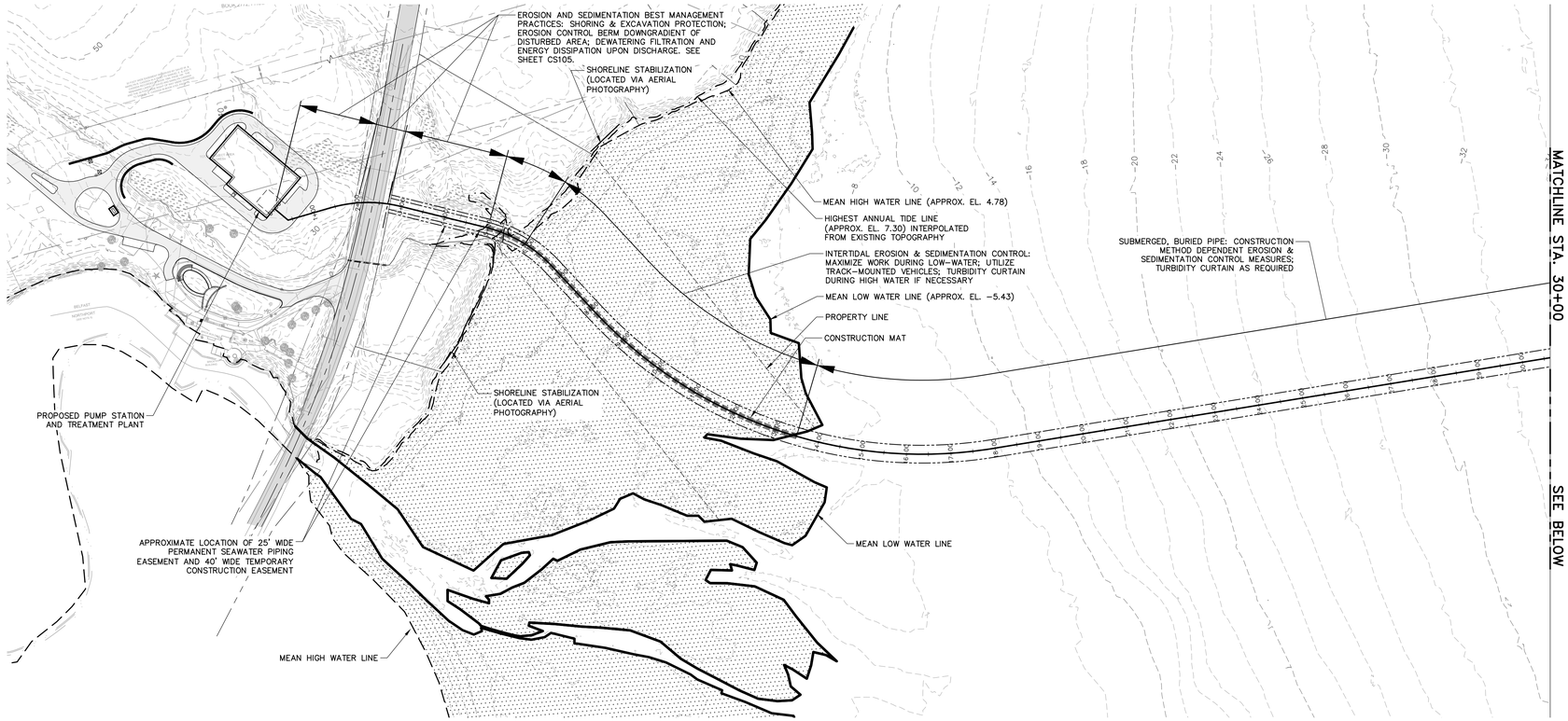
Figure 4

ATTACHMENT C

Erosion Control Construction Sequencing Plans

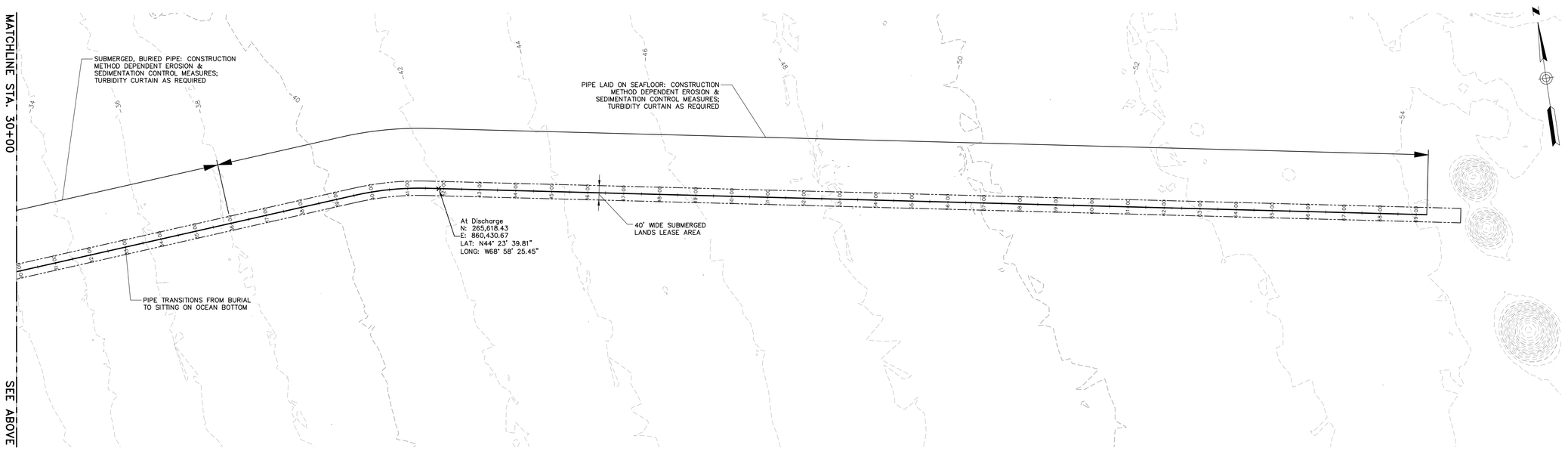
Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008



PLAN

SCALE: 1" = 150'



PLAN

SCALE: 1" = 150'

PLAN REFERENCES:

1. BOUNDARY & TOPOGRAPHIC SURVEY DATED 4-2-2018 BY GOOD DEEDS INC., 109 MAIN STREET, BELFAST, ME 04915, (207) 338-5743
2. 2 FOOT LIDAR CONTOURS OBTAINED FROM THE MAINE OFFICE OF GIS. https://www.maine.gov/megis/
3. BATHYMETRY DATA PROVIDED BY NORMANDEAU ASSOCIATES, ENVIRONMENTAL CONSULTANTS IN OCTOBER 2018.
4. LITTORAL ZONE & INTERTIDAL ZONE SURVEY IS BASED ON A PLAN BY GARTLEY & DORSKY ENGINEERING SURVEYING, 59 UNION STREET, UNIT 1, P.O. BOX 1031 CAMDEN, ME 04843-1031, DATED NOVEMBER 14, 2018.
5. VERTICAL DATUM IS REFERENCED TO NAVD88 (FEET).

NOTES:

- PROPOSED FEATURES ARE APPROXIMATE IN LOCATION AND SCALE.
- PIPE ALIGNMENT IS SETBACK GREATER THAN 25 FEET FROM LITTORAL SIDELINES.
- ANCHORING LOCATIONS ARE SCHEMATIC ONLY. REFER TO ANCHORING DETAILS FOR ANCHOR DIMENSIONS AND SPACING.
- SINGLE PIPE ROUTE SHOWN FOR CLARITY; SYSTEM CONSISTS OF TWO NOMINAL 30" INTAKE PIPES AND ONE NOMINAL 36" DISCHARGE PIPE.

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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

REVISED FOR PERMIT
10-29-19

CURRENT ISSUE STATUS:

TRUE NORTH:

STATE OF MAINE — JAMES D. WILSON — No. 8592 — REGISTERED PROFESSIONAL ENGINEER

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ARCHITECTURE | ENGINEERING | PLANNING | INTERIORS | ENERGY
SMRT

NORDIC AQUAFARMS

BELFAST, MAINE

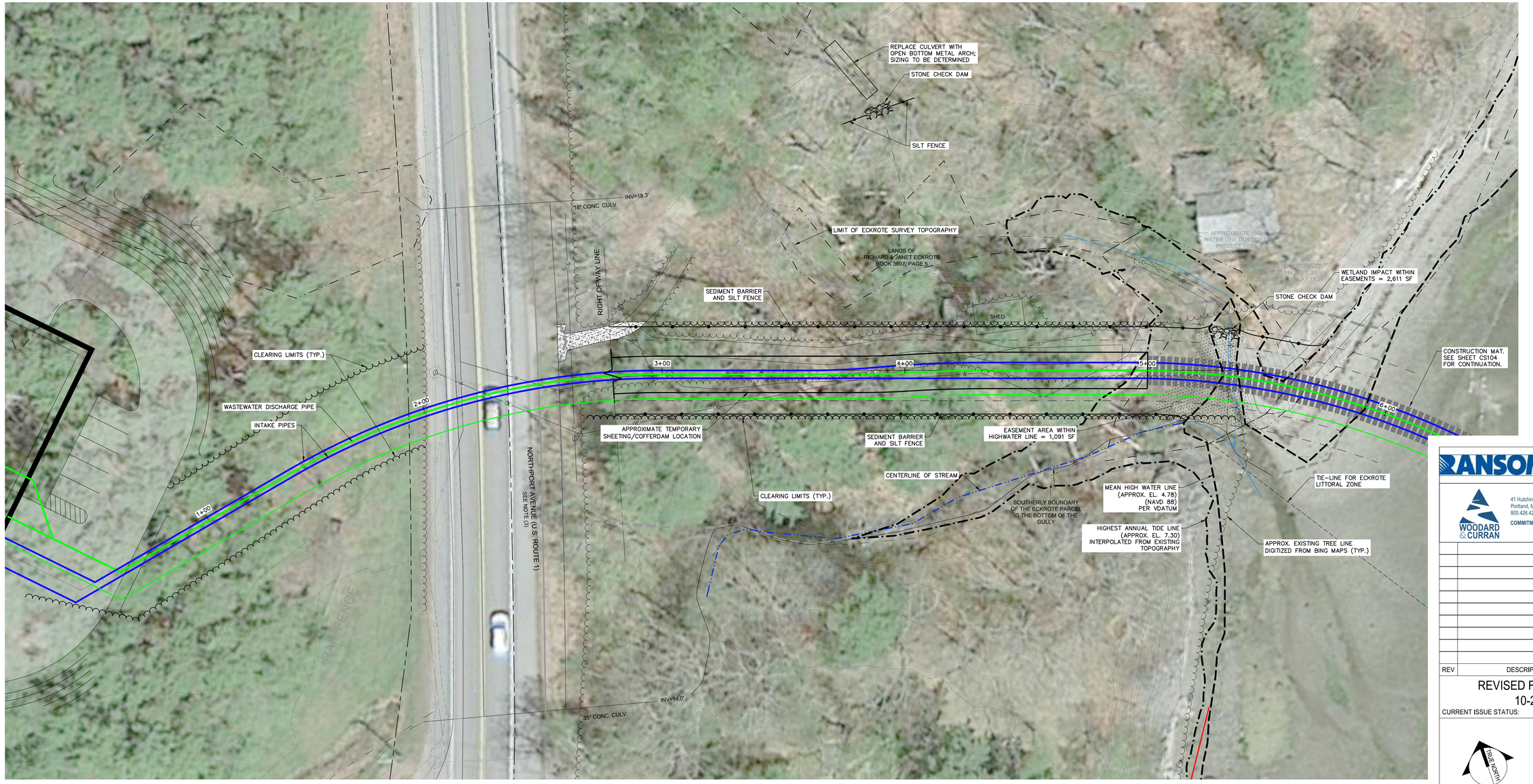
EROSION CONTROL PLAN

300' 0 300' 600'

BAR SCALE
1" = 300'
CHECK GRAPHIC SCALE BEFORE USING

PROJECT MANAGER:	PROJECT NO: 18076
JOB CAPTAIN:	CS104

NOT FOR CONSTRUCTION



PLAN

SCALE: 1" = 20'

CONSTRUCTION SEQUENCING NOTES:

0+00 – 2+00 (SECOND PHASE OF CONSTRUCTION)

DESCRIPTION/LOCATION: TREATMENT BUILDING TO US ROUTE 1.

METHOD OF CONSTRUCTION: OPEN CUT.

METHOD OF SHORING: N/A

EXCAVATED SOILS MANAGEMENT: SOILS TRUCKED TO ONSITE STOCKPILE FOR REUSE AS TRENCH BACKFILL. BLASTED LEDGE TO BE CRUSHED AND USED FOR PIPE BEDDING MATERIAL AND OTHER ONSITE USES.

DEWATERING: PUMPED TO SETTLEMENT POOLS AND/OR SEDIMENT BAGS.

SEDIMENTATION & EROSION CONTROL: SILT FENCE AND EROSION CONTROL BERM DOWN GRADIENT OF ALL EXCAVATION. CONTINUED BMP MEASURES FOR ONSITE STOCKPILE.

2+00 – 2+70 (FIRST PHASE OF CONSTRUCTION)

DESCRIPTION/LOCATION: US ROUTE 1. REQUIRES COORDINATION AND CONSTRUCTION OF TEMPORARY BYPASS OF US ROUTE 1 TRAVELED WAYS (SEE EXHIBIT BP–1).

METHOD OF CONSTRUCTION: BRACED EXCAVATION.

METHOD OF SHORING: STACKED TRENCH BOXES AND/OR TEMPORARY SHEET PILES.

EXCAVATED SOILS MANAGEMENT: SOILS TRUCKED TO ONSITE STOCKPILE FOR REUSE AS TRENCH BACKFILL. BLASTED LEDGE TO BE CRUSHED AND USED FOR PIPE BEDDING MATERIAL AND OTHER ONSITE USES.

DEWATERING: PUMPED TO SETTLEMENT POOLS AND/OR SEDIMENT BAGS.

SEDIMENTATION & EROSION CONTROL: SILT FENCE AND EROSION CONTROL BERM DOWN GRADIENT OF ALL EXCAVATION AND TO PROTECT EXISTING WETLANDS. BMP MEASURES FOR ONSITE STOCKPILE. TEMPORARY DRAINAGE STRUCTURES WITH SEDIMENT TRAPS AND BERMS.

2+70 – 5+00 (THIRD PHASE OF CONSTRUCTION)

DESCRIPTION/LOCATION: ECKROTE PROPERTY EASEMENT FROM US ROUTE 1 TO HIGH TIDE LINE (INTERTIDAL ZONE)

METHOD OF CONSTRUCTION: BRACED EXCAVATION.

METHOD OF SHORING: STACKED TRENCH BOXES AND/OR TEMPORARY SHEET PILES.

EXCAVATED SOILS MANAGEMENT: SOILS TRUCKED TO ONSITE STOCKPILE FOR REUSE AS TRENCH BACKFILL. BLASTED LEDGE TO BE CRUSHED AND USED FOR PIPE BEDDING MATERIAL AND OTHER ONSITE USES.

DEWATERING: PUMPED TO SETTLEMENT POOLS AND/OR SEDIMENT BAGS.

SEDIMENTATION & EROSION CONTROL: SILT FENCE AND EROSION CONTROL BERM ALONG CUTTING LIMITS OF EASEMENT. CONTINUED BMP MEASURES FOR ONSITE STOCKPILE.

5+00 – 13+50 (FOURTH PHASE OF CONSTRUCTION)

DESCRIPTION/LOCATION: INTERTIDAL ZONE

METHOD OF CONSTRUCTION: MUST BE COORDINATED WITH THE TIDES. EXCAVATION OF TRENCH WILL BE OPEN CUT AND EXCAVATED MATERIAL WILL BE TEMPORARILY STOCKPILED ON A BARGE STATIONED DURING HIGH TIDES TO BE ALONG THE WORK. SHORT SEGMENTS OF FLANGED PIPE (20–100 LF) WILL BE ADVANCED AS THE TRENCH IS PREPARED WITH THE CONNECTIONS BETWEEN PIPE BOLTED TOGETHER PRIOR TO BACKFILL FROM THE BARGE MATERIALS. EXCESS MATERIALS WILL BE MOVED BY BARGE TO A LOCATION WHERE IT CAN BE UNLOADED TO TRUCKS AND DISPOSED OF AT A LICENSED LANDFILL FACILITY.

METHOD OF SHORING: TRENCH BOX.

EXCAVATED SOILS MANAGEMENT: TEMPORARY STORAGE OF ALL EXCAVATED MATERIAL ON ADJACENT BARGE DURING THE WORK. TRENCH WILL BE BACKFILLED FROM BARGE MATERIALS. EXCESS MATERIALS WILL PERIODICALLY BE MOVED BY BARGE TO A LOCATION WHERE IT CAN BE UNLOADED TO TRUCKS AND DISPOSED OF AT A LICENSED LANDFILL FACILITY.

DEWATERING: PUMPED TO SETTLEMENT POOLS AND/OR SEDIMENT BAGS IF POSSIBLE. IF NOT, BOLTED CONNECTIONS WILL BE MADE BY DIVERS AND THERE WILL BE NO DEWATERING.

SEDIMENTATION & EROSION CONTROL: TURBIDITY CURTAIN ON BARGE. UTILIZE 16–TO–20 FOOT WIDE CRANE MATS FOR EXCAVATOR OPERATIONS.

13+50 – 36+00 (FIFTH PHASE OF CONSTRUCTION)

DESCRIPTION/LOCATION: SUBMERGED BURIED SEGMENT.

METHOD OF CONSTRUCTION: ALL EQUIPMENT AND MATERIALS ARRIVE AT SITE VIA BARGE. EXCAVATION OF TRENCH WILL BE OPEN CUT AND EXCAVATED MATERIAL WILL SIDE CAST ADJACENT TO THE TRENCH. LONGER SECTIONS OF WELDED JOINT PIPE BE UTILIZED. JOINTS WILL BE WELDED ON THE BARGES AND ENDS TEMPORARILY CAPPED. PRECAST ANCHORS WILL BE ATTACHED, AND THE PIPE WILL BE FLOATED TO A LOCATION ABOVE THE PREPARED TRENCH. AIR WILL BE RELEASED FROM THE PIPE TO ALLOW IT TO SETTLE IN PLACE. EXCESS MATERIALS WILL BE MOVED BY BARGE TO A LOCATION WHERE IT CAN BE UNLOADED TO TRUCKS AND DISPOSED OF AT A LICENSED LANDFILL FACILITY.

METHOD OF SHORING: N/A

EXCAVATED SOILS MANAGEMENT: TRENCH WILL BE BACKFILLED WITH PREVIOUSLY EXCAVATED MATERIAL. EXCESS MATERIALS WILL PERIODICALLY BE MOVED BY BARGE TO A LOCATION WHERE IT CAN BE UNLOADED TO TRUCKS AND DISPOSED OF AT A LICENSED LANDFILL FACILITY.

DEWATERING: N/A

SEDIMENTATION & EROSION CONTROL: TURBIDITY CURTAIN ON BARGES.

36+00 – 69+00 (SIXTH PHASE OF CONSTRUCTION)

DESCRIPTION/LOCATION: SUBMERGED SEGMENT ON SEAFLOOR.

METHOD OF CONSTRUCTION: ALL EQUIPMENT AND MATERIALS ARRIVE AT SITE VIA BARGE. THERE IS NO EXCAVATION OF MATERIALS FOR THIS PHASE OF CONSTRUCTION. LONG SECTIONS OF WELDED JOINT PIPE BE UTILIZED. JOINTS WILL BE WELDED ON THE BARGES AND ENDS TEMPORARILY CAPPED. PRECAST ANCHORS WILL BE ATTACHED, AND THE PIPE WILL BE FLOATED TO A LOCATION ABOVE THE INTENDED PIPE ROUTE WHERE TEMPORARY WOOD PILES WILL ALIGN THE PIPES. AIR WILL BE RELEASED FROM THE PIPE TO ALLOW IT TO SETTLE IN PLACE. NO SOIL EXCAVATION OR PLACEMENT OF NEW SOILS IS ANTICIPATED DURING THIS PHASE OF WORK.

METHOD OF SHORING: N/A

EXCAVATED SOILS MANAGEMENT: N/A

DEWATERING: N/A

SEDIMENTATION & EROSION CONTROL: N/A.

RANSOM Consulting Engineers and Scientists

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Portland, Maine 04102
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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE

REVISED FOR PERMIT
10-29-19

CURRENT ISSUE STATUS:

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JAMES D. WILSON No. 8592 STATE OF MAINE REGISTERED PROFESSIONAL ENGINEER

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SMRT

NORDIC AQUAFARMS

BELFAST, MAINE

EROSION CONTROL CONSTRUCTION SEQUENCING PLAN

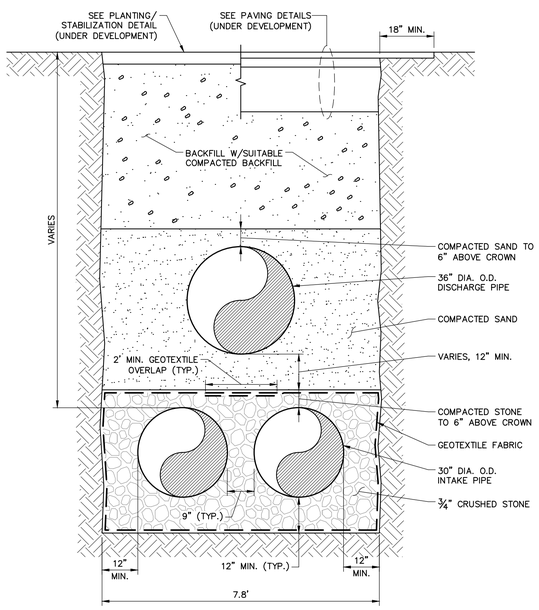
20' 0 20' 40'

BAR SCALE
1" = 20'
CHECK GRAPHIC SCALE BEFORE USING

PROJECT MANAGER:	PROJECT NO: 18076
JOB CAPTAIN:	CS105

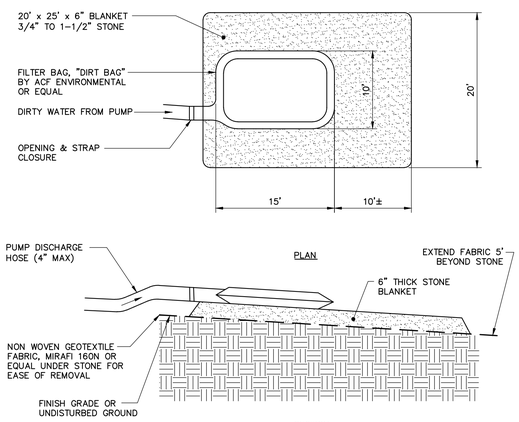
NOT FOR CONSTRUCTION

24x36



8 / CS503 BURIED 3–PIPE TRENCH DETAIL (LAND)

SCALE: 1" = 2'

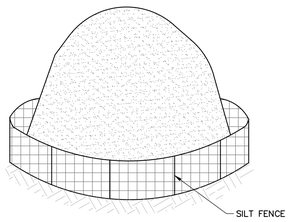


DEWATERING NOTES

1. LOCATE DISCHARGE SITE ON FLAT UPLAND AREAS AS FAR AWAY AS POSSIBLE FROM STREAMS, WETLANDS, OTHER RESOURCES AND POINTS OF CONCENTRATED FLOW.
2. DISCHARGE NOT PERMITTED WITHIN 200' OF A STREAM OR 100' OF A WETLAND.
3. DOWNGRADIENT RECEIVING AREA MUST BE WELL VEGETATED OR OTHERWISE STABLE FROM EROSION, I.E. FOREST FLOOR OR COARSE GRAVEL/STONE.
4. NEVER DISCHARGE TO AREAS THAT ARE BARE OR NEWLY VEGETATED.
5. DIRT BAG MATERIAL BASED ON PARTICLE SIZE IN DIRTY WATER, I.E., FOR COARSE PARTICLES A WOVEN MATERIAL; FOR SILTS/CLAYS A NON–WOVEN MATERIAL.
6. DO NOT OVER PRESSURIZE DIRT BAG OR USE BEYOND CAPACITY.
7. CHANNELS DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA NEED TO BE STABLE. IF FLOW VELOCITIES CAUSE EROSION WITHIN THE CHANNEL THEN A DITCH LINING SHOULD BE USED.
8. BUCKETED WATER SHOULD BE DISCHARGED IN A STABLE MANNER TO THE SEDIMENT REMOVAL AREA. A SPLASH PAD OF RIPRAP UNDERLAIN WITH GEOTEXTILE MAY BE NECESSARY TO PREVENT SCOURING OF SOIL.
9. DEWATERING IN PERIODS OF INTENSE, HEAVY RAIN, WHEN THE INFILTRATIVE CAPACITY OF THE SOIL IS EXCEEDED, SHOULD BE AVOIDED.
10. INSTALL DIVERSION DITCHES OR BERMS TO MINIMIZE THE AMOUNT OF CLEAN STORMWATER RUNOFF ALLOWED INTO THE EXCAVATED AREA.
11. DURING THE ACTIVE DEWATERING PROCESS, INSPECTION OF THE DEWATERING FACILITY SHOULD BE REVIEWED FREQUENTLY. SPECIAL ATTENTION SHOULD BE PAID TO THE BUFFER AREA FOR ANY SIGN OF EROSION AND CONCENTRATION OF FLOW THAT MAY COMPROMISE THE BUFFER AREA. OBSERVE WHERE POSSIBLE THE VISUAL QUALITY OF THE EFFLUENT AND DETERMINE IF ADDITIONAL TREATMENT CAN BE PROVIDED.
12. EROSION CONTROL REQUIRED AROUND DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE.

9 / CS503 DEWATERING DISCHARGE SEDIMENT CONTROL DEVICE

SCALE: NOT TO SCALE

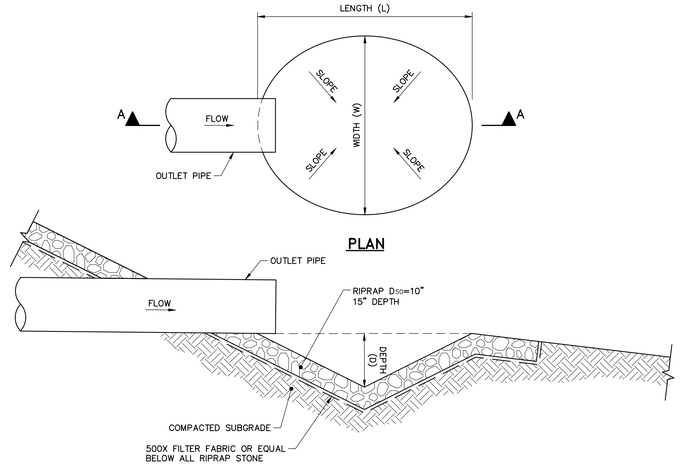


NOTES:

1. STOCKPILES SHALL BE SURROUNDED BY SILT FENCE.
2. STOCKPILES SHALL HAVE A MAXIMUM 2:1 (H:V) SIDE SLOPE.
3. REPAIR OR REPLACE DAMAGED SILT FENCE DUE TO CONSTRUCTION ACTIVITIES OR STOCKPILE MITIGATION.
4. STOCKPILE SHALL BE LOCATED IN AREAS AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER.

11 / CS503 TEMPORARY UPLAND SOIL STOCKPILE

SCALE: NOT TO SCALE

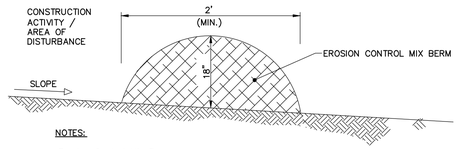


SECTION A–A

PLUNGE POOL DIMENSIONS								
	REQUIRED				PROVIDED			
PIPE SIZE	(L)	(W)	(D)	SLOPE	(L)	(W)	(D)	SLOPE
36"	12'	6'	3'	2:1	28'	22'	3'	3:1
30"	10'	5'	2.5'	2:1	24'	18'	2.5'	3:1

10 / CS503 RIPRAP PLUNGE POOL

SCALE: NOT TO SCALE



NOTES:

Erosion Control Mix Berms

Erosion control mix can be manufactured on or off the project site. It must consist primarily of organic material and may include: shredded bark, stump grindings, composted bark, or acceptable manufactured products. Wood and bark chips, ground construction debris or reprocessed wood products will not be acceptable as the organic component of the mix.

Composition

Erosion control mix shall contain a well–graded mixture of particle sizes and may contain rocks less than 4" in diameter. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth. The mix composition shall meet the following standards:

- The organic matter content shall be between 80 and 100%, dry weight basis.
- Particle size by weight shall be 100 % passing a 6" screen and a minimum of 70%, maximum of 85%, passing a 0.75" screen.
- The organic portion needs to be fibrous and elongated.
- Large portions of silts, clays or fine sands are not acceptable in the mix.
- Soluble salts content shall be < 4.0 mmhos/cm.
- The pH should fall between 5.0 and 8.0.

12 / CS503 SEDIMENT BARRIER – EROSION CONTROL MIX BERM

SCALE: NOT TO SCALE

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COMMITMENT & INTEGRITY DRIVE RESULTS

REV	DESCRIPTION	DATE
	REVISED FOR PERMIT 10-29-19	

CURRENT ISSUE STATUS:

STATE OF MAINE JAMES D. WILSON No. 8592 REGISTERED PROFESSIONAL ENGINEER

TRUE NORTH:

SMRT Architects and Engineers
144 Fore Street, PO Box 618
Portland, Maine 04104
ARCHITECTURE | ENGINEERING | PLANNING | INTERIORS | ENERGY
SMRT

NORDIC AQUAFARMS

BELFAST, MAINE

CIVIL DETAILS - 3

PROJECT MANAGER:

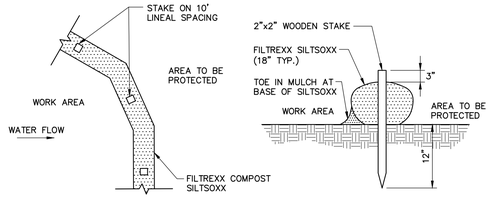
PROJECT NO: 18076

JOB CAPTAIN:

CS503

NOT FOR CONSTRUCTION

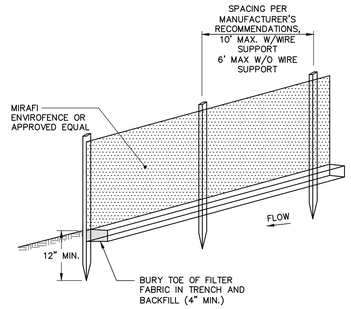
24x36



PLAN VIEW SECTION VIEW

13 CS504 **SILTATION BARRIER – SILTSOXX**

SCALE: NOT TO SCALE



NOTES:

- INSTALL FABRIC ON UPHILL SIDE OF SUPPORT POSTS
- INSTALL SILT FENCE ACROSS SLOPES
- SILT FENCE SHALL NOT BE USED IN DRAINAGE WAYS

MAINTENANCE: INSPECT FOR TEARS IN THE FABRIC OR DAMAGE TO SUPPORTS. REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF SIX–INCHES OR LESS.

REMOVAL: WHEN UPSLOPE AREAS ARE STABILIZED, THE STRUCTURE AND ANY ACCUMULATED SEDIMENT WILL BE REMOVED.

14 CS504 **SILTATION BARRIER – SILTATION FENCE DETAIL**

SCALE: NOT TO SCALE

EROSION AND SEDIMENT CONTROL NOTES

Temporary Erosion Control

Contractor shall prepare and submit a soil erosion and water pollution control plan to engineer in accordance with section 656.

Measure	Dates For Use	Timing, Activity, and Location
Sedimentation Barrier	ALL	Before soil disturbance, install downhill of areas to be disturbed and around material stockpiles.
Up–slope Diversion	ALL	Before soil disturbance, install uphill of areas to be disturbed and material stockpiles.
Catch Basin Protection	ALL	Before soil or pavement disturbance, install ACF Environmental, Inc. High Flow Siltsack, Siltsaver Inlet Filter. or equal, installed per manufacturer's requirements.
Dust Control	ALL	During dry weather, apply water and calcium chloride to control dust.
Temporary Seeding	April 15 to Oct. 1	Soil stockpiles that are not covered and disturbed areas that will not be disturbed again within 14 days. If grass growth provides less than 95% soil coverage by Nov. 1, apply mulch and anchor with erosion control blanket.
Mulch	April 15 to Sept. 15	On all areas of exposed soil apply 100–150 lbs (2.5 bales) per 1,000 sq ft. by mechanical blower.
Winter Mulch	Sept. 16 to Oct. 31	On all areas of exposed soil apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. by mechanical blower. Erosion control blanket may be used as a substitute for winter mulch.
	Nov. 1 to April 14	On all areas of exposed soil, apply 150 to 170 lbs. mulch (4 bales) per 1,000 sq. ft. and anchor with netting at the end of each working day. Erosion control blanket may be used as a substitute for winter mulch.
Inspections	Until site is permanently stabilized	Inspect the erosion and sedimentation control measures daily, and maintain and repair as necessary.

Permanent Erosion Control:

Measure	Dates For Use	Timing, Activity, and Location
Pavement – Base Course – Final Course	When no frost is in ground	Install only in areas shown on the plan, shortly after pavement base is brought to final grade. Install near completion of project.
Permanent Seeding	April 15 to Sept. 15	On final grade areas, within 7 days of grade preparation, prepare topsoil, followed by seed and mulch application.
Dormant Seeding	Sept. 16 to April 15	On final grade areas, with prepared topsoil. Apply seed at double the specified rate on bare soil, and follow with an application of winter mulch.
Ground Cover, Trees, Shrubs	April 15 to Nov. 1	Install with final landscaping.
Permanent Mulch	ALL	Install with final landscaping.

Inspections:

Regular inspections of all erosion and sedimentation controls shall be made at least weekly and prior to and following storm events. Minimum inspections shall be made as listed in the table below.

Inspected Item	Look For
Mulched Surfaces	Thin mulch or inadequate application. Wind movement.
Seeded Surfaces	Poor seed germination. Loss of mulch. Development of rivulets.
Sediment Barrier	Sediment build–up to one half the height of the barrier. Undermining of the barrier. Supporting stakes loose, toppled, or unmarked. Breaks in barrier.
Perimeter Diversion	Discharge is to stabilized area. Erosion or breaks in barrier. Supporting stakes loose, toppled or unmarked.
Catch Basin Protection	Sediment build–up and structure blockages. Slow flow/Ponding water. Breaks in fabric or voids in barrier.
Dewatering Filter	Breaks in fabric or supporting structure. Slow flow, indicating high sediment build–up.
Construction Entrance	Sedimentation of roadways. Off–site dust complaints.

EROSION AND SEDIMENTATION CONTROL NOTES

TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE THE USE OF STABILIZED CONSTRUCTION ENTRANCES, HYDRAULIC MULCH, HAY AND STRAW MULCH, EROSION CONTROL BLANKET, TURF REINFORCED MATTING, RIPRAP AND TEMPORARY SEEDING. TEMPORARY SEDIMENT CONTROL MEASURES INCLUDE THE USE OF SILT FENCE, EROSION CONTROL MIX BERMS, PLUNGE POOLS, CHECK DAMS, SEDIMENT TRAPS, CATCHBASIN SEDIMENT COLLECTION BAGS AND GEOTEXTILE FILTER BAGS. PERMANENT MEASURES INCLUDE THE USE OF RIPRAP AT EXPOSED STORMDRAIN AND CULVERT INLETS AND OUTLETS, ARMORED SWALES AND SLOPES AND PERMANENT VEGETATION.

GENERAL

A. THE PROJECT SHALL CONFORM WITH THE STANDARDS OF THE NRPA PERMIT AND ACOE GENERAL PERMIT.

B. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK PUBLISHED BY THE MAINE DEP UNLESS OTHERWISE NOTED IN THESE PLANS. HTTP://MAINE.GOV/DEP/BLWQ/DOCSTAND/ESCBMPS/

C. ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DEEMED NECESSARY BY THE OWNER'S REPRESENTATIVE, DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND/OR MUNICIPAL OFFICIALS SHALL BE INSTALLED BY THE CONTRACTOR.

D. THE CONTRACTOR IS RESPONSIBLE FOR ALL FINES RESULTING FROM EROSION OR SEDIMENTATION FROM THE SITE TO SURROUNDING PROPERTIES, WATER BODIES, OR WETLANDS AS A RESULT OF THIS PROJECT.

E. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE SITE WHENEVER POSSIBLE WHILE ALLOWING PROPER SITE DEVELOPMENT.

F. CONSTRUCTION STAGING SHALL BE CONDUCTED IN A WAY TO MINIMIZE THE POTENTIAL FOR STORMWATER RUN–ON TO DISTURBED AREAS.

G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT/MAINTENANCE OF ALL EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED TO THE SATISFACTION OF THE ABOVE PERSONNEL. DESCRIPTIONS OF PERMANENT STABILIZATION FOR VARIOUS COVER TYPES FOLLOWS:

i. FOR SEEDED AREAS, PERMANENT STABILIZATION MEANS THAT 90% OF THE DISTURBED AREA IS COVERED WITH REASONABLY THICK UNIFORM STAND OF PERMANENT GRASS SPECIES, FREE FROM SIZABLE THIN OR BARE SPOTS.
ii. FOR SODDED AREAS, PERMANENT STABILIZATION MEANS THAT COMPLETE BINDING OF THE SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE OFF.
iii. FOR MULCHED AREAS, PERMANENT STABILIZATION MEANS TOTAL COVERAGE OF THE EXPOSED AREA WITH AN APPROVED MULCH MATERIAL.
iv. FOR AREAS STABILIZED WITH RIPRAP, PERMANENT STABILIZATION MEANS THAT SLOPES STABILIZED WITH RIPRAP HAVE AN APPROPRIATE BACKING OF A WELL–GRADED GRAVEL OR APPROVED GEOTEXTILE. STONE MUST BE SIZED APPROPRIATELY AND IN ACCORDANCE WITH SECTION E–6 OF THE MAINE EROSION AND SEDIMENT CONTROL BMP MANUAL.
v. FOR PAVED AREAS, PERMANENT STABILIZATION MEANS THE PLACEMENT OF THE ASPHALT BINDER COURSE.
vi. FOR OPEN CHANNELS, LEVEL SPREADERS, ENGINEERED BUFFERS OR OTHER DESIGNED STORMWATER CONVEYANCE STRUCTURE, PERMANENT STABILIZATION MEANS THE CHANNELIZED AREA(S) IS STABILIZED WITH MATURE VEGETATION AT LEAST THREE INCHES IN HEIGHT, WITH APPROVED RIPRAP, OR WITH OTHER NON–EROSIVE LINING CAPABLE OF WITHSTANDING THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHOUT RELIANCE ON CHECK DAMS TO SLOW FLOW. THERE SHALL BE NO EVIDENCE OF SLUMPING, UNDERCUTTING OR DOWNCUTTING OF THE DESIGNED CHANNEL.

H. IF THE AREA WILL REMAIN UNWORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, AND WILL NOT BE BUILT ON, THEN IMMEDIATELY PROVIDE PERMANENT STABILIZATION USING VEGETATION THROUGH PLANTING, SEEDING, SOD OR THROUGH THE USE OF PERMANENT MULCH OR RIPRAP. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS. AMEND AREAS OF DISTURBED, OVERLY–COMPACTED SUBSOIL WITH TOPSOIL OR COMPOST AND LIGHTLY TILL 2–3" OF SOIL AMENDMENTS INTO THE TOP 8" OF SOIL.

I. PROTECT ALL SEEDED AREAS WITH MULCH OR EROSION CONTROL BLANKET IN AREAS OF SHEET OR CONCENTRATED FLOWS. MULCH ALL AREAS SO THAT SOIL IS NOT VISIBLE THROUGH THE MULCH REGARDLESS OF THE APPLICATION RATE. SCHEDULE SEEDING OR SODDING TO AVOID FAILURE DUE TO SUMMER DROUGHT AND FALL FROST. NEWLY SEEDED AREAS SHOULD BE PROTECTED FROM VEHICLE TRAFFIC, PEDESTRIAN TRAFFIC AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL ESTABLISHED. AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE OR SURFACE EROSION IS EVIDENT.

J. DITCH LININGS AND RIPRAP INLET AND OUTLET PROTECTION SHALL BE INSTALLED WITHIN 48 HOURS OF COMPLETING THE GRADING OF THAT SECTION OF DITCH OR INSTALLATION OF THE CULVERT.

K. EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL PERMANENT SLOPES STEEPER THAN 3:1, IN THE BASE OF DITCHES AND ANY DISTURBED AREAS WITHIN 100 FEET OF A PROTECTED NATURAL RESOURCE (WETLANDS AND WATER RESOURCES). EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL. EROSION CONTROL BLANKET SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

L. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURE UPON STABILIZATION OF PROJECT AREA & COST SHALL BE INCIDENTAL TO CONTRACT.

WINTER CONDITIONS

A. WINTER CONSTRUCTION IS CONSTRUCTION ACTIVITY PERFORMED DURING THE PERIOD FROM NOVEMBER 1 THROUGH APRIL 1. IF AREAS WITHIN THE CONSTRUCTION AREA ARE NOT STABILIZED WITH TEMPORARY OR PERMANENT MEASURES OUTLINED ABOVE BY NOVEMBER 15 THEN THE SITE MUST BE PROTECTED WITH ADDITIONAL STABILIZATION MEASURES THAT ARE SPECIFIC TO WINTER CONDITIONS.

GOOD HOUSEKEEPING AND POLLUTION PREVENTION

A. SPILL PREVENTION CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM BEING DISCHARGED FROM MATERIALS ON SITE, INCLUDING STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER RUNOFF AND APPROPRIATE SPILL PREVENTION, CONTAINMENT AND RESPONSE PLANNING AND IMPLEMENTATION.

B. DURING CONSTRUCTION, PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUND OR SURFACE WATERS MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO INFILTRATION AREAS. AN "INFILTRATION AREA" IS ANY ARE OF THE SITE THAT BY DESIGN, OR AS A RESULTS OF SOIL AND TOPOGRAPHY, ACCUMULATES RUNOFF THAT INFILTRATES IN THE SOIL. DIKES, BERMS, SUMPS AND OTHER FORMS OF TEMPORARY SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER MAY BE USED TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS.

C. LOCATE ALL MATERIAL STOCKPILES WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.

D. TAKE ALL REASONABLE MEASURES TO MINIMIZE DUST RESULTING FROM THE PROJECT. OIL MAY NOT BE USED FOR DUST CONTROL.

E. LOCATE ALL LITTER, CONSTRUCTION DEBRIS AND CONSTRUCTION CHEMICALS WITH CONSIDERATION FOR STORMWATER DRAINAGE PATTERNS AND INFRASTRUCTURE.

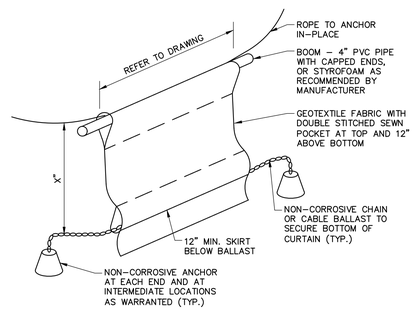
F. TRENCH OR FOUNDATION DE–WATERING MUST BE SPREAD THROUGH SUFFICIENT NATURAL BUFFERS THAT HAVE CAPACITY TO INFILTRATE THE PUMPED WATER OR SHOULD BE PUMPED TO DESIGNED CONSTRUCTION DEWATERING DEVICES AS DESCRIBED IN THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK.

G. SEDIMENTS AND SOIL MATERIALS SHOULD BE SWEPT FROM PAVED SURFACES AT THE END OF EACH WORKDAY OR PRIOR TO RAIN EVENTS, WHENEVER POSSIBLE.

INSPECTION AND MAINTENANCE

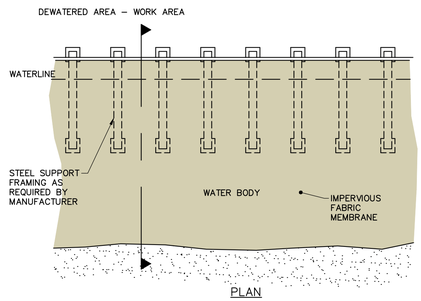
A. A PERSON WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROLS, INCLUDING THE STANDARDS IN THE MAINE CONSTRUCTION GENERAL PERMIT, THE MAINE EROSION AND SEDIMENT CONTROL BMPS HANDBOOK OR ANY MUNICIPAL REQUIREMENTS MUST CONDUCT THE INSPECTION. THIS PERSON MUST BE IDENTIFIED IN THE INSPECTION LOG. IF ADDITIONAL BMPS OR MODIFICATIONS TO BMPS ARE NECESSARY, THE MODIFICATIONS MUST BE IMPLEMENTED WITH 7 CALENDAR DAYS OR PRIOR TO ANY PRECIPITATION EVENT. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

B. AN INSPECTION AND MAINTENANCE LOG MUST BE KEPT BY THE CONTRACTOR, SUMMARIZING THE SCOPE OF THE INSPECTION, DATE, AND MAJOR OBSERVATIONS RELATING TO THE OPERATION OF EROSION AND SEDIMENT CONTROL BMPS, MATERIAL STORAGE AREAS, AND VEHICLE ACCESS POINTS TO THE CONSTRUCTION AREA. THE INSPECTION LOG SHOULD BE DELIVERED TO THE PROPERTY OWNER OR RESPONSIBLE CONTRACTING ENTITY UPON COMPLETION OF THE PROJECT.

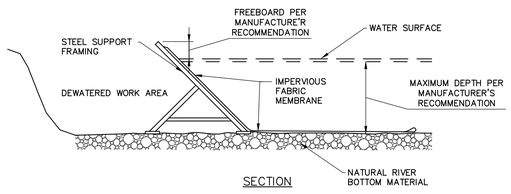


15 CS504 **TURBIDITY CURTAIN**

SCALE: NOT TO SCALE



PLAN



SECTION

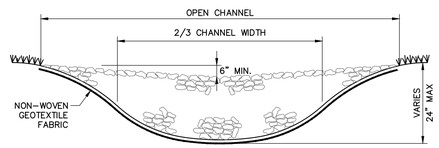
NOTE:

COFFERDAM DETAIL SHOWN FOR REFERENCE PURPOSES. CONTRACTOR SHALL PROVIDE DESIGN OF TEMPORARY COFFERDAMS, STAMPED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF MAINE.

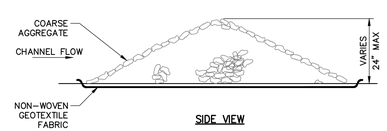
16 CS504 **TEMPORARY FRAME & FABRIC COFFERDAM DETAIL**

SCALE: NOT TO SCALE

TO BE INSTALLED AROUND WORK AREA IN ACCORDANCE WITH CONTRACTOR'S WORK PLAN



FRONT VIEW



SIDE VIEW

NOTES:

1. CHECK DAMS SHALL BE SPACED SO THE TOP OF DOWNGRADIENT CHECK DAM AND BOTTOM OF THE UPGRADIENT CHECK DAM SHALL BE AT THE SAME ELEVATION.
2. REPLACE OR REPAIR CHECK DAM WITHIN TWENTY–FOUR (24) HOURS OF OBSERVED FAILURE.
3. MAXIMUM SLOPE IS 2:1.

17 CS504 **STONE CHECK DAM**

SCALE: NOT TO SCALE

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COMMITMENT & INTEGRITY DRIVE RESULTS

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CURRENT ISSUE STATUS:

STATE OF MAINE JAMES D. WILSON No. 8592 REGISTERED PROFESSIONAL ENGINEER

TRUE NORTH:

SMRT Architects and Engineers
144 Fore Street, PO Box 618
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ARCHITECTURE | ENGINEERING | PLANNING | INTERIORS | ENERGY
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NORDIC AQUAFARMS

BELFAST, MAINE

CIVIL DETAILS - 4

PROJECT MANAGER:

PROJECT NO: 18076

JOB CAPTAIN:

CS504

NOT FOR CONSTRUCTION

24x36

ATTACHMENT D

Letter of Intent to Fund

Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008

Nordic Aquafarms AS
Att: CEO Bernt Olav Røttingsnes
Øraveien 2,
1630 Gamle Fredrikstad

Oslo, 1 November 2019

Background

Carnegie Investment Bank ("Carnegie") has been requested by Nordic Aquafarms ("NAF") to provide a statement regarding our view on availability of funds to secure financing of NAF's contemplated aquafarm in Belfast, Maine, as a combination of debt (through Direct Lending) and new equity.

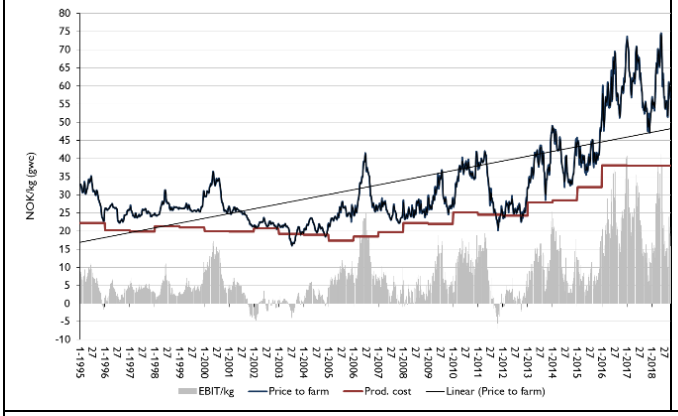
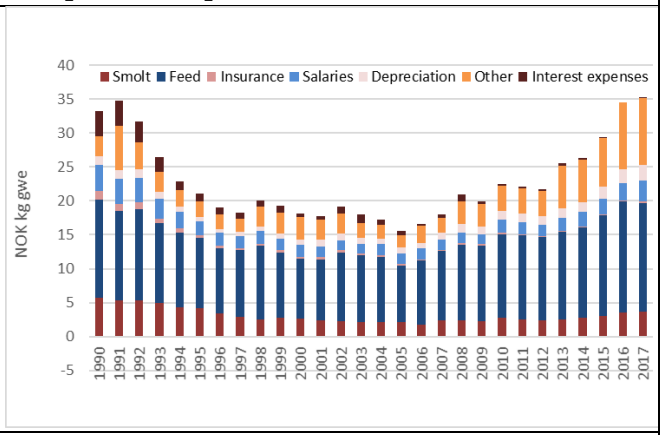
Carnegie is a leading investment bank in the Nordic region with substantial experience in raising capital primarily to companies based in the Nordics. Our Norwegian franchise has paid particular attention to industries with strong roots in Norway, hereunder seafood and aquaculture, and over the past decades we have raised billions of USD, primarily in equity to finance growth and M&A within the seafood industry. We have raised capital both to listed and unlisted companies and advised in transactions related to several segments of the seafood industry (catch, aquaculture, services, equipment, etc.). Our list of credentials is long and includes also a large number of major seafood companies based in the Nordics hereunder Mowi (Marine Harvest), Cermaq, Grieg Seafood, Bakkafrost, Norway Royal Salmon, Copeinca (Peruvian fishmeal company), EWOS and many more.

Carnegie was also advising Nordic Aquafarms in the successful NOK 100 million (~USD 12m) private placement of equity to fund the completion of the land-based facility of its subsidiary Fredrikstad Seafoods in Norway in December 2018. In the preparation and marketing of this transaction, we not only gained substantial insights in the financials related to the expansion plans for NAF in Maine, but also investors' view on the attractiveness of such investment relative to other projects.

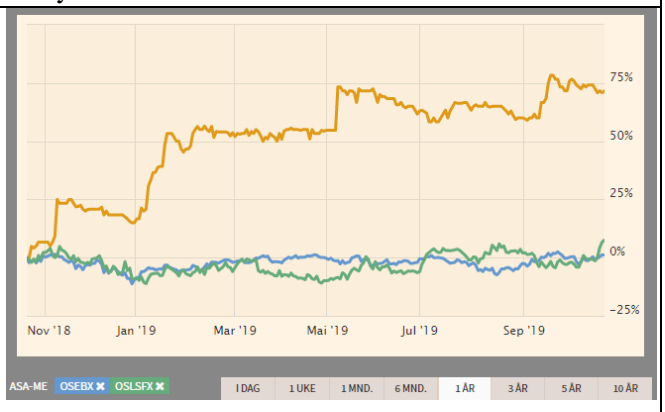
In recent years, on the back of raising salmon prices and increased profitability, salmon farming has outperformed other industries in the stock market and gained increased interest and attention within the financial industry and the investor community, both within equity and debt. Land-based salmon farming is benefitting from the strong sentiment for aquaculture related shares in general, but also driven by higher production cost in traditional ocean-based salmon farming, increased focus on sustainability with consumers and technological improvements related to land-based fish farming (RAS).

The graphs below illustrate the underlying price, cost and profitability for Atlantic salmon seen from a Norwegian perspective. Norway represents more than 50% of global production of Atlantic salmon, which in 2018 amounted to some 2.2m tonnes (gwe[1]), so production in Norway is key also when assessing the global salmon industry.

[1] Gutted Weight Equivalent (84% of live weight, 90% of whole fish equivalent)

Atlantic Salmon **Price, cost and profitability**	**Composition of production cost**
	
Source: Statistics Norway, Norwegian Directorate of Fisheries, Carnegie	

Furthermore, the company Atlantic Sapphire ("ASA") has paved the way for other land-based projects by raising substantial amounts in equity over the last years (some USD 265 million), listing the shares in 2018 and subsequently seeing a substantial increase in market valuation (currently some USD 800 million).

Share price development **Oslo Stock Exchange Benchmark Index (OSEBX) vs. the Seafood Index (OSLSFX) last 5 years**	**Atlantic Sapphire (ASA-ME) vs the Oslo Benchmark Index (OSEBX) and the Seafood Index (OSLSFX) last year**
	
Source: Oslo Stock Exchange	

Based on the above, we therefore see strong investor interest for aquaculture related investments.

Supportive arguments regarding the funding of NAF Maine

With the investment in Belfast, Maine, we believe that Nordic Aquafarms will position itself as the second largest land-based salmon farming company in the world, after Atlantic Sapphire. When it comes to in-

house know-how and engineering capabilities, NAF has a very capable team which was further strengthened after the additions from Inter Aqua Advance in 2018.

NAFs land-based facility in Denmark that produces Yellowtail Kingfish has been in operation for more than two years and has for the past year been harvesting and selling fish on a regular basis.

NAF completed the construction of the first module of its Norwegian land-based facility in Q1 2019, and the facility in Fredrikstad went into operation with the release of the first smolt in Q2. The operations have been performing according to plan since.

The US expansion will therefore benefit greatly from the experiences gained, both during the construction phase as well as operationally, from the plants in Denmark and Norway. Furthermore, the company can leverage its existing experience base among key employees who have a strong track-record in fish farming and facility design.

NAF expects positive cash flow from the Norwegian operations already from 2020/2021, and we expect that the capital markets will increase its confidence in land-based investments further when NAF can show further proof of concept.

Moreover, in discussions with investors, investments in land-based are more attractive near the end-market consumers, as it increases the relative competitive advantages. The US is of particular interest as the market is large, land-based supply is not subject to expensive air freight for Fresh salmon (cost ~US 1.50 kg), and the CO2 footprint is also substantially better. In sum, profitability and investor return is expected to be better in the US than for similar investments in Norway or other production regions which will have to rely on traditional freight pattern (air freight in particular).

Moreover, traditional ocean-based aquaculture is facing a number of challenges, not least in Canada, which should further benefit land-based projects in the US. We therefore expect investor interest for such projects to continue to be high and with NAF as one of the most attractive investment objects internationally in this segment.

The NAF Maine investment case and the contemplated transaction

The planned NAF plant in Belfast, Maine, is designed to produce approximately 30,000 tonnes of salmon. The total projected investment is expected be approximately USD 500 million. The build-up will most probably be split into 2 phases and we assume that the first phase will carry a somewhat larger share of the total investment, due to planning and infrastructure. Nevertheless, our calculations based on investments relative to prospective profitability are supportive for the case.

Production cost within land-based is expected to be in the USD 4.0 – 5.0 per kg range, and prices for salmon is expected to stay high due to limited production growth in traditional farming and continued demand growth. Land-based locally produced salmon is expected to have a premium pricing relative to the

traditionally produced salmon due to lower time to market and sustainability. According to the industry source UrnerBarry, the average salmon price in North East US was USD 8.6 per kg in 2018.

A salmon price assumption of ~USD 8.0 per kg (i.e. 7% lower than 2018 commodity price) yields an estimated payback of ~6 years for NAF Maine, while a price of USD 9 per kg gives a payback of ~4 years. We expect investors to find this attractive. Nordics Aquafarms' business model further contemplates new projects in other parts of the US and thereby adding scale and growth prospects to the overall project and further enhancing the attractiveness with investors.

The company is planning for a phased development of the project and the equity/debt ratio is expected to change with overall de-risking of the project. As the equity portion might be higher in the earlier stages, we expect a debt portion of USD 80-120 million in phase 1 as a realistic scenario. The company is targeting a longer-term equity/debt ratio of ca 50/50. In our view, such a capital structure will be a good fit with the market for Direct Lenders/Private Debt Funds. Direct lending is a form of financing where large specialized funds take the role as lender on a sole basis, or in a tight group, to either a project or a company. The risk appetite for such investors is higher than for traditional banks and the Direct Lending instrument offers more flexibility than in the High-Yield Bond market.

On the back of previous experience, we therefore believe that there will be a substantial number of lenders willing to consider this financing. The primary attraction from a financing perspective are limited market risk, strong owners, considerable asset value and positive Environmental, Social and Governance ("ESG") aspects.

Carnegie has a strong position in this market and has secured debt financing for several other projects with similar attributes as NAFs project in Maine. Provided that the company can demonstrate the operational, commercial and engineering feasibility of the project and a high probability of receiving the necessary permits, we are confident that NAF will be able to secure financing on satisfactory terms and conditions to cover the construction financing and other required capital for the project to reach commercial operation. Once these project details are addressed and confirmed, we would take the project to market and enter into discussions and clarifications with potential direct lenders with the aim to close a financing deal for the project shortly after.

Finally, NAF has already managed to build a strong shareholder base, including some of the strongest private investment companies/family offices in Norway, which is an important asset in any transaction. In combination with the secured debt commitments discussed above, we are also confident that the required equity for the project will fall into place in a subsequent transaction.

Risk factors

Financing of companies always entails risk. There is risk related to the development of the capital markets in general, risk related to changes in market prices and risk related to the biological performance of the fish. For Nordic Aquafarms, there are also risks related to land-based specific factors, not least related to more specific biological challenges in RAS. Such risk is expected to gradually decrease through a successful development of Nordic Aquafarms operations in Fredrikstad in Norway. The risk factors above are not

meant to represent an exhaustive list, but rather to illustrate some of the most important risk factors seen from the perspective of securing funds to NAF Maine.

Conclusion

Based on our analysis of the aquaculture industry along with the current strong investor sentiment for salmon farming in general and land-based salmon farming in particular, we are of the opinion that Nordic Aquafarms will be well positioned to secure the required funding through issuance of debt through Direct Lending in combination with a placement of new equity towards institutional investors in the Nordic- as well as in International markets.

Yours sincerely,

Carnegie AS

Frank Heimland

Head of seafood - Investment Banking

ATTACHMENT E

Draft Hazardous Materials Spill Prevention Control and Countermeasures (SPCC) Plan

Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008

DRAFT
HAZARDOUS MATTER SPILL PREVENTION, CONTROL, AND CLEAN-UP (SPCC) PLAN
NORDIC AQUAFARMS, INC.
BELFAST, MAINE

Prepared for:

Nordic Aquafarms, Inc.
165 High Street
Belfast, Maine

Prepared by:

Ransom Consulting, Inc.
400 Commercial Street
Portland, Maine 04101
207.772.2891

Project 171.05027.008
October 31, 2019

TABLE OF CONTENTS

MANAGEMENT APPROVAL

Nordic Aquafarms is committed to the prevention of discharges of hazardous materials to navigable waters or the environment; and will maintain the standards for spill prevention control and clean-up through periodic review, updating, and implementation of this Spill Prevention Control and Clean-up (SPCC) Plan. Nordic Aquafarms will provide the manpower, equipment and materials required to expeditiously prevent, control, and clean up hazardous materials that may be harmful to human health or the environment.

Authorized Facility Representative: _____

Signature: _____

Title: _____ Date: _____

MANAGEMENT REVIEW

A review and evaluation of this SPCC Plan will be conducted periodically, and Nordic Aquafarms will amend the SPCC Plan as necessary to include more effective prevention and control technologies, if those technologies will significantly reduce the likelihood of a spill event from the facility.

This SPCC Plan will also be amended as necessary after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of hazardous materials.

Any technical amendment to the SPCC Plan shall be certified by a Professional Engineer. Revisions which are incorporated into the body of this SPCC Plan shall be indicated on the Plan Review and Certification Log included in Appendix A, along with the date, the reason for the change, the findings and pages requiring revision, and the reviewer's name and signature.

Review Dates	Signature	Amendment Required? (If "yes", see Appendix A)

1.0 INTRODUCTION AND SITE DESCRIPTION

1.1 Purpose

The purpose of this Hazardous Matter SPCC plan is to outline procedures that may prevent spills from occurring, and to perform safe, efficient and timely response in the event of a spill or leak (both referred to as "spills" herein). A hazardous matter SPCC plan must contain the information listed in Maine Hazardous Matter Law, 38 MRSA §1318-C.

"Hazardous matter" refers to substances that have been identified by the Maine Department of Environmental Protection (MEDEP) as posing a danger to people or the environment when spilled/released. Over 400 substances have been identified as hazardous matter by the MEDEP under Chapter 800 of the MEDEP rules.

1.2 General Site Description

Nordic Aquafarms is currently developing a fish processing facility on the northwest side of Route 1 (Northport Avenue) in Belfast, Maine, adjacent to the Belfast Reservoir Number One. Please refer to the appended Figure 1 - Site Location Map, to view the general location of the Site on a 7.5-minute topographic quadrangle. This facility will rear Atlantic salmon from the egg life stage to market-size fish weighing 10-12 pounds. At full production, the facility will be able to produce 66 million pounds of fish per year. ***It should be noted that at the time of the issuance of this DRAFT SPCC Plan, no construction has occurred on-site; as such, the descriptions, procedures, and figures contained herein are considered DRAFT/FOR PERMITTING and will be revised upon construction completion***.

The salmon growing operation is done indoors and therefore requires a fair number of buildings to perform that function. Buildings proposed on-site consist of: Building 1 – Consists of 3 grow modules constructed in succession; Building 2 – Consists of 3 grow modules constructed in succession; Building 3 – Smolt Building; Building 4 – Fish Processing Facility; Building 5 – Central Utility Plan; Building 6 – Oxygen generation; Building 7 – Office/Maintenance Building; Building 8 – Water/Wastewater Treatment Building; and Building 9 – Gate House. The buildings are arranged such that operations central to the needs of the fish growing process will be performed in the middle of the complex, while the larger fish grow module buildings are on the exterior. Water and wastewater treatment will be closer to Route 1 to facilitate intake and discharge of seawater. The building complex will be supported by paved access drives surrounding the facility and between buildings. Efforts were made to group buildings adjacent to one another to minimize the amount of pavement. Please refer to the appended Figure 2 – Site Plan for a view of the proposed Site buildings and infrastructure; and Figure 3 – Tank and Process Piping Plan for a view of interior hazardous material infrastructure.

Currently (i.e. UNDEVELOPED), the site has primarily coniferous vegetation cover within isolated areas of deciduous vegetation and bedrock outcrops. The site slopes gently to the South and Southwest into the Little River/Reservoir Number One. The terrain steepens within the 250-foot Resource Protection District with fingers of notable rivulets, channels and ravines out letting to the reservoir. The reservoir is controlled by a dam located just west of Route 1 and outlets into Belfast Bay.

A 50-foot building setback exists around the perimeter of the property, 40 feet of which will remain a naturally vegetated buffer yard. A 250-foot wide buffer area between the southern property line and Belfast Reservoir Number One will be maintained by the City of Belfast.

1.3 Hazardous Matter and Substances

As part of the fish processing activities, Nordic Aquafarms will maintain many different chemicals and hazardous materials on-Site, including cleaners/detergents, disinfectants/sanitizers, therapeutants, and chemicals for water and wastewater treatment. See Appendix B for a full list of chemicals which will be stored, maintained, and used on-Site, as well as the Safety Data Sheet (SDS) for each chemical. Appendix B also contains information on the approximate usage rates and storage volumes which are anticipated by Nordic Aquafarms. It should be noted that not all of the chemicals proposed for use by Nordic Aquafarms are listed on the federal list of 400 hazardous substances (40 CFR 302.4); chemicals which are not as "hazardous substances" by the MEDEP and Environmental Protection Agency will be stored, maintained, and used in accordance with best management practices and the procedures outlined in this plan.

The following table presents a list of chemicals which are proposed for use and storage onsite, their anticipated storage quantities, and the associated federal "Reportable Quantity" for each.

Chemical Name	**Hazardous Material Component**	**Estimated Quantity Stored On-Site**	**Reportable Quantity**
Aqualife® Multipurpose Cleaner	Sodium Hydroxide (1-5%)	385 gallons	1,000 lbs (116 gallons)
Gil Save®	Sodium Hydroxide (7- 9%), Sodium Hypochlorite (3-4%)	110 gallons	100 lbs (11 gallons)
Gil Super CIP®	Sodium Hydroxide (49%)	495 gallons	1,000 lbs (79 gallons)
Bleach	Sodium hypochlorite (8%)	530 gallons	100 lbs (11 gallons)
Zep FS Formula 12167® Chlorinated Disinfectant Germicide	Sodium Hypochlorite (5-10%), Sodium Hydroxide (1-3%)	330 gallons	100 lbs (12 gallons)
Parasite-S, Formalin-F, and Formacide-B	Formaldehyde (37%)	110 gallons	100 lbs (9 gallons)
Formic Acid	Formic Acid (85%)	1585 gallons	5,000 lbs (491 gallons)

Under 38 MRSA §1318-B, any a hazardous matter spill which exceeds the reportable quantity for that particular hazardous matter must be reported to the State Police and MEDEP (i.e. if there is a release of bleach which exceeds 11 gallons, it must be reported).

1.4 Containment and Diversionary Structures

While it is the Facility's goal not to have any discharges, should a discharge occur, appropriate containment and/or diversionary structures or equipment will be provided at the Facility to prevent a discharge. Where secondary containment is utilized, the entire system, including walls and floor, should be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before cleanup occurs.

The exact configuration and location of chemical storage tanks, containment structures, piping, fill ports, and diversionary structures has not yet been determined. This DRAFT SPCC plan will be updated once the facility has been constructed to include descriptions and details for containment and diversionary structures.

1.5 Discharge Detection Devices

As stated previously, the exact configuration and location of chemical storage tanks and associated infrastructure has not yet been determined. This DRAFT SPCC plan will be updated once the facility has been constructed to include descriptions and details for discharge detection devices/alarms.

2.0 POTENTIAL RECEPTORS AND MIGRATION POTENTIAL

2.1 Potential Receptors

Atlantic Resource Consultants prepared a Soil Erosion and Sedimentation Control Plan, in which, they described the Critical Areas of the Site as follows:

> *The critical areas of the site include the freshwater wetland resources downstream of the construction work area. There are also a number of streams on the project site that fall under the Natural Resource Protection Act jurisdiction. These streams are intermittent and have been designated with the prefix "S" as shown on [Figure 2A of this DRAFT SPCC Plan]. Non-jurisdictional drainages are designated with the prefix "D". Three streams extend off site and drain into the adjacent Reservoir One.*
>
> *Critical resources downstream from the site include Belfast Reservoir Number One and Penobscot Bay.*

2.2 Release Potential

The exact configuration and location of chemical storage tanks and associated infrastructure has not yet been determined. This DRAFT SPCC plan will be updated once the facility has been constructed.

However, as is typical for aboveground storage tanks (ASTs), there is potential for chemical release associated with the following (it should be noted that these are examples, and are not intended to constitute an inclusive list): leaking/improper connections between a chemical delivery truck and the AST fill ports; AST overfills; leaks around fittings/bends in the product piping; catastrophic tank failure (unlikely); leaking/improper use and transport of chemicals between AST and application point; and user/employee error.

2.3 Release Mitigation and Protection

The potential releases will be mitigated through the use and application of containment and diversionary structures, discharge detection measures, and proper work practices. In general, releases which occur inside buildings will be contained within secondary containment structures, the building walls, and interior drainage systems. Spills which occur outside have the potential to travel overland to stormwater diversion and collection systems throughout the Site. As stated previously, once final construction has occurred, Nordic Aquafarms will evaluate specific release pathways which may be present on-Site (both interior and exterior) and will develop mitigation methods, as appropriate.

2.4 Containment, Treatment, and Removal Plans

This Section will be updated as necessary as part of facility startup.

3.0 PROCEDURES

3.1 Spill Prevention Measures

Facility personnel will be trained to implement spill prevention practices. Site personnel shall use common sense and rely on spill prevention practices at all times to minimize the potential for a release of hazardous matter. For example, the following "common sense" practices are recommended:

1. Spill prevention during chemical deliveries (offloading) will be the primary responsibility of the chemical supplier until the product is safely in the ASTs. However, Facility personnel shall ensure the supplier is familiar with Facility procedures, and shall oversee delivery operations;

2. Hazardous material infrastructure (ASTs, piping, etc.) shall be protected from damage by moving equipment via bollards, proper storage, and best management practices; and

3. Loading and unloading of chemicals shall be attended at all times.

Specific spill prevention measures for Facility operations will be determined once the facility is constructed and operations have begun. This DRAFT SPCC Plan will be updated at that time.

3.2 Inspection, Maintenance, and Testing Procedures

Nordic Aquafarms personnel shall perform testing, inspection, and maintenance of all chemical tanks, containers, and associated infrastructure (piping, containment, etc.) to keep it performing in an efficient and environmentally sound manner. The exact type and extent of testing and inspections will be determined upon startup of the facility; however, the following best management practices will be performed at a minimum.

Nordic Aquafarms personnel shall periodically observe the ASTs during operating hours. The ASTs and associated piping shall be inspected monthly, and the results shall be recorded on the Monthly AST Inspection Report Form, as included in Appendix C. The results of these inspections will also be maintained in Appendix C. Spill response kits kept onsite shall also be checked during the monthly AST inspection, and restocked as necessary.

The monthly inspection reports shall be kept for at least three years in a file maintained by the Facility Manager. Inspections of the tanks include observations of the exterior of the tank for signs of deterioration or spills (leaks), observations of the tank foundation and supports for signs of instability, and observations of the vent, fill and discharge pipes for signs of poor connection, that could cause a spill. In addition to these monthly inspections, the facility will periodically verify the integrity of each tank in accordance with an industry standard inspection procedure. The frequency of such testing will be as specified by the selected industry standard procedure.

As part of the monthly inspections, Nordic Aquafarms personnel will record the volume in the tanks via the tank level gauges and will reconcile this reading with the volume being delivered to the Facility, and the amount used in onsite operations.

All tank and piping problems shall be immediately reported to the Facility Manager. Visible spills (leaks) shall be repaired or replaced as soon as possible to prevent the potential for a major spill from the source. This is especially important for sources located outside containment structures.

3.3 Training

Nordic Aquafarms shall provide annual SPCC spill training for personnel involved with handling hazardous materials. The exact agenda for this training shall be determined upon system startup, but may include the following training topics:

1. Rules and regulations pertaining to the use and storage of hazardous materials;
2. A detailed review of this SPCC plan;
3. Inspection, operation, maintenance, and testing procedures;
4. Spill response and cleanup;
5. Spill notification and record keeping;
6. Spill prevention practices;
7. A review of any spill events which have occurred since the last training date and the effectiveness of the response; and
8. A discussion of any new technologies which may be useful in preventing or detecting spills.

The annual SPCC training shall be documented to include the instructor's name, course outline, date and duration of training, attendant's names and signatures, and corrective action list for areas in need of improvement, if any. This information shall be filed and maintained for at least 3 years. A Certificate of Training shall be presented to each employee that has completed the training.

4.0 EMERGENCY RESPONSE AND NOTIFICATION

Emergency response actions are dependent on exact locations and configurations of hazardous material storage; as such, these procedures can only be finalized once construction is complete and operations have been started. This DRAFT SPCC Plan will be revised to reflect emergency response procedures at that time; however, standard/best management practices such as those outlined below, will be followed.

4.1 Qualifications of Employee Responders

A list of on-Site emergency coordinators, contact information, and qualifications will be provided in the updated SPCC Plan.

4.2 Emergency Response

Depending on the volume and characteristics of the material released, a spill response is either classified as a "Minor Spill Response" or "Major Spill Response".

4.2.1 Minor Spill Response

A "Minor Spill Response" is defined as one that poses no significant harm to human health or the environment. These spills generally will involve less than 5 gallons of hazardous material and can be cleaned up by Site personnel. Other characteristics of a minor spill include the following: the spilled material is easily stopped or controlled at the time of the spill; the spill is localized; the spilled material is not likely to reach surface water or groundwater; there is little danger to human health; and there is little danger of fire or explosion. In the event of a minor spill the following guidelines shall apply:

1. Stop the source if the spill is ongoing.
2. Immediately notify the Facility Manager.
3. Under the direction of a senior on-site person, contain and clean the spill with spill response materials and equipment.
4. Place spill debris in properly labeled waste containers.
5. Complete the Spill Notification Form (Appendix D).

4.2.2 Minor Spill Cleanup Procedures

All containment and cleanup operations will be in accordance with safe work practices and under direction of the Facility Manager. Facility personnel shall utilize personal protective clothing and equipment. Cleanup procedures should only be conducted once the spill has been contained and the leaks have been repaired. Cleanup measures should include the following:

1. Cleanup crews may use appropriate sorbent materials. On impermeable surfaces (pavement, concrete), this will include placing sorbent materials over the spill and preventing overland migration. On permeable surfaces (gravel, grass), this will include removing the affected material around the spill site until all visible traces are removed.

2. All spill and cleanup materials, including protective clothing, if contaminated, will be placed in impervious bags, buckets or drums.

3. Drums/buckets/containers should be filled with sufficient absorbent material to eliminate liquids and free product. To keep drums to a management weight, they will be filled no more than half full.

4. Drums/buckets/containers will be covered with the appropriate lid and labeled for contents, hazard identification, and date. These materials shall be removed from Site by a licensed waste transporter.

4.2.3 Major Spill Response

A "Major Spill Response" is defined as one involving a spill that cannot be safely controlled or cleaned up. Characteristics include the following: the spill is large enough to spread beyond the immediate spill area; the spilled material enters surface water or groundwater (regardless of spill size); the spill requires special training and equipment to cleanup; the spilled material is dangerous to human health; and/or there is a danger of fire or explosion. In the event of a spill emergency, the following guidelines shall apply:

1. Stop the source if the spill is ongoing (only if safe to do so).

2. Immediately notify the Facility Manager.

3. Immediately evacuate the spill site and move a safe distance away from the spill.

4. The Facility Manager shall call for medical assistance if necessary (no worker shall engage in rescue operations unless they have been properly trained and equipped).

5. The Facility Manager shall call the appropriate response personnel. (To be determined).

6. The Facility Manager shall call the Maine Department of Environmental Protection (1-800-482-0777). If the spill reaches groundwater and/or surface water (excluding stormwater detention systems), the Facility Manager shall also contact the National Response Center (1-800-424-8802).

7. Complete a Spill Notification Form (located in Appendix D). Document the telephone calls and notifications on this form.

4.2.4 Major Spill Cleanup Procedures

Facility personnel will NOT conduct cleanup operations in the event of a major spill. Facility employees should immediately contact emergency response services (Company and Contact Information to be determined).

Descriptions, capabilities, and locations of emergency response equipment shall be determined upon startup of operations; this DRAFT SPCC Plan will be updated at that time.

4.3 Evacuation Procedures

Excavation procedures have yet to be determined; these will be outlined in the updated SPCC Plan, along with contact information and routes to the nearest hospital.

4.4 Notification

After making the appropriate phone calls and the spill is contained, a Spill Notification Form, included in Appendix D, shall be completed and submitted to a Facilities Manager. The Spill Notification Form includes a checklist to document the proper notification of state and federal agencies. The form shall be filed and maintained as long as Nordic Aquafarms owns and/or operates this Facility.

Under 38 MRSA §1318-B, any a hazardous matter spill which exceeds the reportable quantity for that particular hazardous matter must be reported to the State Police and MEDEP.

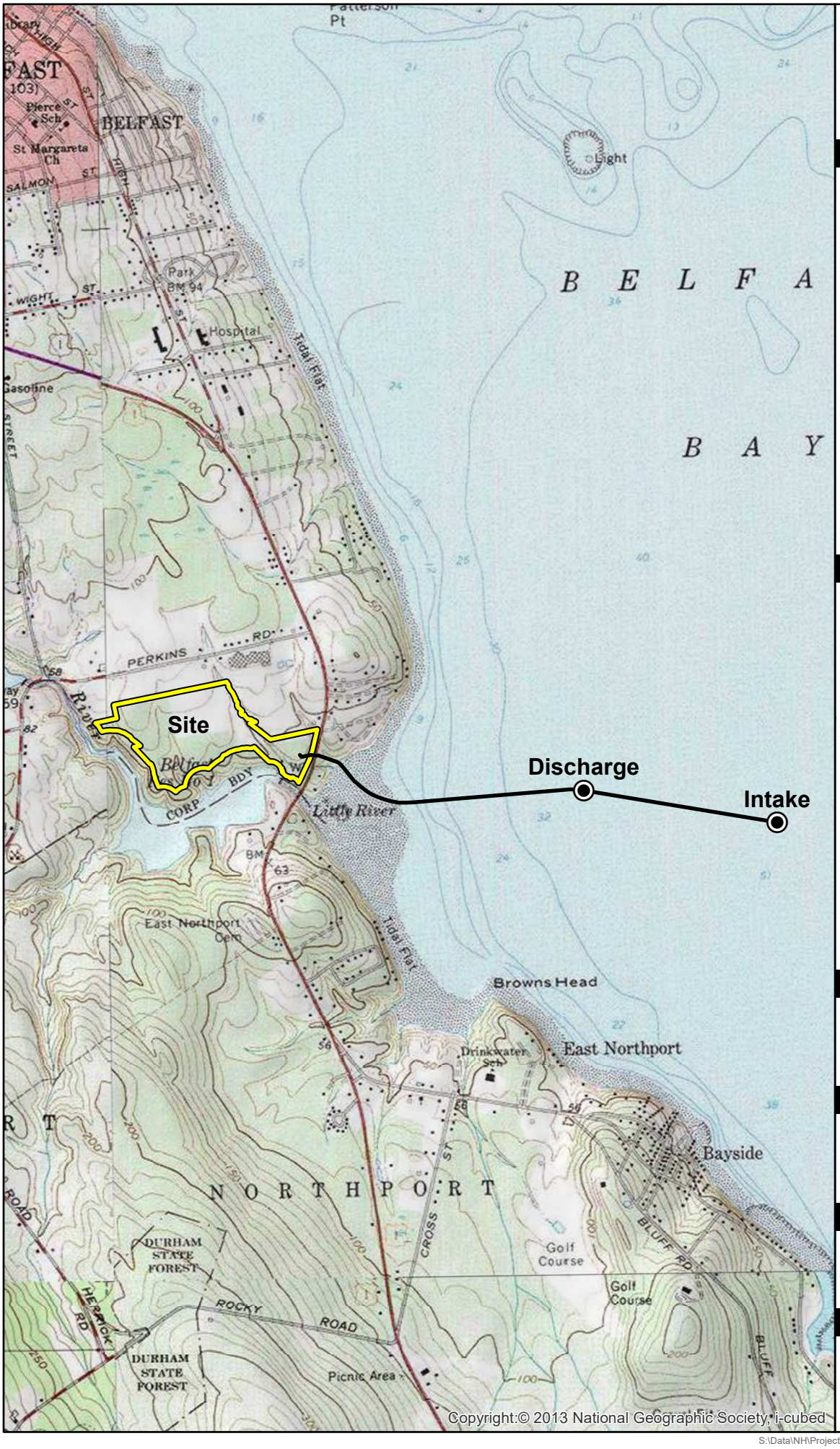
This section will be updated with Facility-specific contact information prior to start-up of operations.

4.5 Written Reports

This section will be updated.

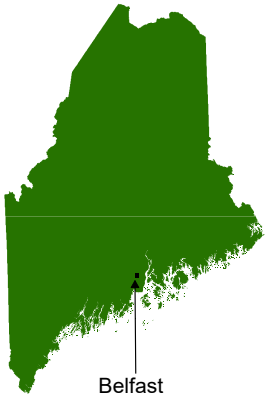
4.6 Record Keeping

This section will be updated.



RANSOM
Consulting Engineers and Scientists

Regional Locator Map



Legend

Site Boundary

Ocean Pipelines

Notes

1. Data Source: USGS National Map Seamless Server, 24K
2. USGS Quad: 7.5 Minute Searsport & Belfast 1976 (revised 1979)
3. Latitude: 44° 23' 43" N
   Longitude: 68° 59' 39" W
   UTM Northing: 4915777 mN
   UTM Easting: 500444 mE

Scale and Orientation

0 1,000 2,000

1 inch = 2,000 feet

Prepared For

Nordic Aquafarms, Inc.
159 High Street
Belfast, Maine

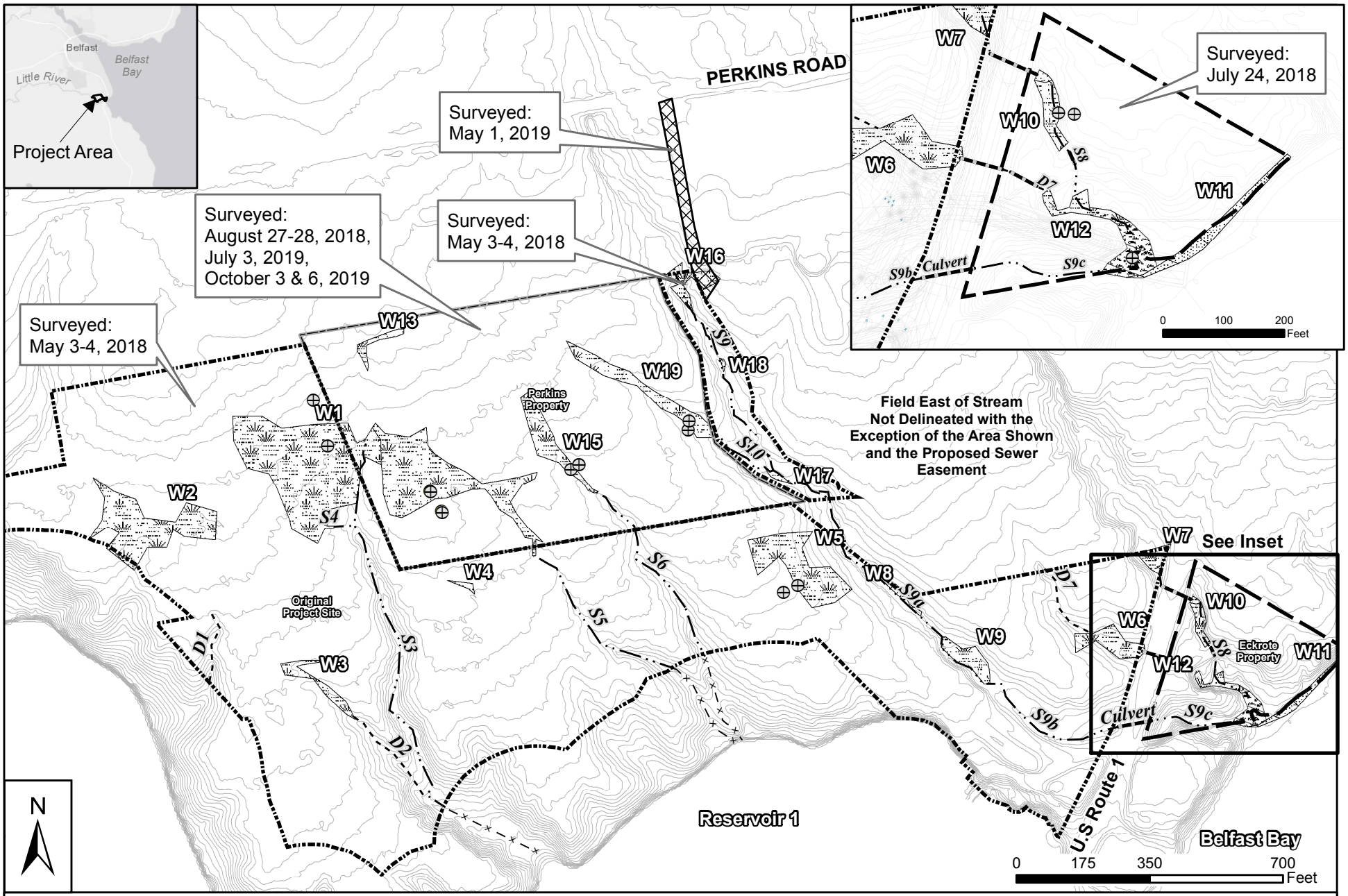
Site Address

Proposed Aquaculture Facility
285 Northport Avenue
Belfast, Maine

171.05027 | Apr 2019

Proposed Site Location Map

S:\Data\NH\Project\171_05027\Maps\location_map.mxd



Belfast Aquaculture Project
Revised Wetland and Stream Survey
Date: November 4, 2019

Wetland Survey Date
- May 3-4, 2018
- July 24. 2018
- August 27-28, 2018 , July 3, 2019 and October 3 and 6, 2019
- May 1, 2019

- Existing Culvert
- Drainage
- Intermittent Stream
- Stream Not Field Delineated

- Palustrine Wetlands
- Salt Marsh
- Cobble Beach
- 2 Foot Contours
- Army Corps Data Plot

NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS

APPENDIX A

Plan Review and Certification Log

Hazardous Matter Spill Prevention, Control, and Clean-Up (SPCC) Plan
Nordic Aquafarms
Belfast, Maine

PLAN REVIEW AND CERTIFICATION LOG

Date	Reason For Review	Findings/Revised Pages	Reviewer's Name and Title	Signature/ Registration No.

At a minimum, this SPCC Plan shall be reviewed and evaluated by the Owner as necessary, and in the event of the following:

- There is a change in facility design, construction, operation, or maintenance that significantly affects the potential for release;
- The SPCC Plan fails in an emergency;
- The local, state, or federal regulations change concerning SPCC reporting; or
- More effective technology becomes available.

If no amendments are required, by signature above, the Owner certifies to the following, "I have completed review and evaluation of the Facility SPCC Plan on the date noted and will not amend the SPCC Plan as a result." If amendments are required, the revised SPCC Plan shall be implemented within 6 months of any such change.

APPENDIX B

List of Chemicals and Safety Data Sheets

Hazardous Matter Spill Prevention, Control, and Clean-Up (SPCC) Plan
Nordic Aquafarms
Belfast, Maine

Chemicals for the Fish Farm

Note: Annual usage estimates represent approximate quantity required given a product is the only one used for this application. The quantities needed will be dependent on the site-specific conditions experienced which are difficult to establish prior to operations and are indicated as estimates only. Likely a fraction of the estimated annual use of each of these products will be used. All products listed will be used according to label.

Cleaners

Detergents

Aqualife® Multipurpose Cleaner. A biodegradable, nonhazardous cleaner that is designed specifically for use in fish hatcheries, aquaculture facilities, fish & food processing plants, & agricultural farms. Active ingredients: sodium hydroxide (1-5%), the product is phosphate free, contains no volatile organic compounds and is NSF certified for use in food processing facilities. Used according to the label at dilutions of 1:20. Approximate annual use: 2232 gallons/year (8449 l/year).

- Storage: 385 gallons (appox. 9 week supply)
    - 7 x 55-gallon drums

Gil Save®. High-foaming chlorinated, alkaline, liquid detergent, Gil Save is designed for foam and high pressure spray cleaning of meat and poultry plants, breweries, dairies and canneries. It is a complete product containing alkalis, water conditioners, chlorine and high-foaming wetting agents. Gil Save is an effective cleaner of food processing equipment by removing fatty and protein soils, pectin, mold, yeast and organic greases. Active ingredients: sodium hydroxide (7-9%), sodium hypochlorite (3-4%). Use according to label at concentrations of 0.2-3% (¼-4 oz/gal). Approximate annual use: 678 gallons/year (2567 l/year).

- Storage: 110 gallons (appox. 8 week supply)
    - 2 x 55-gallon drums

Clean in Place (CIP)

Gil Super CIP®. A heavy-duty, chelated-liquid caustic cleaner for use in CIP, boil-out, soak, spray clean and atomization cleaning systems, Gil Super CIP is formulated to remove protein, fatty and carbonized soils typically found in dairy and food processing. Active ingredients: sodium hydroxide (49%). Used according to label at 0.1-3% (1/8-4 oz/gal). Approx. annual use: 5840 gallons/year (22107 l/year).

- Storage: 495 gallons (appox. 9 week supply)
    - 9 x 55-gallon drums
    - 2 x 265-gallon IBC totes

- Specialized storage tank

Gil Hydrox®. A concentrated organic, liquid acid cleaner, Gil Hydrox rapidly removes milk/beer stone, alkaline/hard water film and stains/protein build-up from dairy and food processing equipment. It is specially formulated for use in CIP, spray and acid rinse operations. Active ingredients: glycolic acid (29-31%). Used according to label at 0.3-1.5% (½-2 oz/gal). Approx. annual use: 5840 gallons/year (22107 l/year).

- Storage: 495 gallons (appox. 9 week supply)
  - 9 x 55-gallon drums
  - 2 x 265-gallon IBC totes
  - Specialized storage tank

Two Clean in Places (CIP), a caustic based, and an acid based, are used in interchangeably to prevent the accumulation of residue. The volume of 5,840 reflects the conservatively estimated sum of usage for these two products each year. The storage volume reflects the supply of the respective product.

Disinfectants/Sanitizers

Bleach. Active ingredient: sodium hypochlorite (8%) in concentrated form. Typically used at 100-1000 ppm for general cleaning/disinfection. Approximate annual use: 1500 gallons/year (5700 l/year).

- 530 gallons (appox. 18 week supply)
  - 2 x 1000 L IBC total
  - 9 x 55-gallon drums
  - Specialized storage tank

Ozone. Ozone can be dissolved into water to provide an aqueous ozone solution that is stable, safe, easy to control, leaves no residue and has been granted GRAS approval by both the USDA and FDA for direct contact with food. This water containing ozone can replace chlorine as an antimicrobial agent or be used to supplement existing water rinses and achieve improved antimicrobial intervention. This is now a common application to sanitize fillet machines, cutting tables, knives, and all equipment that may be used in the seafood processing areas. Approximate annual use: TBD. Concentration in discharge = 0 ppm

- Ozone is not stored on site. Ozone is continuously generated and degraded to oxygen through its application as a water treatment component. This is common practice in commercial aquaculture.

Virkon® Aquatic. A powerful cleaning and disinfecting solution with efficacy against fish viruses, bacteria, fungi, and molds. Virkon® Aquatic is EPA registered (except in California where registration is pending) for the disinfection of environmental surfaces associated with aquaculture**.** Active ingredient: Potassium monopersulfate (21.4%). Used in accordance with label as a general cleaner and in footbaths. Working solution strengths normally range from 0.5% - 2.0%. Approx. annual use: 1100 lbs/year (500 kg/year).

- 200 lbs (appox. 9 week supply)
    - 20 x 10 lb tubs

Zep FS Formula 12167® Chlorinated Disinfectant and Germicide. A liquid chlorine sanitizer and deodorant for use in all types of food-handling establishments. Authorized as no rinse sanitizer for equipment. Provides deodorizing activity by destroying bacteria which generate many disagreeable odors. Can also be used to sanitize commercial laundry. Active ingredients: Sodium hypochlorite (5-10%) and sodium hydroxide (1-3%). Used according to label, effective at concentrations as low as 0.3% (1 oz/ 2 gallons). USDA applicable and EPA and Maine registered. Approx. annual use: 1980 gallons/year (7495 l/year).

- 330 gallons (appox. 9 week supply)
    - 6 x 55-gallon drums

Therapeutants

Compounds Potentially Used:

Note: the quantities needed will be dependent on the site-specific conditions experienced which are difficult to establish prior to operations and so are indicated as estimates only. All products listed will be used according to label use or a licensed veterinarian's prescription.

Parasite-S, Formalin-F, and Formacide-B. (Formalin). Active ingredient 37% formaldehyde. Used periodically according to the label if needed to alleviate fish health issues due to *saprolegniasis*, external protozoa and monogenetic trematodes. Typical dose rates from 25 ppm to 1,000 ppm. Approximate annual use: 925 gallons/year (3500 l/year).

- 110 gallons (appox. 6 week supply)
    - 2 x 55-gallon drums

Finquel® or Tricane-S. (Tricaine methanesulfonate). Used periodically in accordance with the label to reduce stress on the fish when handling small numbers for examination. Typical dose rates of 15-330 mg/L. Approximate annual use: 1.1 lbs/year (500 g/year).

- 2.2 pounds (appox. 2 year supply)

    - 1 x 1-kilogram container

Halamid® Aqua. (Chloramine-T). Active ingredients N-chloro, p-toluenesulfonamide and sodium salt trihydrate. Used periodically according to the label if needed to alleviate fish health issues due to bacterial gill disease. Typical dose range 12-20 ppm. Approximate annual use: 1100 lbs/year (500 kg/year).

- 220 pounds (appox. 10 week supply)
    - 4 x 55-pound drums

Ovadine® (PVP Iodine). A buffered 1% Iodine solution (Iodophor) specifically formulated for use in disinfecting fish eggs. It contains a 10% Povidone-Iodine (PVP Iodine) complex, which provides 1% available iodine. Used according to the label at dose rates of 50 -100 ppm as available iodine solution. Estimated usage: 160 gallons/year (600 l/year).

- 55 gallons (appox. 18 week supply)
    - 1 x 55-pound drums

<u>Compounds Rarely Used Only in Emergency Situations:</u>

The following agents will not be stored on site unless prescribed by a veterinarian

Praziquantel. Considered as 100% active. Can be used if fish are suffering from trematode/cestode infections. Typical dose ranges from 5-200 ppm depending on length of standing bath treatment. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

Potassium permanganate. Considered as 97% active. Can be used if fish are suffering from certain parasites and fungal infections in younger fish life-stages. Typical dose range 1.5-2.5 ppm. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

Terramycin® 200. (oxytetracycline dehydrate, 44% active): Can be used as an in-feed treatment (maximum of 0.08 g active oxytetracycline/kg fish/day) if fish are suffering from certain bacterial infections. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

Aquaflor®. (florfenicol; 50% active). Can be used as an in-feed treatment (maximum of 15 mg/kg fish/day) if fish are suffering from certain bacterial infections. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

Romet® 30/Romet® TC. (sulfadimethoxine/ormetoprim, 30% active or 20% active, respectively). Can be used as an in-feed treatment (maximum of 50 mg/kg fish/day) if fish are suffering from certain bacterial infections. Used as needed/intermittent or emergency use only, according to label use or as prescribed by a licensed veterinarian. Approx. annual use: 0 lbs/year (0 kg/year).

Waste Water Treatment

Formic Acid (85%). Used for pH correction of fish processing water prior to disinfection with sodium hypochlorite. Approx. annual use: 18200 gallons/year (69000 l/year).

- 1585 gallons (appox. 4 week supply)
    - 6 x 1000-liter IBC containers
    - Specialized storage tanks

Bleach. Active ingredient: sodium hypochlorite (15%). Used to disinfect water used in fish processing. Applied at concentration of 50 mg/l. Estimated discharge concentration: 0.4 mg/l. Approx. annual use: 14800 gallons/year (56000 l/year).

- 528 gallons (appox. 2 week supply)
    - 2 x 1000-liter IBC containers
    - Specialized storage tanks

MicroC® 2000. (1.1 million mg/l COD). A non-hazardous, green chemical developed specifically for use as an electron donor / carbon source for wastewater denitrification applications. It is used as supplemental carbon source in wastewater treatment plants to stimulate denitrification processes. Approx. annual use: 1.0 million gallons/year (3.8 million l/year).

- 40,000 gallons (appox. 2 week supply)
    - 4 x 10,000-gallon tanks

APPENDIX C

Monthly AST Inspection Report Form and Inspection Records

Hazardous Matter Spill Prevention, Control, and Clean-Up (SPCC) Plan
Nordic Aquafarms
Belfast, Maine

SUGGESTED MONTHLY ABOVEGROUND STORAGE TANK INSPECTION CHECKLIST

This inspection form is intended to assist the owners/operators of aboveground storage tank facilities on what items to inspect and conditions to look for when performing monthly inspections. Because each aboveground storage tank facility is different, some of the elements contained on the form, below, may not apply; in these cases, the facility owner should enter "N/A" in the comment section of the form.

Item	Item Observed?		Comments	Proposed Corrective Action
Leaks/Staining Observed (Tanks)	Yes ☐	No ☐		
Leaks/Staining Observed (Secondary Containment Structure)	Yes ☐	No ☐		
Leaks/Staining Observed (Aboveground Piping Inside Building Walls)	Yes ☐	No ☐		
Leaks/Staining Observed (Aboveground Piping Outside Building Walls)	Yes ☐	No ☐		
Leaks/Staining Observed (Fill Lines and Ports)	Yes ☐	No ☐		
Leaks/Staining Observed (Ground Surface around Tanks/Piping)	Yes ☐	No ☐		
Is product present in secondary containment structure?	Yes ☐	No ☐		
Are all drains, ports and valves closed and secured in tank area?	Yes ☐	No ☐		
Any evidence of tampering?	Yes ☐	No ☐		
Odor noted?	Yes ☐	No ☐		
Vent lines clear?	Yes ☐	No ☐		
High level alarm intact?	Yes ☐	No ☐		
Overfill alarm intact?	Yes ☐	No ☐		
Spill kits available and intact?	Yes ☐	No ☐		
Leak detection monitoring intact?	Yes ☐	No ☐		
Fire suppresion system intact?	Yes ☐	No ☐		
Other conditions?	Yes ☐	No ☐		
Tank level guage consistant with previous reading/oil deliveries/vehicle fueling?	Yes ☐	No ☐		

Signature **Date**

APPENDIX D

Spill Notification Form and Spill Records

Hazardous Matter Spill Prevention, Control, and Clean-Up (SPCC) Plan
Nordic Aquafarms
Belfast, Maine

SPILL NOTIFICATION FORM

Part A: Basic Spill Data	
Type of Spilled Substance:	**Notification Person:**
Quantity Released:	**Spill Date and Time:**
Location of Spill:	**Discovery Date and Time:**
	Spill Duration:
Weather Conditions:	**Release To**: ☐air ☐ pavement/concrete ☐ soil/gravel/grass ☐ vicinity of onsite well ☐ secondary containment ☐other_____
Describe Incident:	
Cleanup Activities Conducted by Employee:	**Facility Name & Location:**
Owner / Company Name:	**Telephone:**
If injuries occurred: **Name, Address, Phone of Injured individual:** **Nature of Injury:** **Insurance Information:**	

Part B: Notification Checklist		
	Notification Date and Time	**Name of Person that Received Call**
Release of Petroleum Product (Any Amount):		
Nordic Aquafarms		
Maine Department of Environmental Protection 1-800-482-0777		
Release Reaches Groundwater or Surface Water:		
National Response Center 1-800-424-8802		

This form shall be filed by the Facility and maintained as long as Nordic Aquafarms owns and/or operates the facility.

ATTACHMENT F

Responses to Geology Technical Review Memorandum dated September 17, 2019

Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008

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Memo

Date:	November 4, 2019
To:	Beth Callahan, Project Manager, Maine Department of Environmental Protection John Hopeck, Ph.D., Division of Environmental Assessment, Maine Department of Environmental Protection
From:	Elizabeth M. Ransom, P.G. Ransom Consulting, Inc.
Subject:	Nordic Aquafarms, Inc., Land-based Aquaculture Facility, Belfast, Maine L-28319-26-A-N, Review Comments
Project No.:	171.05027

This memo provides responses to the Technical Review Memorandum from John Hopeck to Beth Callahan dated September 17, 2019. For clarity, the entire comment from the technical memorandum has been copied below and italicized. Responses are in regular text, and on the attached plans and figures as referenced below.

1. Monitoring Program

a. The applicant proposes in the water monitoring plan to download data on water level and conductivity quarterly, except following significant changes in the facility, "such as the start of Phase 1 and Phase 2 operations" in which case the data will be downloaded monthly. This frequency may not be sufficient to assess and allow responses to changes in water level or quantity, particularly for conductivity, and if the applicant intends to maintain relatively consistent fresh water quality. Many operators of large groundwater withdrawals in the state assess water level and water quality in near real-time. Reporting of these data to the Department should occur no less often than monthly during initial operation of the facility and after significant changes in water usage, although there should be a provision for more frequent reporting in the event that monitoring results suggest possible impacts on surface waters or offsite water supplies, or drawdowns significantly exceed those predicted by the model.

It is important to consider the planned schedule of events that is anticipated to occur prior to initiation of freshwater withdrawals. This schedule includes approximately two years of site work and construction, during which monitoring would be conducted. Additionally, following construction, facility operations will be scaled in phases, the first of which will require a small fraction of the freshwater volume reflected in the submitted permit application. Thus, Nordic views the submitted Water Resource Monitoring Plan (WRMP) as being currently focused on refining the existing understanding of baseline/pre-pumping conditions, as there is ample opportunity (i.e., several years) to do so before rates of withdrawal approach those conservatively reflected in the analyses presented in the permit application, including the numerical groundwater modeling work. Furthermore, Nordic views the WRMP as being adaptable – information gathered

through initial and future monitoring can and should be used to improve the quality and efficiency of the plan, when and where possible.

However, to proactively address potential future monitoring needs reflected by comments presented herein, Nordic is prepared to make significant alterations to the proposed WRMP. These modifications include:

1. Where practical for on-Site locations, Nordic will install pressure transducers or similar automated data logging equipment (i.e., including conductivity-capable transducers) and establish a networked monitoring system. Data gathered through this system will be centrally compiled in an electronic format that will be remotely accessible, provide significant flexibility and support near-immediate assessment, if necessary.

2. For off-Site monitoring locations, manual monthly data downloads and reporting will occur during initial operations and following significant changes in water usage (e.g., scaling to Phase 2). Nordic proposes that the monthly download and reporting frequency continue for a minimum of 12 months under generally static water use conditions. Should such a period elapse without significant changes in water use or deviation from anticipated conditions, a frequency reduction may be proposed (e.g., reducing from monthly to quarterly download and reporting frequency). Implementation of a reduced data download and reporting frequency would require DEP approval. Alternatively, frequency increases will be proposed should significant deviations from anticipated conditions be observed during reporting.

3. Modified techniques and frequencies associated with monitoring flow conditions within the reach of the Little River occurring between the Upper and Lower Reservoirs. Ultimately, Nordic intends to establish relationships that would allow flows (and changes relative to anticipated flows) to be inferred through near real-time monitoring of stage. These modifications are discussed in more detail below within the response to Item 1.D.

4. Provide measures for collecting daily intake rate data on a source-specific basis. This modification is discussed in more detail below within the response to Item 1.E.

b. Data obtained during the pump tests suggest that the fine-grained overburden sediments may effectively separate some surface waters from connection with the bedrock aquifer. However, in part because the shallow wells installed during the pump test could not be developed, the quality of their connection to the surficial aquifer is not clear. The applicant proposes installation of three overburden monitoring wells (monitoring plan section 2.2.4) for measurement of water level and quality. It is not clear from the information if the intent is for these wells to be screened entirely within the fine sediment of the overburden or if they will extend to the apparently more permeable zone near the bedrock - overburden contact. It may be that this zone is important for maintenance of baseflow to larger streams in the area, and the pump test data indicate that this zone may be affected by pumping of the bedrock aquifer. Consequently, the proposed monthly data collection may not be sufficient to assess the impact of significant drawdown in the bedrock aquifer on head in this zone and possibly also on baseflow.

The proposed overburden monitoring wells identified as OVB-101, OVB-102, and OVB-103 within the WRMP will be constructed as shallow and deep overburden pairings. The shallow wells within each pairing will be constructed with screens spanning the position of the water table based on observations made during boring advancements (i.e., likely within clay-and-silt glaciomarine deposits). The deeper wells within each pairing will be constructed with well screens spanning the transition zone between unconsolidated overburden deposits and the underlying weathered bedrock, as supported by observations made during boring advancement. This approach will support assessment of shallow/perched groundwater quality, as well as water quality and potential hydraulic responses within the more transmissive overburden/weathered bedrock transition zone.

Note the following relative to these proposed monitoring wells:

1. In certain locations and under certain seasonal conditions, groundwater may reside below the local vertical position of the overburden/weathered bedrock transition zone, limiting the practicality of installing wells in the manner described above.

2. It may be impractical to use common techniques to collect groundwater samples from shallow monitoring wells completed in the silt-and-clay deposits due to very low recharge rates.

As referenced within the response to Item 1.A, where possible and practical, these wells will be equipped with pressure transducers, which will be incorporated into the networked monitoring system.

c. The applicant is proposing to install six piezometers "to monitor overburden groundwater levels at shallow ... and deep ...intervals" (Section 2.2.5). From Figure 3, these wells are not the same as the three overburden wells described in Section 2.2.4. The applicant also proposes wetland monitoring (Section 2.2.8) at wetlands W7 and W9. Figure 3 shows a nested pair of piezometers associated with wetland W9, but only the single proposed piezometer P5 in the area of wetland W7; shallow and deep piezometers should be located as close as possible to any wetland monitoring tract. Since the nested pair PZ-1 S and PZ-1 D would be eliminated by the proposed construction, they should be replaced by a nested pair in or adjacent to wetland W7. As noted in other cases previously, the proposed monthly measurement rate may not allow adequate assessment of changing groundwater conditions, particularly during significant changes in pumping rate or drought conditions.

Shallow and deep piezometers will be installed in the vicinity of wetland W7 (i.e., PZ-5S and PZ-5D). As referenced within the response to Item 1.A, where possible and practical, these piezometers will be equipped with pressure transducers, which will be incorporated into the networked monitoring system.

d. According to Section 2.2.6, the applicant proposes measurement of river stage at three staff gauges (SG-2, SG-3, and SG-4), as well as at an additional location on the Little River (SG-Mid). The first three locations are to be monitored by pressure transducer when conditions permit, with data to be downloaded quarterly, and data to be collected monthly when transducers cannot be deployed. Data at station SG-Mid are proposed to be measured monthly with the applicant conducting a "feasibility assessment ... regarding the installation of a remote monitoring system to measure stage in the Little River in real-time." Because surface water conditions are much

more subject to rapid variation than groundwater conditions under most circumstances, quarterly data collection and monthly manual measurement of stage are not likely to identify long-term trends than can be masked by transient flow conditions; collection of data and comparison to relevant standards will need to be done more frequently. The Department has required surface water level and flow monitoring at several facilities conducting large-volume groundwater extraction; the applicant may wish to confer with staff at those facilities regarding experience with near real-time data collection, ice conditions, and other issues with stream monitoring.

Relative to flow monitoring at location SG-Mid, consideration should be given to challenges presented by the steeply banked, rocky channel through which the Little River flows within the subject reach. These challenges limit the feasibility of regularly and safely producing reliable flow data from this location at a high (e.g., near real-time) temporal frequency. Additional consideration should be given to findings derived from aquifer testing conducted as part of hydrogeologic investigation activities, including observations of hydraulic responses within private supply wells located west of the river stemming from test well withdrawals (i.e., indicating limited connectivity between the local bedrock aquifer and the subject reach of the Little River). Thus, while the importance of collecting flow data is recognized, there is reasonable justification for developing a flexible plan that selectively targets lower flow conditions.

Based on this perspective, Nordic proposes to initially use the condition at a nearby USGS gaging station (USGS 01037380, Ducktrap River near Lincolnville, Maine) as an indicator for the need for higher frequency flow measurements. While conditions at this gage reside above the 10 percent duration flow condition (based on annual flow statistics), collection of flow data at SG-Mid will be conducted at a normal, monthly interval, if safe and practical. Should flows at the indicator gage fall below this threshold, the frequency of flow data collection at SG-Mid will be temporarily increased to weekly, if safe and practical, until flows at the indicator station recover.

To supplement these activities, a stilling well outfitted with a pressure transducer (or similar apparatus) will be established to measure the stage of the Little River in the vicinity of the SG-Mid section. Flow measurements gathered through initial monitoring and recorded stages will be used to develop a stage-discharge relationship. An assessment of the correlation between flows within the Little River and the Ducktrap River at the USGS gaging station will also be conducted.

Additionally, while transducers are deployed, data download frequency will be monthly for locations SG-2, SG-3, and SG-4. During pre-pumping periods where transducers cannot be reliably deployed, manual measurements of stage at monthly intervals are believed to be adequate, as such periods are likely to coincide with generally wetter, winter-season conditions.

The actions described above are intended to support refinement of the WRMP, particularly the methods used to monitor and assess flow conditions within the Little River and reservoirs, as the facility matures beyond construction and into phases associated with active withdrawals.

e. The applicant proposes to monitor water usage at both the production wells (Section 2.2.1) and the surface water intake (Section 2.2.6). Both sections state that rate and volume

measurements "will be recorded ... on a monthly basis." Water intake data from all sources, including the water utility, should be recorded no less often than daily, both to allow better correlation with any variation seen in water levels or surface water flows, and also to provide more accurate timing of changes in withdrawal rate that may require more time to appear in slower-responding systems, particularly groundwater.

> Intake rate data will be recorded on a source-specific basis at a daily frequency. Initially, these data will be reported on a monthly basis prior to operations and associated withdrawals.

f. Changes to the monitoring program, such as proposed on page 6 of the plan, will require specific approval from the Department, based on its review of all data collected to that point and other available information. The potential change described on this page should not be included in the permit at this point, although the permit can note that, other than any changes necessary to address required replacement of monitoring locations due to damage or voluntary withdrawal of a homeowner from the program, or changes required by the Department to address specific issues, if any, that arise during operation, the approved monitoring program should continue for at least two years of groundwater extraction at full capacity.

> Nordic acknowledges this comment and understands that other than any changes necessary to address required replacement of monitoring locations due to damage or voluntary withdrawal of a homeowner from the program, or changes required by the Department to address specific issues, if any, that arise during operation, the approved monitoring program should continue for at least two years of groundwater extraction at full capacity.

g. The applicant proposes to use offsite data to determine precipitation amounts and other conditions in the watershed; an onsite station for collection of precipitation and other weather and climatic data should be established and in operation prior to occupancy of the facility.

> The National Weather Service (NWS) COOP station located in Belfast provides weather condition information, including precipitation and air temperature data, measured daily (historical data of this type available since approximately 1948). This station is located only approximately 3.1 miles to the north of the Site. A comparison of monthly statistical descriptors for the Belfast station and other nearby stations (e.g., Belmont, Maine and Bangor, Maine) based on precipitation records for the last three complete calendar years (2016 through 2018) does not suggest significant local variability. Thus, Nordic considers the Belfast station to be a reliable source of weather condition information for the Site vicinity.

h. The applicant proposes performance criteria and warning levels in Section 3.0 of the monitoring plan. However, in the absence of adequate background data or well construction information on the domestic wells in the proposed program, it is not appropriate to set specific criteria at this time. The Department also notes that, in general, depending on the amount and date of precipitation, the extent and depth of snow cover and timing of snow melt, and other factors, a month-to-month comparison of water levels for comparing wells in pre- and post-development conditions, as suggested on page 10 of the proposed monitoring plan, may not be the most suitable approach in all cases, and the Department will employ appropriate flexibility in making a determination that the monitoring data suggests that an unreasonable adverse impact has or could reasonably occur. Moreover, the warning levels proposed in Section 3.2 are

generally ones at which a significant adverse impact on the affected resource or water supply well will have occurred, and the proposed response to this impact is generation of a report including the activities identified on page 12, but no specific action to mitigate the observed impact. Given the long proposed times between data collection, issues with which are described above, this could lead to an extended period of adverse impact. The monitoring plan should be revised to address issues identified above and this revised plan should propose warning levels which would identify the potential for adverse impact as well as measures to be implemented in order to prevent that impact. Such measures could include, but are not limited to, increased frequency of monitoring, reduced extraction of water from one or more sources, provision of alternate water supplies, and changes in production schedule. Correct setting of such warning levels requires sufficient pre-pumping data, and the applicant should begin collecting these data regarding seasonal variation in water level, domestic well construction, and other relevant information, and should include all such data in the revised monitoring plan, together with a justification for all proposed warning levels.

Collection of baseline/pre-pumping data and information will commence following permit approval. As noted, these data and this information will be needed to refine proposed warning levels. Nordic anticipates that an addendum to the WRMP, subject to DEP review and approval, will be issued to establish specific warning levels prior to commencing operations requiring active withdrawals. The refined warning levels are anticipated to be appropriately indicative of conditions trending toward a potential adverse impact, as opposed to being confirmation of occurrence.

Refining warning levels, as described above, is anticipated to address DEP's comment pertaining to proposed responses. That is, a first phase of conditions and mitigation options assessment supplemented by the options presented in Section 3.3 (Action Plan) is generally appropriate. Nordic acknowledges that operational changes, including reduced withdrawals and/or redistribution of sourcing, would also be considered; thus, the language presented in Section 3.3 of the WRMP should be interpreted as: "Nordic acknowledges that under extreme scenarios this remedial action plan may require the installation of a water treatment system, alteration of an existing well and/or pump system, drilling of a new water supply well, new connection to the public water supply system, or operational changes should adverse impacts to water quantity or quality be documented".

2. Blasting

a. The cover letter describing the blast plan assessment for this project is somewhat incomplete regarding the Department ground vibration standards. The standard of 1.25 in/sec applies only to certain distances and for blasts designed with a specific scaled distance value, as described in Table 1 of38 MRS §490-Z(14)(K). The ground vibration standard of USBM RI 8507, Appendix B, Figure B-1 shows variable particle velocities depending on the :frequency, and varies from 2.00 in/sec to slightly less than 0.2 in/sec at very low frequencies; the applicant has agreed in the "Blast Vibration & Air-Blast" section of the plan to comply with that standard. Note also that the language regarding air overpressure limits in this section of the proposed plan can be read to limit the developer to a total of four blasts; 38 MRS §490-Z(14)(H) reduces the air overpressure limit based on the number of blasts per day, so that the 123 dB limit applies to cases of four or more blasts per day.

38 MRS §490-Z 14. I. states that the limits in Table 1 of Paragraph K and the "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 both must not be exceeded. We plan to

use seismic monitoring at the nearest off-site location for the project. Our plan is stating that we will use the "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 limits and we will not exceed the maximum peak particle velocities based on the distances listed in Table 1 of Paragraph K for blasting.

In the standard from the State on air blast from 38 MRS §490-Z 14. G: This statute limits us to 4 blasts per day and paragraph H limits us to the decibel levels that we provided. It was not our intent to limit the total number of blasts on the project to 4, while the plan may be read that way. The intent of our plan was to match the statute and limit us to 4 blasts daily at the lowering decibel levels provided.

b. Note that Section 7.2 of the geotechnical survey report recommends a pre-blast survey radius of 500 feet, which is not consistent with Site Location requirements or with the submitted blast plan; unless a lower pre-blast survey radius, based on a reduction of charge weight per delay as outlined in 38 MRS §490-2(14), is requested and approved by the Department, the larger pre-blast survey radius of 2000 feet is required.

As noted in our response to a. above, the project plans for blasting to adhere to 38 MRS *§490-2(14).*

3. Geotechnical Survey

a. No log or location is provided for any boring B303, and the listing of explorations in Section 3.0 of the geotechnical report suggests that this exploration may have been intentionally omitted or not performed. This should be clarified.

This boring was not performed.

b. The exploration logs note soft clays in several explorations, apparently associated with areas of locally lower bedrock elevation. The report correctly observes (Section 5.0, p. 8) that potential consolidation of these soils under the anticipated structural loading and other factors require "excavation and replacement of the ... soils with compacted structural fill, and/or design of the buildings to bear at elevations corresponding to suitable bearing soils." (Note that any dewatering required during excavation of such unsuitable soils or placement of structural fill is likely to contain a large fraction of fines.) Section 2.2 of the geotechnical report states that the "structural loads, tolerable settlement amounts, and grading and drainage plans were not finalized when this report was prepared", although some preliminary values appear to have provided (p.3). It is not known if final values for these parameters have been provided to the geotechnical engineer. Although the proposed remedial actions would likely be similar or identical, any changes to the design, addenda to the geotechnical report, or similar information that may be based on final values for these and other design parameters must be submitted for review and approval.

At this time, no additional design parameters have been provided to the geotechnical engineer for consideration, nor have any additional geotechnical evaluations been conducted.

4. Groundwater

a. Section 15.4 of the application states that "the construction contractor will be required to provide a site-specific Spill Prevention, Control, and Countermeasures Plan ... to be submitted to the MEDEP prior

to construction." The order should specifically state that this plan should be submitted for review and approval prior to construction. This section also states that, prior to operation, "an operational SPCC plan will be developed by Nordic and submitted to the MEDEP for review"; any order should also specifically state that this plan must be reviewed and approved by the Department prior to the start operations at the facility.

Nordic understands and agrees that the construction contractor will be required to provide a site-specific SPCC Plan for review and approval by the DEP prior to construction, and that a site-specific SPCC plan for operations will also be submitted to the DEP for review and approval prior to operations. A draft hazardous materials SPCC plan has been included with this submittal.

b. Part IV(C) (p. 6) of the Public Utilities Commission order approving transfer off land from the water district to the applicant refers to "environmental due diligence" and "environmental tests" to be performed on the property. Results of any such tests should be provided to the Department for review, since these could affect construction requirements, erosion control measures, and discharge of water from excavations or underdrains if any significant risks to human health or the environment were identified. Department staff have noted some cement pipe with fibrous material, possibly asbestos - cement pipe, in areas that would be excavated as part of the proposed project; if these or other tests identify or have identified this to be asbestos-containing material, the applicant would need to address measures for removal and proper disposal prior to construction.

The results of groundwater testing performed at the site were included as part of the hydrogeologic study included in Section 15 of the Site Location of Development application. No such risks to human health or the environment are anticipated based on these results, as compounds detected were primarily at or below background and/or applicable standards. Three soil samples collected for polynuclear aromatic hydrocarbons (PAHs) in a former coal storage area behind the existing Belfast Water district office exceeded MEDEP standards for commercial workers. A copy of the laboratory results for these soil samples is attached as Attachment A. No impacts to soil were identified from hazardous building materials (i.e., lead-based paint, asbestos, PCBs) identified in the existing site buildings.

5. Water Supply

a. The applicant has provided information from a series of pump tests and detailed hydrogeologic modeling of the regional groundwater system. In general, this information is sufficient to demonstrate that the specified volume of water can be obtained from the bedrock aquifer, although substantial drawdown in that aquifer will result; the long-term consequences of this extraction on water level and water quality are somewhat beyond the scope of the model, although it does suggest some possibility of induced salt-water intrusion, reduced baseflow, and increase in the volume of the larger bedrock aquifer contributing to this watershed (with the consequent minor reduction in volume of that aquifer contributing to adjacent watersheds). The monitoring program, modified as discussed above, is intended to address specific issues associated with possible adverse effects of this withdrawal and to include measures to mitigate or prevent any such adverse effects. The model is generally consistent with the findings of the exploratory borings in the vicinity of the proposed project, that the overburden consists largely of the fine-grained sediments of the Presumpscot Formation, which overlay a somewhat discontinuous till unit of varying thickness. These units overly an apparently relatively thick zone of weathered bedrock above more competent bedrock. Data from monitoring conducted during the pump tests, as indicated in the discussion of the monitoring program above, suggest that water levels in this weathered zone and, to some extent, the overlying till may respond to groundwater withdrawal from the bedrock aquifer to a much greater extent than water levels in the overlying Presumpscot Formation.

Consequently, there could be substantially greater potential for induced recharge or reduced baseflow to affect surface water resources located on or obtaining water from the till and/or fractured bedrock than would exist for those resources that may be in whole or part supported by the Presumpscot Formation. Assessment of the watershed by Department staff indicates that, within the area of greatest impact from the proposed groundwater withdrawal, only the reach of the Little River between the Upper Reservoir and the Lower Reservoir lies substantially within bedrock or weathered bedrock. This may impact the amount of baseflow to this reach and could possibly result in some measurable volume of induced recharge. The water balance calculations related to withdrawals from the Lower Reservoir presented in Section 15 appear to assume non-pumping conditions in determination of the baseflow contribution to this reach, and the model cross sections do not, at least at the scale shown in Figures 6a and 6b of the technical memorandum, clearly indicate whether riverbed conductance along this reach is determined using values for the bedrock and fractured bedrock or through the till or Presumpscot Formation, which could have the effect of muting any induced recharge or reduction in baseflow due to the significant drawdown in the bedrock (See Figures 14a – c of the technical memorandum), possibly leading to an underestimate of the change in stream leakage outflow shown in Figure 15 and described in the memorandum. Any measurable effect of such changes should be determined by the operational monitoring plan, if this plan is revised to allow a greater degree of precision and the facility becomes operational; to this end, a minimum flow and suitable warning level above this flow should be established for this reach as a performance standard, as generally indicated in discussion of the proposed monitoring program. To the extent practical, however, the applicant should incorporate an estimate of this loss in a revised water budget for the Lower Reservoir as part of this application.

As noted above in the response Item 1.D, significant effort will be dedicated to refining the current understanding of flow conditions within the Little River. Initially, this work will focus on baseline/pre-pumping conditions. Like Item 1.H., the refined baseline/pre-pumping understanding is needed in order to appropriately establish a minimum flow criterion and an associated warning level. Nordic anticipates that an addendum to the WRMP detailing these items, subject to DEP review and approval, will be issued to prior to commencing operations requiring active withdrawals.

The water budget presented as part of the submitted application is consistent with current assessments of the system, including the hydrogeologic investigation findings referenced in response to Item 1.D.

b. The applicant is proposing to obtain a significant component of freshwater from the Belfast Water District. Part IV(F)(l) (p. 12) of the Public Utilities Commission Order approving the land transfer notes that there are "no specific contractual curtailment provisions in the water supply agreement … during the first 6 years", under drought conditions or other circumstances, but that the utility states that it would apply "its general authority to curtail or reduce water sales .. .in the case of a drought or other water supply emergency." Maintenance of necessary environmental flows in the Goose River during drought conditions, however, is not the subject of this order and is not discussed in it. The 2018 capacity evaluation conducted for the utility notes (p. 8) that "a large portion of the water derived from the Goose River Aquifer is from induced infiltration" although data collected by the utility from a location downstream of the wells suggests that "at current pumping rates, the wells are not deriving much water from induced recharge" since these data also show that "under most circumstances … flow in the Goose River is greater downstream of the wells than it is at the dam." This report further notes, however, that "this might not be the case as pumping is increased from this aquifer in the future." It is not surprising to find that a system such as the Goose River and associated aquifer shows exchange of water in both directions between groundwater and surface water, under either natural or pumping conditions. However, these flow data are not provided in the capacity evaluation or the application, and the

measurements techniques are not described. It is not clear that flows have been measured under pumping conditions within the immediate area of influence from the wells, and minimum required environmental flows from that area are also not known. The applicant recommends in Section 15 that the existing additional municipal well be brought online to support the increased water use, and this should have the effect of distributing the increased stress across a longer reach of the river – aquifer system in the vicinity of the pumping wells. However, existing data regarding flows and flow measurement locations in the Goose River should be provided for review, and minimum flows consistent with Department requirements should be identified and maintained in the affected reach.

The Belfast Water District currently monitors both water quantity and water quality in the Goose River aquifer. Nordic and the BWD will obtain additional information regarding flows and flow measurement locations prior to initiation of the project and provide this information to ME DEP for review.

ATTACHMENT A

Laboratory Analysis Report

Nordic Aquafarms, Inc., Land-based Aquaculture Facility, Belfast, Maine
L-28319-26-A-N, Review Comments

JOB: L1812057 REPORT STYLE: Data Usability Report
0010: Alpha Analytical Report Cover Page - OK
0015: Sample Cross Reference Summary - OK
0060: Case Narrative - OK
0100: Volatiles Cover Page - OK
0110: Volatiles Sample Results - OK
0120: Volatiles Method Blank Report - OK
0130: Volatiles LCS Report - OK
0180: Semivolatiles Cover Page - OK
0190: Semivolatiles Sample Results - OK
0200: Semivolatiles Method Blank Report - OK
0210: Semivolatiles LCS Report - OK
0900: Pesticides Cover Page - OK
0910: Pesticides Sample Results - OK
0920: Pesticides Method Blank Report - OK
0930: Pesticides LCS Report - OK
1005: Metals Sample Results - OK
1010: Metals Method Blank Report - OK
1020: Metals LCS Report - OK
1040: Metals Matrix Spike Report - OK
1050: Metals Duplicate Report - OK
1180: Inorganics Cover Page - OK
1200: Wet Chemistry Sample Results - OK
1210: Wet Chemistry Method Blank Report - OK
1220: Wet Chemistry LCS Report - OK
1250: Wet Chemistry Duplicate Report - OK
5100: Sample Receipt & Container Information Report - OK
5200: Glossary - OK
5400: References - OK

ANALYTICAL REPORT

Lab Number:	L1812057
Client:	Ransom Consulting, Inc. 400 Commercial Street Suite 404 Portland, ME 04101-4660
ATTN:	Brian Pettingill
Phone:	(207) 772-2891
Project Name:	BELFAST WATER DISTRICT
Project Number:	171.05027.003
Report Date:	04/13/18

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1812057-01	GWW-101	WATER	BELFAST, ME	04/05/18 08:15	04/06/18
L1812057-02	GWW-101	WATER	BELFAST, ME	04/05/18 08:15	04/06/18
L1812057-03	GWW-103	WATER	BELFAST, ME	04/05/18 08:45	04/06/18
L1812057-04	GWW-103	WATER	BELFAST, ME	04/05/18 08:45	04/06/18
L1812057-05	SS-1	SOIL	BELFAST, ME	04/05/18 09:15	04/06/18
L1812057-06	SS-2	SOIL	BELFAST, ME	04/05/18 11:30	04/06/18
L1812057-07	GWW-101	WATER	BELFAST, ME	04/04/18 08:30	04/06/18
L1812057-08	GWW-103	WATER	BELFAST, ME	04/04/18 09:15	04/06/18
L1812057-09	TRIP BLANK	WATER	BELFAST, ME	04/04/18 00:00	04/06/18

Project Name:	BELFAST WATER DISTRICT	**Lab Number:**	L1812057
Project Number:	171.05027.003	**Report Date:**	04/13/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	BELFAST WATER DISTRICT	**Lab Number:**	L1812057
Project Number:	171.05027.003	**Report Date:**	04/13/18

Case Narrative (continued)

Report Submission

April 13, 2018: This is a preliminary report.

Sample Receipt

L1812057-06 and -07: The analysis of Pesticides was performed at the client's request.

Semivolatile Organics

The WG1104633-2/-3 LCS/LCSD recoveries, associated with L1812057-01 and -03, are below the acceptance criteria for benzidine (9%/6%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Total Metals

The WG1105166-1 Method Blank, associated with L1812057-01 and -03, has a concentration above the reporting limit for iron. Since the associated sample concentrations are greater than 10x the blank concentration for this analyte, no corrective action is required.

The WG1105166-2 LCS recovery, associated with L1812057-01 and -03, is above the acceptance criteria for selenium (123%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.

The WG1105073-3 MS recovery for sulfur (20%), performed on L1812057-03, does not apply because the sample concentration is greater than four times the spike amount added.

Phosphorus, Soluble

The samples were field filtered; a filter blank was not received.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 04/13/18

ORGANICS

VOLATILES

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/11/18 21:21
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	1.0	--	1
Bromoform	ND		ug/l	1.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	0.20	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01 Date Collected: 04/05/18 08:15

Client ID: GWW-101 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	1.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	1.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	1.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	1.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	1.0	--	1
1,2-Dibromoethane	ND		ug/l	1.0	--	1
1,3-Dichloropropane	ND		ug/l	1.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	1.0	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	1.0	--	1
o-Chlorotoluene	ND		ug/l	1.0	--	1
p-Chlorotoluene	ND		ug/l	1.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	1.0	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01 Date Collected: 04/05/18 08:15

Client ID: GWW-101 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	1.0	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	1.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	1.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	1.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	1.0	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	92		70-130

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 04/11/18 21:49
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	1.0	--	1
Bromoform	ND		ug/l	1.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	0.20	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03 Date Collected: 04/05/18 08:45

Client ID: GWW-103 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	1.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	1.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	1.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	1.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	1.0	--	1
1,2-Dibromoethane	ND		ug/l	1.0	--	1
1,3-Dichloropropane	ND		ug/l	1.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	1.0	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	1.0	--	1
o-Chlorotoluene	ND		ug/l	1.0	--	1
p-Chlorotoluene	ND		ug/l	1.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	1.0	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03 Date Collected: 04/05/18 08:45

Client ID: GWW-103 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	1.0	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	1.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	1.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	1.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	1.0	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	94		70-130

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05
Client ID: SS-1
Sample Location: BELFAST, ME

Date Collected: 04/05/18 09:15
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 04/11/18 09:26
Analyst: JC
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	14	--	1
1,1-Dichloroethane	ND		ug/kg	2.1	--	1
Chloroform	ND		ug/kg	2.1	--	1
Carbon tetrachloride	ND		ug/kg	1.4	--	1
1,2-Dichloropropane	ND		ug/kg	5.0	--	1
Dibromochloromethane	ND		ug/kg	1.4	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.1	--	1
Tetrachloroethene	ND		ug/kg	1.4	--	1
Chlorobenzene	ND		ug/kg	1.4	--	1
Trichlorofluoromethane	ND		ug/kg	7.1	--	1
1,2-Dichloroethane	ND		ug/kg	1.4	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.4	--	1
Bromodichloromethane	ND		ug/kg	1.4	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.4	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.4	--	1
1,1-Dichloropropene	ND		ug/kg	7.1	--	1
Bromoform	ND		ug/kg	5.7	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.4	--	1
Benzene	ND		ug/kg	1.4	--	1
Toluene	ND		ug/kg	2.1	--	1
Ethylbenzene	ND		ug/kg	1.4	--	1
Chloromethane	ND		ug/kg	7.1	--	1
Bromomethane	ND		ug/kg	2.8	--	1
Vinyl chloride	ND		ug/kg	2.8	--	1
Chloroethane	ND		ug/kg	2.8	--	1
1,1-Dichloroethene	ND		ug/kg	1.4	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05 Date Collected: 04/05/18 09:15

Client ID: SS-1 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Trichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichlorobenzene	ND		ug/kg	7.1	--	1
1,3-Dichlorobenzene	ND		ug/kg	7.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	7.1	--	1
Methyl tert butyl ether	ND		ug/kg	2.8	--	1
p/m-Xylene	ND		ug/kg	2.8	--	1
o-Xylene	ND		ug/kg	2.8	--	1
Xylenes, Total	ND		ug/kg	2.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	--	1
Dibromomethane	ND		ug/kg	14	--	1
1,4-Dichlorobutane	ND		ug/kg	14	--	1
1,2,3-Trichloropropane	ND		ug/kg	14	--	1
Styrene	ND		ug/kg	2.8	--	1
Dichlorodifluoromethane	ND		ug/kg	14	--	1
Acetone	ND		ug/kg	51	--	1
Carbon disulfide	ND		ug/kg	14	--	1
2-Butanone	ND		ug/kg	14	--	1
Vinyl acetate	ND		ug/kg	14	--	1
4-Methyl-2-pentanone	ND		ug/kg	14	--	1
2-Hexanone	ND		ug/kg	14	--	1
Ethyl methacrylate	ND		ug/kg	14	--	1
Acrylonitrile	ND		ug/kg	5.7	--	1
Bromochloromethane	ND		ug/kg	7.1	--	1
Tetrahydrofuran	ND		ug/kg	28	--	1
2,2-Dichloropropane	ND		ug/kg	7.1	--	1
1,2-Dibromoethane	ND		ug/kg	5.7	--	1
1,3-Dichloropropane	ND		ug/kg	7.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.4	--	1
Bromobenzene	ND		ug/kg	7.1	--	1
n-Butylbenzene	ND		ug/kg	1.4	--	1
sec-Butylbenzene	ND		ug/kg	1.4	--	1
tert-Butylbenzene	ND		ug/kg	7.1	--	1
o-Chlorotoluene	ND		ug/kg	7.1	--	1
p-Chlorotoluene	ND		ug/kg	7.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.1	--	1
Hexachlorobutadiene	ND		ug/kg	7.1	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05 Date Collected: 04/05/18 09:15

Client ID: SS-1 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-5035 - Westborough Lab						
Isopropylbenzene	ND		ug/kg	1.4	--	1
p-Isopropyltoluene	ND		ug/kg	1.4	--	1
Naphthalene	ND		ug/kg	7.1	--	1
n-Propylbenzene	ND		ug/kg	1.4	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	7.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	7.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	7.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	7.1	--	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	7.1	--	1
Ethyl ether	ND		ug/kg	7.1	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	82		70-130
Dibromofluoromethane	110		70-130

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 09:00
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 05 Batch: WG1105519-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	5.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	5.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	5.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 09:00
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 05 Batch: WG1105519-5					
Trichloroethene	ND		ug/kg	1.0	--
1,2-Dichlorobenzene	ND		ug/kg	5.0	--
1,3-Dichlorobenzene	ND		ug/kg	5.0	--
1,4-Dichlorobenzene	ND		ug/kg	5.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	10	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	10	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	10	--
2-Butanone	ND		ug/kg	10	--
Vinyl acetate	ND		ug/kg	10	--
4-Methyl-2-pentanone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrolein	ND		ug/kg	25	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	5.0	--
Tetrahydrofuran	ND		ug/kg	20	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	5.0	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 09:00
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 05 Batch: WG1105519-5					
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	5.0	--
1,3,5-Trichlorobenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	5.0	--
p-Chlorotoluene	ND		ug/kg	5.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.0	--
Hexachlorobutadiene	ND		ug/kg	5.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	5.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	5.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	5.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	5.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	5.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Ethyl ether	ND		ug/kg	5.0	--
Methyl Acetate	ND		ug/kg	20	--
Ethyl Acetate	ND		ug/kg	20	--
Isopropyl Ether	ND		ug/kg	4.0	--
Cyclohexane	ND		ug/kg	20	--
Tert-Butyl Alcohol	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
Methyl cyclohexane	ND		ug/kg	4.0	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 09:00
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-5035 - Westborough Lab for sample(s): 05 Batch: WG1105519-5					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/kg	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	81		70-130
Dibromofluoromethane	105		70-130

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 19:58
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1105890-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	1.0	--
Bromoform	ND		ug/l	1.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	0.20	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 19:58
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1105890-5					
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	1.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Iodomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	1.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	1.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	1.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	1.0	--
1,2-Dibromoethane	ND		ug/l	1.0	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 19:58
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1105890-5					
1,3-Dichloropropane	ND		ug/l	1.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	1.0	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	1.0	--
o-Chlorotoluene	ND		ug/l	1.0	--
p-Chlorotoluene	ND		ug/l	1.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	1.0	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	1.0	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	1.0	--
1,2,4-Trichlorobenzene	ND		ug/l	1.0	--
1,3,5-Trimethylbenzene	ND		ug/l	1.0	--
1,3,5-Trichlorobenzene	ND		ug/l	1.0	--
1,2,4-Trimethylbenzene	ND		ug/l	1.0	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	1.0	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	1.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	1.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	1.0	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/11/18 19:58
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1105890-5					
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 05 Batch: WG1105519-3 WG1105519-4								
Methylene chloride	92		92		70-130	0		30
1,1-Dichloroethane	96		94		70-130	2		30
Chloroform	83		81		70-130	2		30
Carbon tetrachloride	88		83		70-130	6		30
1,2-Dichloropropane	106		104		70-130	2		30
Dibromochloromethane	80		83		70-130	4		30
1,1,2-Trichloroethane	83		83		70-130	0		30
2-Chloroethylvinyl ether	87		85		70-130	2		30
Tetrachloroethene	98		93		70-130	5		30
Chlorobenzene	92		89		70-130	3		30
Trichlorofluoromethane	80		76		70-139	5		30
1,2-Dichloroethane	84		82		70-130	2		30
1,1,1-Trichloroethane	80		76		70-130	5		30
Bromodichloromethane	83		83		70-130	0		30
trans-1,3-Dichloropropene	71		70		70-130	1		30
cis-1,3-Dichloropropene	92		90		70-130	2		30
1,1-Dichloropropene	84		79		70-130	6		30
Bromoform	75		77		70-130	3		30
1,1,2,2-Tetrachloroethane	84		86		70-130	2		30
Benzene	90		86		70-130	5		30
Toluene	82		79		70-130	4		30
Ethylbenzene	78		75		70-130	4		30
Chloromethane	107		104		52-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 05 Batch: WG1105519-3 WG1105519-4								
Bromomethane	94		93		57-147	1		30
Vinyl chloride	99		93		67-130	6		30
Chloroethane	92		90		50-151	2		30
1,1-Dichloroethene	91		84		65-135	8		30
trans-1,2-Dichloroethene	91		87		70-130	4		30
Trichloroethene	86		82		70-130	5		30
1,2-Dichlorobenzene	96		97		70-130	1		30
1,3-Dichlorobenzene	95		96		70-130	1		30
1,4-Dichlorobenzene	94		96		70-130	2		30
Methyl tert butyl ether	83		83		66-130	0		30
p/m-Xylene	94		90		70-130	4		30
o-Xylene	93		90		70-130	3		30
cis-1,2-Dichloroethene	93		90		70-130	3		30
Dibromomethane	91		92		70-130	1		30
1,4-Dichlorobutane	91		93		70-130	2		30
1,2,3-Trichloropropane	74		75		68-130	1		30
Styrene	94		92		70-130	2		30
Dichlorodifluoromethane	62		58		30-146	7		30
Acetone	**154**	Q	**151**	Q	54-140	2		30
Carbon disulfide	90		84		59-130	7		30
2-Butanone	114		109		70-130	4		30
Vinyl acetate	100		97		70-130	3		30
4-Methyl-2-pentanone	85		80		70-130	6		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 05 Batch: WG1105519-3 WG1105519-4								
2-Hexanone	79		81		70-130	3		30
Ethyl methacrylate	**68**	Q	**67**	Q	70-130	1		30
Acrolein	108		110		70-130	2		30
Acrylonitrile	104		106		70-130	2		30
Bromochloromethane	112		112		70-130	0		30
Tetrahydrofuran	108		110		66-130	2		30
2,2-Dichloropropane	87		82		70-130	6		30
1,2-Dibromoethane	90		90		70-130	0		30
1,3-Dichloropropane	81		80		69-130	1		30
1,1,1,2-Tetrachloroethane	90		88		70-130	2		30
Bromobenzene	87		88		70-130	1		30
n-Butylbenzene	77		75		70-130	3		30
sec-Butylbenzene	84		83		70-130	1		30
tert-Butylbenzene	84		82		70-130	2		30
1,3,5-Trichlorobenzene	96		96		70-139	0		30
o-Chlorotoluene	75		74		70-130	1		30
p-Chlorotoluene	74		75		70-130	1		30
1,2-Dibromo-3-chloropropane	82		84		68-130	2		30
Hexachlorobutadiene	82		81		67-130	1		30
Isopropylbenzene	81		79		70-130	3		30
p-Isopropyltoluene	87		84		70-130	4		30
Naphthalene	86		87		70-130	1		30
n-Propylbenzene	75		74		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-5035 - Westborough Lab Associated sample(s): 05 Batch: WG1105519-3 WG1105519-4								
1,2,3-Trichlorobenzene	95		97		70-130	2		30
1,2,4-Trichlorobenzene	93		94		70-130	1		30
1,3,5-Trimethylbenzene	83		82		70-130	1		30
1,2,4-Trimethylbenzene	85		84		70-130	1		30
trans-1,4-Dichloro-2-butene	76		72		70-130	5		30
Ethyl ether	85		86		67-130	1		30
Methyl Acetate	100		98		65-130	2		30
Ethyl Acetate	94		92		70-130	2		30
Isopropyl Ether	101		101		66-130	0		30
Cyclohexane	105		98		70-130	7		30
Tert-Butyl Alcohol	87		87		70-130	0		30
Ethyl-Tert-Butyl-Ether	96		96		70-130	0		30
Tertiary-Amyl Methyl Ether	86		85		70-130	1		30
1,4-Dioxane	133		132		65-136	1		30
Methyl cyclohexane	90		82		70-130	9		30
1,1,2-Trichloro-1,2,2-Trifluoroethane	92		86		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87		87		70-130
Toluene-d8	90		91		70-130
4-Bromofluorobenzene	82		81		70-130
Dibromofluoromethane	107		107		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1105890-3 WG1105890-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	97		99		70-130	2		20
Carbon tetrachloride	86		89		63-132	3		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	91		92		63-130	1		20
1,1,2-Trichloroethane	110		110		70-130	0		20
2-Chloroethylvinyl ether	90		90		70-130	0		20
Tetrachloroethene	86		89		70-130	3		20
Chlorobenzene	96		98		75-130	2		25
Trichlorofluoromethane	91		96		62-150	5		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	91		95		67-130	4		20
Bromodichloromethane	93		94		67-130	1		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	99		100		70-130	1		20
1,1-Dichloropropene	97		100		70-130	3		20
Bromoform	87		87		54-136	0		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	94		97		70-130	3		25
Toluene	98		100		70-130	2		25
Ethylbenzene	97		100		70-130	3		20
Chloromethane	120		130		64-130	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1105890-3 WG1105890-4								
Bromomethane	73		78		39-139	7		20
Vinyl chloride	110		120		55-140	9		20
Chloroethane	110		120		55-138	9		20
1,1-Dichloroethene	93		96		61-145	3		25
trans-1,2-Dichloroethene	94		99		70-130	5		20
Trichloroethene	88		91		70-130	3		25
1,2-Dichlorobenzene	93		96		70-130	3		20
1,3-Dichlorobenzene	94		96		70-130	2		20
1,4-Dichlorobenzene	94		96		70-130	2		20
Methyl tert butyl ether	100		100		63-130	0		20
p/m-Xylene	95		100		70-130	5		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	94		96		70-130	2		20
Dibromomethane	93		94		70-130	1		20
1,4-Dichlorobutane	120		120		70-130	0		20
Iodomethane	**37**	Q	**42**	Q	70-130	13		20
1,2,3-Trichloropropane	110		110		64-130	0		20
Styrene	125		130		70-130	4		20
Dichlorodifluoromethane	110		110		36-147	0		20
Acetone	96		100		58-148	4		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	120		120		63-138	0		20
Vinyl acetate	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1105890-3 WG1105890-4								
4-Methyl-2-pentanone	110		110		59-130	0		20
2-Hexanone	110		110		57-130	0		20
Ethyl methacrylate	94		93		70-130	1		20
Acrolein	**280**	Q	**280**	Q	70-130	0		20
Acrylonitrile	110		120		70-130	9		20
Bromochloromethane	90		91		70-130	1		20
Tetrahydrofuran	130		130		58-130	0		20
2,2-Dichloropropane	100		100		63-133	0		20
1,2-Dibromoethane	98		96		70-130	2		20
1,3-Dichloropropane	110		110		70-130	0		20
1,1,1,2-Tetrachloroethane	92		94		64-130	2		20
Bromobenzene	90		94		70-130	4		20
n-Butylbenzene	100		110		53-136	10		20
sec-Butylbenzene	99		100		70-130	1		20
tert-Butylbenzene	95		100		70-130	5		20
o-Chlorotoluene	100		100		70-130	0		20
p-Chlorotoluene	100		100		70-130	0		20
1,2-Dibromo-3-chloropropane	90		90		41-144	0		20
Hexachlorobutadiene	66		71		63-130	7		20
Isopropylbenzene	99		100		70-130	1		20
p-Isopropyltoluene	97		100		70-130	3		20
Naphthalene	91		91		70-130	0		20
n-Propylbenzene	100		110		69-130	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1105890-3 WG1105890-4								
1,2,3-Trichlorobenzene	80		82		70-130	2		20
1,2,4-Trichlorobenzene	81		83		70-130	2		20
1,3,5-Trimethylbenzene	99		100		64-130	1		20
1,3,5-Trichlorobenzene	83		85		70-130	2		20
1,2,4-Trimethylbenzene	90		95		70-130	5		20
trans-1,4-Dichloro-2-butene	110		100		70-130	10		20
Halothane	84		87		70-130	4		20
Ethyl ether	110		110		59-134	0		20
Methyl Acetate	**140**	Q	130		70-130	7		20
Ethyl Acetate	120		120		70-130	0		20
Isopropyl Ether	120		120		70-130	0		20
Cyclohexane	110		120		70-130	9		20
Tert-Butyl Alcohol	86		92		70-130	7		20
Ethyl-Tert-Butyl-Ether	110		110		70-130	0		20
Tertiary-Amyl Methyl Ether	99		100		66-130	1		20
1,4-Dioxane	**48**	Q	60		56-162	**22**	Q	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	93		99		70-130	6		20
Methyl cyclohexane	94		100		70-130	6		20
p-Diethylbenzene	95		98		70-130	3		20
4-Ethyltoluene	100		100		70-130	0		20
1,2,4,5-Tetramethylbenzene	90		93		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1105890-3 WG1105890-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	102		101		70-130
Dibromofluoromethane	93		94		70-130

SEMIVOLATILES

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 04/10/18 16:30
Analyst: EK

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Biphenyl	ND		ug/l	2.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01 Date Collected: 04/05/18 08:15

Client ID: GWW-101 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	85		15-120
2,4,6-Tribromophenol	97		10-120
4-Terphenyl-d14	91		41-149

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/10/18 17:23
Analyst: CB

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Extraction Method: EPA 3510C
Extraction Date: 04/09/18 07:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	ND		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	ND		ug/l	0.10	--	1
1-Methylnaphthalene	ND		ug/l	0.10	--	1
2-Methylnaphthalene	0.13		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		21-120
Phenol-d6	40		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	89		15-120
2,4,6-Tribromophenol	73		10-120
4-Terphenyl-d14	96		41-149

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 04/10/18 18:39
Analyst: EK

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:42

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Biphenyl	ND		ug/l	2.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03 Date Collected: 04/05/18 08:45

Client ID: GWW-103 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		21-120
Phenol-d6	48		10-120
Nitrobenzene-d5	90		23-120
2-Fluorobiphenyl	86		15-120
2,4,6-Tribromophenol	97		10-120
4-Terphenyl-d14	91		41-149

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 04/10/18 17:48
Analyst: CB

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Extraction Method: EPA 3510C
Extraction Date: 04/09/18 07:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.10	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	ND		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	ND		ug/l	0.10	--	1
1-Methylnaphthalene	ND		ug/l	0.10	--	1
2-Methylnaphthalene	ND		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03 Date Collected: 04/05/18 08:45

Client ID: GWW-103 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	42		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	81		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	121		41-149

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05
Client ID: SS-1
Sample Location: BELFAST, ME

Date Collected: 04/05/18 09:15
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/12/18 02:11
Analyst: CB
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 04/08/18 01:29

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	--	1
Benzidine	ND		ug/kg	700	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	--	1
Hexachlorobenzene	ND		ug/kg	130	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	--	1
2-Chloronaphthalene	ND		ug/kg	210	--	1
1,2-Dichlorobenzene	ND		ug/kg	210	--	1
1,3-Dichlorobenzene	ND		ug/kg	210	--	1
1,4-Dichlorobenzene	ND		ug/kg	210	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	--	1
2,4-Dinitrotoluene	ND		ug/kg	210	--	1
2,6-Dinitrotoluene	ND		ug/kg	210	--	1
Azobenzene	ND		ug/kg	210	--	1
Fluoranthene	330		ug/kg	130	--	1
4-Chlorophenyl phenyl ether	ND		ug/kg	210	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	--	1
Hexachlorobutadiene	ND		ug/kg	210	--	1
Hexachlorocyclopentadiene	ND		ug/kg	610	--	1
Hexachloroethane	ND		ug/kg	170	--	1
Isophorone	ND		ug/kg	190	--	1
Naphthalene	ND		ug/kg	210	--	1
Nitrobenzene	ND		ug/kg	190	--	1
NDPA/DPA	ND		ug/kg	170	--	1
n-Nitrosodi-n-propylamine	ND		ug/kg	210	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	210	--	1
Butyl benzyl phthalate	ND		ug/kg	210	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05 Date Collected: 04/05/18 09:15

Client ID: SS-1 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Di-n-butylphthalate	ND		ug/kg	210	--	1
Di-n-octylphthalate	ND		ug/kg	210	--	1
Diethyl phthalate	ND		ug/kg	210	--	1
Dimethyl phthalate	ND		ug/kg	210	--	1
Benzo(a)anthracene	240		ug/kg	130	--	1
Benzo(a)pyrene	230		ug/kg	170	--	1
Benzo(b)fluoranthene	340		ug/kg	130	--	1
Benzo(k)fluoranthene	ND		ug/kg	130	--	1
Chrysene	250		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	ND		ug/kg	130	--	1
Benzo(ghi)perylene	ND		ug/kg	170	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	130	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	--	1
Pyrene	320		ug/kg	130	--	1
Aniline	ND		ug/kg	260	--	1
4-Chloroaniline	ND		ug/kg	210	--	1
1-Methylnaphthalene	ND		ug/kg	210	--	1
2-Nitroaniline	ND		ug/kg	210	--	1
3-Nitroaniline	ND		ug/kg	210	--	1
4-Nitroaniline	ND		ug/kg	210	--	1
Dibenzofuran	ND		ug/kg	210	--	1
2-Methylnaphthalene	ND		ug/kg	260	--	1
n-Nitrosodimethylamine	ND		ug/kg	430	--	1
2,4,6-Trichlorophenol	ND		ug/kg	130	--	1
p-Chloro-m-cresol	ND		ug/kg	210	--	1
2-Chlorophenol	ND		ug/kg	210	--	1
2,4-Dichlorophenol	ND		ug/kg	190	--	1
2,4-Dimethylphenol	ND		ug/kg	210	--	1
2-Nitrophenol	ND		ug/kg	460	--	1
4-Nitrophenol	ND		ug/kg	300	--	1
2,4-Dinitrophenol	ND		ug/kg	1000	--	1
4,6-Dinitro-o-cresol	ND		ug/kg	550	--	1
Pentachlorophenol	ND		ug/kg	170	--	1
Phenol	ND		ug/kg	210	--	1

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05 Date Collected: 04/05/18 09:15

Client ID: SS-1 Date Received: 04/06/18

Sample Location: BELFAST, ME Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2-Methylphenol	ND		ug/kg	210	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	--	1
2,4,5-Trichlorophenol	ND		ug/kg	210	--	1
Benzoic Acid	ND		ug/kg	690	--	1
Benzyl Alcohol	ND		ug/kg	210	--	1
Carbazole	ND		ug/kg	210	--	1
Pyridine	ND		ug/kg	230	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		25-120
Phenol-d6	50		10-120
Nitrobenzene-d5	99		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	88		10-136
4-Terphenyl-d14	71		18-120

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-06
Client ID: SS-2
Sample Location: BELFAST, ME

Date Collected: 04/05/18 11:30
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/12/18 08:44
Analyst: TT
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 04/11/18 14:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	12000	E	ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
Fluoranthene	78000	E	ug/kg	140	--	1
Naphthalene	9900	E	ug/kg	220	--	1
Benzo(a)anthracene	57000	E	ug/kg	140	--	1
Benzo(a)pyrene	48000	E	ug/kg	180	--	1
Benzo(b)fluoranthene	76000	E	ug/kg	140	--	1
Benzo(k)fluoranthene	11000	E	ug/kg	140	--	1
Chrysene	34000	E	ug/kg	140	--	1
Acenaphthylene	1100		ug/kg	180	--	1
Anthracene	22000	E	ug/kg	140	--	1
Benzo(ghi)perylene	28000	E	ug/kg	180	--	1
Fluorene	15000	E	ug/kg	220	--	1
Phenanthrene	66000	E	ug/kg	140	--	1
Dibenzo(a,h)anthracene	6300		ug/kg	140	--	1
Indeno(1,2,3-cd)pyrene	35000	E	ug/kg	180	--	1
Pyrene	61000	E	ug/kg	140	--	1
1-Methylnaphthalene	3200		ug/kg	220	--	1
2-Methylnaphthalene	4100		ug/kg	270	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	72		30-120
4-Terphenyl-d14	56		18-120

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-06 D
Client ID: SS-2
Sample Location: BELFAST, ME

Date Collected: 04/05/18 11:30
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 04/13/18 04:51
Analyst: PS
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 04/11/18 14:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	10000		ug/kg	3600	--	20
Fluoranthene	90000		ug/kg	2700	--	20
Naphthalene	8200		ug/kg	4500	--	20
Benzo(a)anthracene	45000		ug/kg	2700	--	20
Benzo(a)pyrene	35000		ug/kg	3600	--	20
Benzo(b)fluoranthene	50000		ug/kg	2700	--	20
Benzo(k)fluoranthene	15000		ug/kg	2700	--	20
Chrysene	41000		ug/kg	2700	--	20
Anthracene	23000		ug/kg	2700	--	20
Benzo(ghi)perylene	20000		ug/kg	3600	--	20
Fluorene	14000		ug/kg	4500	--	20
Phenanthrene	82000		ug/kg	2700	--	20
Indeno(1,2,3-cd)pyrene	24000		ug/kg	3600	--	20
Pyrene	70000		ug/kg	2700	--	20

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:07
Analyst: CB

Extraction Method: EPA 3546
Extraction Date: 04/08/18 01:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1104559-1					
Acenaphthene	ND		ug/kg	130	--
Benzidine	ND		ug/kg	540	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Chlorophenyl phenyl ether	ND		ug/kg	160	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachlorocyclopentadiene	ND		ug/kg	470	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
NDPA/DPA	ND		ug/kg	130	--
n-Nitrosodi-n-propylamine	ND		ug/kg	160	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:07
Analyst: CB

Extraction Method: EPA 3546
Extraction Date: 04/08/18 01:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1104559-1					
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Biphenyl	ND		ug/kg	370	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Nitroaniline	ND		ug/kg	160	--
3-Nitroaniline	ND		ug/kg	160	--
4-Nitroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
n-Nitrosodimethylamine	ND		ug/kg	330	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
p-Chloro-m-cresol	ND		ug/kg	160	--
2-Chlorophenol	ND		ug/kg	160	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:07
Analyst: CB

Extraction Method: EPA 3546
Extraction Date: 04/08/18 01:14

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 05 Batch: WG1104559-1					
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
4,6-Dinitro-o-cresol	ND		ug/kg	420	--
Pentachlorophenol	ND		ug/kg	130	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Benzoic Acid	ND		ug/kg	530	--
Benzyl Alcohol	ND		ug/kg	160	--
Carbazole	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	96		25-120
Phenol-d6	105		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	86		30-120
2,4,6-Tribromophenol	100		10-136
4-Terphenyl-d14	93		18-120

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:12
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1104633-1					
Acenaphthene	ND		ug/l	2.0	--
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:12
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1104633-1					
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Biphenyl	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
1-Methylnaphthalene	ND		ug/l	2.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:12
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1104633-1					
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	3.5	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/10/18 15:12
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1104633-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	40		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	83		10-120
4-Terphenyl-d14	84		41-149

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 04/10/18 09:56
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,03 Batch: WG1104635-1					
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.10	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
1-Methylnaphthalene	ND		ug/l	0.10	--
2-Methylnaphthalene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 04/10/18 09:56
Analyst: CB

Extraction Method: EPA 3510C
Extraction Date: 04/08/18 23:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,03 Batch: WG1104635-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	82		41-149

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/11/18 22:56
Analyst: TT

Extraction Method: EPA 3546
Extraction Date: 04/10/18 17:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG1105283-1					
Acenaphthene	ND		ug/kg	130	--
2-Chloronaphthalene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
1-Methylnaphthalene	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 04/11/18 22:56
Analyst: TT

Extraction Method: EPA 3546
Extraction Date: 04/10/18 17:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG1105283-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	71		30-120
4-Terphenyl-d14	76		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1104559-2 WG1104559-3								
Acenaphthene	96		99		31-137	3		50
Benzidine	21		23		10-66	9		50
1,2,4-Trichlorobenzene	96		97		38-107	1		50
Hexachlorobenzene	96		102		40-140	6		50
Bis(2-chloroethyl)ether	88		94		40-140	7		50
2-Chloronaphthalene	99		102		40-140	3		50
1,2-Dichlorobenzene	91		94		40-140	3		50
1,3-Dichlorobenzene	91		94		40-140	3		50
1,4-Dichlorobenzene	91		94		28-104	3		50
3,3'-Dichlorobenzidine	61		70		40-140	14		50
2,4-Dinitrotoluene	104		109		40-132	5		50
2,6-Dinitrotoluene	108		106		40-140	2		50
Azobenzene	122		130		40-140	6		50
Fluoranthene	100		104		40-140	4		50
4-Chlorophenyl phenyl ether	94		100		40-140	6		50
4-Bromophenyl phenyl ether	99		103		40-140	4		50
Bis(2-chloroisopropyl)ether	105		106		40-140	1		50
Bis(2-chloroethoxy)methane	99		96		40-117	3		50
Hexachlorobutadiene	101		108		40-140	7		50
Hexachlorocyclopentadiene	81		77		40-140	5		50
Hexachloroethane	102		105		40-140	3		50
Isophorone	99		98		40-140	1		50
Naphthalene	96		94		40-140	2		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1104559-2 WG1104559-3								
Nitrobenzene	102		102		40-140	0		50
NDPA/DPA	100		105		36-157	5		50
n-Nitrosodi-n-propylamine	103		103		32-121	0		50
Bis(2-ethylhexyl)phthalate	112		120		40-140	7		50
Butyl benzyl phthalate	112		119		40-140	6		50
Di-n-butylphthalate	108		112		40-140	4		50
Di-n-octylphthalate	109		117		40-140	7		50
Diethyl phthalate	104		108		40-140	4		50
Dimethyl phthalate	103		100		40-140	3		50
Benzo(a)anthracene	100		107		40-140	7		50
Benzo(a)pyrene	103		111		40-140	7		50
Benzo(b)fluoranthene	103		110		40-140	7		50
Benzo(k)fluoranthene	99		109		40-140	10		50
Chrysene	100		105		40-140	5		50
Acenaphthylene	102		102		40-140	0		50
Anthracene	100		103		40-140	3		50
Benzo(ghi)perylene	103		110		40-140	7		50
Fluorene	100		103		40-140	3		50
Phenanthrene	100		103		40-140	3		50
Dibenzo(a,h)anthracene	101		107		40-140	6		50
Indeno(1,2,3-cd)pyrene	106		113		40-140	6		50
Pyrene	98		101		35-142	3		50
Biphenyl	100		102		54-104	2		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1104559-2 WG1104559-3								
Aniline	56		56		40-140	0		50
4-Chloroaniline	104		99		40-140	5		50
1-Methylnaphthalene	108		107		26-130	1		50
2-Nitroaniline	109		106		47-134	3		50
3-Nitroaniline	56		58		26-129	4		50
4-Nitroaniline	90		94		41-125	4		50
Dibenzofuran	97		101		40-140	4		50
2-Methylnaphthalene	95		95		40-140	0		50
n-Nitrosodimethylamine	98		92		22-100	6		50
2,4,6-Trichlorophenol	105		104		30-130	1		50
p-Chloro-m-cresol	**114**	Q	**110**	Q	26-103	4		50
2-Chlorophenol	101		**103**	Q	25-102	2		50
2,4-Dichlorophenol	113		111		30-130	2		50
2,4-Dimethylphenol	111		105		30-130	6		50
2-Nitrophenol	105		108		30-130	3		50
4-Nitrophenol	111		**119**	Q	11-114	7		50
2,4-Dinitrophenol	87		90		4-130	3		50
4,6-Dinitro-o-cresol	105		116		10-130	10		50
Pentachlorophenol	89		94		17-109	5		50
Phenol	**98**	Q	**98**	Q	26-90	0		50
2-Methylphenol	106		109		30-130.	3		50
3-Methylphenol/4-Methylphenol	112		112		30-130	0		50
2,4,5-Trichlorophenol	119		115		30-130	3		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 05 Batch: WG1104559-2 WG1104559-3								
Benzoic Acid	60		54		10-110	11		50
Benzyl Alcohol	111		109		40-140	2		50
Carbazole	101		104		54-128	3		50
Pyridine	80		80		10-93	0		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	96		100		25-120
Phenol-d6	105		107		10-120
Nitrobenzene-d5	87		89		23-120
2-Fluorobiphenyl	88		89		30-120
2,4,6-Tribromophenol	100		110		10-136
4-Terphenyl-d14	87		90		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1104633-2 WG1104633-3								
Acenaphthene	85		78		37-111	9		30
Benzidine	**9**	Q	**6**	Q	10-75	**40**	Q	30
1,2,4-Trichlorobenzene	76		69		39-98	10		30
Hexachlorobenzene	96		90		40-140	6		30
Bis(2-chloroethyl)ether	93		83		40-140	11		30
2-Chloronaphthalene	82		76		40-140	8		30
1,2-Dichlorobenzene	73		64		40-140	13		30
1,3-Dichlorobenzene	70		61		40-140	14		30
1,4-Dichlorobenzene	70		62		36-97	12		30
3,3'-Dichlorobenzidine	63		65		40-140	3		30
2,4-Dinitrotoluene	98		92		48-143	6		30
2,6-Dinitrotoluene	110		104		40-140	6		30
Azobenzene	103		96		40-140	7		30
Fluoranthene	92		86		40-140	7		30
4-Chlorophenyl phenyl ether	88		81		40-140	8		30
4-Bromophenyl phenyl ether	86		80		40-140	7		30
Bis(2-chloroisopropyl)ether	97		87		40-140	11		30
Bis(2-chloroethoxy)methane	98		91		40-140	7		30
Hexachlorobutadiene	68		61		40-140	11		30
Hexachlorocyclopentadiene	51		48		40-140	6		30
Hexachloroethane	73		65		40-140	12		30
Isophorone	110		102		40-140	8		30
Naphthalene	76		69		40-140	10		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1104633-2 WG1104633-3								
Nitrobenzene	98		90		40-140	9		30
NDPA/DPA	90		84		40-140	7		30
n-Nitrosodi-n-propylamine	107		99		29-132	8		30
Bis(2-ethylhexyl)phthalate	106		99		40-140	7		30
Butyl benzyl phthalate	102		96		40-140	6		30
Di-n-butylphthalate	95		90		40-140	5		30
Di-n-octylphthalate	98		92		40-140	6		30
Diethyl phthalate	96		90		40-140	6		30
Dimethyl phthalate	96		93		40-140	3		30
Benzo(a)anthracene	94		88		40-140	7		30
Benzo(a)pyrene	96		89		40-140	8		30
Benzo(b)fluoranthene	95		88		40-140	8		30
Benzo(k)fluoranthene	95		89		40-140	7		30
Chrysene	96		89		40-140	8		30
Acenaphthylene	90		84		45-123	7		30
Anthracene	88		84		40-140	5		30
Benzo(ghi)perylene	98		93		40-140	5		30
Fluorene	89		82		40-140	8		30
Phenanthrene	87		82		40-140	6		30
Dibenzo(a,h)anthracene	95		91		40-140	4		30
Indeno(1,2,3-cd)pyrene	98		92		40-140	6		30
Pyrene	90		86		26-127	5		30
Biphenyl	83		77		40-140	8		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1104633-2 WG1104633-3								
Aniline	**39**	Q	**33**	Q	40-140	17		30
4-Chloroaniline	86		70		40-140	21		30
1-Methylnaphthalene	87		80		41-103	8		30
2-Nitroaniline	99		94		52-143	5		30
3-Nitroaniline	50		48		25-145	4		30
4-Nitroaniline	78		79		51-143	1		30
Dibenzofuran	86		79		40-140	8		30
2-Methylnaphthalene	77		71		40-140	8		30
n-Nitrosodimethylamine	62		52		22-74	18		30
2,4,6-Trichlorophenol	95		91		30-130	4		30
p-Chloro-m-cresol	**98**	Q	94		23-97	4		30
2-Chlorophenol	89		79		27-123	12		30
2,4-Dichlorophenol	96		87		30-130	10		30
2,4-Dimethylphenol	88		76		30-130	15		30
2-Nitrophenol	100		89		30-130	12		30
4-Nitrophenol	62		60		10-80	3		30
2,4-Dinitrophenol	72		70		20-130	3		30
4,6-Dinitro-o-cresol	94		92		20-164	2		30
Pentachlorophenol	74		70		9-103	6		30
Phenol	49		43		12-110	13		30
2-Methylphenol	87		80		30-130	8		30
3-Methylphenol/4-Methylphenol	90		82		30-130	9		30
2,4,5-Trichlorophenol	100		97		30-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1104633-2 WG1104633-3								
Benzoic Acid	28		22		10-164	24		30
Benzyl Alcohol	82		74		26-116	10		30
Carbazole	89		84		55-144	6		30
Pyridine	46		32		10-66	**36**	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		64		21-120
Phenol-d6	59		52		10-120
Nitrobenzene-d5	101		89		23-120
2-Fluorobiphenyl	90		84		15-120
2,4,6-Tribromophenol	117		107		10-120
4-Terphenyl-d14	94		87		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,03 Batch: WG1104635-2 WG1104635-3								
Acenaphthene	76		85		40-140	11		40
2-Chloronaphthalene	72		81		40-140	12		40
Fluoranthene	82		73		40-140	12		40
Hexachlorobutadiene	58		63		40-140	8		40
Naphthalene	71		78		40-140	9		40
Benzo(a)anthracene	75		83		40-140	10		40
Benzo(a)pyrene	76		85		40-140	11		40
Benzo(b)fluoranthene	81		92		40-140	13		40
Benzo(k)fluoranthene	72		81		40-140	12		40
Chrysene	73		80		40-140	9		40
Acenaphthylene	70		78		40-140	11		40
Anthracene	79		85		40-140	7		40
Benzo(ghi)perylene	78		76		40-140	3		40
Fluorene	82		89		40-140	8		40
Phenanthrene	77		84		40-140	9		40
Dibenzo(a,h)anthracene	80		78		40-140	3		40
Indeno(1,2,3-cd)pyrene	79		76		40-140	4		40
Pyrene	78		86		40-140	10		40
1-Methylnaphthalene	69		77		40-140	11		40
2-Methylnaphthalene	70		80		40-140	13		40
Pentachlorophenol	98		104		40-140	6		40
Hexachlorobenzene	70		77		40-140	10		40
Hexachloroethane	59		64		40-140	8		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,03 Batch: WG1104635-2 WG1104635-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		62		21-120
Phenol-d6	38		44		10-120
Nitrobenzene-d5	69		75		23-120
2-Fluorobiphenyl	73		79		15-120
2,4,6-Tribromophenol	63		76		10-120
4-Terphenyl-d14	80		88		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1105283-2 WG1105283-3								
Acenaphthene	69		67		31-137	3		50
2-Chloronaphthalene	71		69		40-140	3		50
Fluoranthene	68		66		40-140	3		50
Naphthalene	67		67		40-140	0		50
Benzo(a)anthracene	72		70		40-140	3		50
Benzo(a)pyrene	73		71		40-140	3		50
Benzo(b)fluoranthene	72		70		40-140	3		50
Benzo(k)fluoranthene	69		68		40-140	1		50
Chrysene	71		70		40-140	1		50
Acenaphthylene	76		75		40-140	1		50
Anthracene	67		67		40-140	0		50
Benzo(ghi)perylene	72		72		40-140	0		50
Fluorene	69		67		40-140	3		50
Phenanthrene	66		65		40-140	2		50
Dibenzo(a,h)anthracene	71		71		40-140	0		50
Indeno(1,2,3-cd)pyrene	74		72		40-140	3		50
Pyrene	67		66		35-142	2		50
1-Methylnaphthalene	77		77		26-130	0		50
2-Methylnaphthalene	71		69		40-140	3		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG1105283-2 WG1105283-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	72		71		23-120
2-Fluorobiphenyl	65		64		30-120
4-Terphenyl-d14	64		61		18-120

PESTICIDES

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-07
Client ID: GWW-101
Sample Location: BELFAST, ME

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 04/12/18 08:08
Analyst: SL

Date Collected: 04/04/18 08:30
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Extraction Method: EPA 3510C
Extraction Date: 04/11/18 00:31

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.020	--	1	A
Lindane	ND		ug/l	0.020	--	1	A
Alpha-BHC	ND		ug/l	0.020	--	1	A
Beta-BHC	ND		ug/l	0.020	--	1	A
Heptachlor	ND		ug/l	0.020	--	1	A
Aldrin	ND		ug/l	0.020	--	1	A
Heptachlor epoxide	ND		ug/l	0.020	--	1	A
Endrin	ND		ug/l	0.040	--	1	A
Endrin aldehyde	ND		ug/l	0.040	--	1	A
Endrin ketone	ND		ug/l	0.040	--	1	A
Dieldrin	ND		ug/l	0.040	--	1	A
4,4'-DDE	ND		ug/l	0.040	--	1	A
4,4'-DDD	ND		ug/l	0.040	--	1	A
4,4'-DDT	ND		ug/l	0.040	--	1	A
Endosulfan I	ND		ug/l	0.020	--	1	A
Endosulfan II	ND		ug/l	0.040	--	1	A
Endosulfan sulfate	ND		ug/l	0.040	--	1	A
Methoxychlor	ND		ug/l	0.200	--	1	A
Toxaphene	ND		ug/l	0.200	--	1	A
Chlordane	ND		ug/l	0.200	--	1	A
cis-Chlordane	ND		ug/l	0.020	--	1	A
trans-Chlordane	ND		ug/l	0.020	--	1	A

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-07
Client ID: GWW-101
Sample Location: BELFAST, ME

Date Collected: 04/04/18 08:30
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	136		30-150	A
Decachlorobiphenyl	117		30-150	A
2,4,5,6-Tetrachloro-m-xylene	133		30-150	B
Decachlorobiphenyl	124		30-150	B

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 04/12/18 07:29
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 04/11/18 00:31

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 07 Batch: WG1105367-1						
Delta-BHC	ND		ug/l	0.020	--	A
Lindane	ND		ug/l	0.020	--	A
Alpha-BHC	ND		ug/l	0.020	--	A
Beta-BHC	ND		ug/l	0.020	--	A
Heptachlor	ND		ug/l	0.020	--	A
Aldrin	ND		ug/l	0.020	--	A
Heptachlor epoxide	ND		ug/l	0.020	--	A
Endrin	ND		ug/l	0.040	--	A
Endrin aldehyde	ND		ug/l	0.040	--	A
Endrin ketone	ND		ug/l	0.040	--	A
Dieldrin	ND		ug/l	0.040	--	A
4,4'-DDE	ND		ug/l	0.040	--	A
4,4'-DDD	ND		ug/l	0.040	--	A
4,4'-DDT	ND		ug/l	0.040	--	A
Endosulfan I	ND		ug/l	0.020	--	A
Endosulfan II	ND		ug/l	0.040	--	A
Endosulfan sulfate	ND		ug/l	0.040	--	A
Methoxychlor	ND		ug/l	0.200	--	A
Toxaphene	ND		ug/l	0.200	--	A
Chlordane	ND		ug/l	0.200	--	A
cis-Chlordane	ND		ug/l	0.020	--	A
trans-Chlordane	ND		ug/l	0.020	--	A

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 04/12/18 07:29
Analyst: SL

Extraction Method: EPA 3510C
Extraction Date: 04/11/18 00:31

Parameter	Result	Qualifier	Units	RL	MDL	Column
Pesticides by GC - Westborough Lab for sample(s): 07 Batch: WG1105367-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	116		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	113		30-150	B
Decachlorobiphenyl	108		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Pesticides by GC - Westborough Lab Associated sample(s): 07 Batch: WG1105367-2 WG1105367-3									
Delta-BHC	147		147		30-150	0		20	A
Lindane	132		131		30-150	1		20	A
Alpha-BHC	145		144		30-150	1		20	A
Beta-BHC	122		122		30-150	0		20	A
Heptachlor	124		123		30-150	1		20	A
Aldrin	126		125		30-150	1		20	A
Heptachlor epoxide	123		123		30-150	0		20	A
Endrin	123		124		30-150	1		20	A
Endrin aldehyde	121		124		30-150	2		20	A
Endrin ketone	130		132		30-150	2		20	A
Dieldrin	132		133		30-150	1		20	A
4,4'-DDE	134		135		30-150	1		20	A
4,4'-DDD	128		130		30-150	2		20	A
4,4'-DDT	129		130		30-150	1		20	A
Endosulfan I	125		126		30-150	1		20	A
Endosulfan II	125		126		30-150	1		20	A
Endosulfan sulfate	131		134		30-150	2		20	A
Methoxychlor	116		120		30-150	3		20	A
cis-Chlordane	109		110		30-150	1		20	A
trans-Chlordane	123		123		30-150	0		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 07 Batch: WG1105367-2 WG1105367-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	134		130		30-150	A
Decachlorobiphenyl	105		110		30-150	A
2,4,5,6-Tetrachloro-m-xylene	128		127		30-150	B
Decachlorobiphenyl	106		115		30-150	B

METALS

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Antimony, Total	ND		mg/l	0.00400	--	1	04/09/18 15:30	04/10/18 10:18	EPA 3005A	1,6020A	AM
Arsenic, Total	0.007		mg/l	0.005	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Barium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Beryllium, Total	ND		mg/l	0.00050	--	1	04/09/18 15:30	04/10/18 10:18	EPA 3005A	1,6020A	AM
Boron, Total	ND		mg/l	0.030	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Cadmium, Total	ND		mg/l	0.00020	--	1	04/09/18 15:30	04/10/18 10:18	EPA 3005A	1,6020A	AM
Calcium, Total	10.8		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Chromium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Cobalt, Total	ND		mg/l	0.020	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Copper, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Iron, Total	3.20		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Lead, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Magnesium, Total	4.72		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Manganese, Total	0.035		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Mercury, Total	ND		mg/l	0.00020	--	1	04/09/18 11:15	04/10/18 20:33	EPA 7470A	1,7470A	EA
Molybdenum, Total	ND		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Nickel, Total	ND		mg/l	0.025	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Potassium, Total	ND		mg/l	2.50	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Selenium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Silicon, Total	11.4		mg/l	0.500	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Silver, Total	ND		mg/l	0.007	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Sodium, Total	12.6		mg/l	2.00	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Strontium, Total	0.048		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Sulfur, Total	4.51		mg/l	0.250	--	1	04/10/18 12:55	04/10/18 19:29	EPA 3015A	1,6010C	AB
Thallium, Total	ND		mg/l	0.00050	--	1	04/09/18 15:30	04/10/18 10:18	EPA 3005A	1,6020A	AM
Titanium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Vanadium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Zinc, Total	ND		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	46.5		mg/l	0.660	NA	1	04/09/18 15:30	04/11/18 19:00	EPA 3005A	1,6010C	LC
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	ND		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Antimony, Dissolved	ND		mg/l	0.00400	--	1	04/09/18 14:20	04/10/18 11:18	EPA 3005A	1,6020A	AM
Arsenic, Dissolved	0.008		mg/l	0.005	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Barium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Beryllium, Dissolved	ND		mg/l	0.00050	--	1	04/09/18 14:20	04/10/18 11:18	EPA 3005A	1,6020A	AM
Boron, Dissolved	ND		mg/l	0.030	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Cadmium, Dissolved	ND		mg/l	0.00020	--	1	04/09/18 14:20	04/10/18 11:18	EPA 3005A	1,6020A	AM
Calcium, Dissolved	10.1		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Chromium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Cobalt, Dissolved	ND		mg/l	0.020	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Copper, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Iron, Dissolved	3.00		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Lead, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Magnesium, Dissolved	4.20		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Manganese, Dissolved	0.033		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Mercury, Dissolved	ND		mg/l	0.00020	--	1	04/11/18 12:20	04/11/18 17:34	EPA 7470A	1,7470A	MG
Molybdenum, Dissolved	ND		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Nickel, Dissolved	ND		mg/l	0.025	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Potassium, Dissolved	ND		mg/l	2.50	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Selenium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Silicon, Dissolved	10.7		mg/l	0.500	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Silver, Dissolved	ND		mg/l	0.007	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Sodium, Dissolved	12.1		mg/l	2.00	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Strontium, Dissolved	0.051		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Thallium, Dissolved	ND		mg/l	0.00050	--	1	04/09/18 14:20	04/10/18 11:18	EPA 3005A	1,6020A	AM

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Titanium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Vanadium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC
Zinc, Dissolved	ND		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 09:55	EPA 3005A	1,6010C	LC

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Antimony, Total	ND		mg/l	0.00400	--	1	04/09/18 15:30	04/10/18 10:22	EPA 3005A	1,6020A	AM
Arsenic, Total	0.005		mg/l	0.005	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Barium, Total	0.023		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Beryllium, Total	ND		mg/l	0.00050	--	1	04/09/18 15:30	04/10/18 10:22	EPA 3005A	1,6020A	AM
Boron, Total	0.087		mg/l	0.030	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Cadmium, Total	ND		mg/l	0.00020	--	1	04/09/18 15:30	04/10/18 10:22	EPA 3005A	1,6020A	AM
Calcium, Total	21.0		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Chromium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Cobalt, Total	ND		mg/l	0.020	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Copper, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Iron, Total	1.51		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Lead, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Magnesium, Total	10.2		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Manganese, Total	0.029		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Mercury, Total	ND		mg/l	0.00020	--	1	04/09/18 11:15	04/10/18 20:35	EPA 7470A	1,7470A	EA
Molybdenum, Total	ND		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Nickel, Total	ND		mg/l	0.025	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Potassium, Total	6.58		mg/l	2.50	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Selenium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Silicon, Total	9.04		mg/l	0.500	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Silver, Total	ND		mg/l	0.007	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Sodium, Total	135		mg/l	2.00	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Strontium, Total	0.195		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Sulfur, Total	23.2		mg/l	0.250	--	1	04/10/18 12:55	04/10/18 18:43	EPA 3015A	1,6010C	AB
Thallium, Total	ND		mg/l	0.00050	--	1	04/09/18 15:30	04/10/18 10:22	EPA 3005A	1,6020A	AM
Titanium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Vanadium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Zinc, Total	0.059		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	94.5		mg/l	0.660	NA	1	04/09/18 15:30	04/11/18 19:05	EPA 3005A	1,6010C	LC
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	ND		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Antimony, Dissolved	ND		mg/l	0.00400	--	1	04/09/18 14:20	04/10/18 11:22	EPA 3005A	1,6020A	AM
Arsenic, Dissolved	ND		mg/l	0.005	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Barium, Dissolved	0.026		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Beryllium, Dissolved	ND		mg/l	0.00050	--	1	04/09/18 14:20	04/10/18 11:22	EPA 3005A	1,6020A	AM
Boron, Dissolved	0.081		mg/l	0.030	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Cadmium, Dissolved	ND		mg/l	0.00020	--	1	04/09/18 14:20	04/10/18 11:22	EPA 3005A	1,6020A	AM
Calcium, Dissolved	20.5		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Chromium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Cobalt, Dissolved	ND		mg/l	0.020	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Copper, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Iron, Dissolved	1.45		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Lead, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Magnesium, Dissolved	9.36		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Manganese, Dissolved	0.030		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Mercury, Dissolved	ND		mg/l	0.00020	--	1	04/11/18 12:20	04/11/18 17:39	EPA 7470A	1,7470A	MG
Molybdenum, Dissolved	ND		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Nickel, Dissolved	ND		mg/l	0.025	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Potassium, Dissolved	6.25		mg/l	2.50	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Selenium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Silicon, Dissolved	8.65		mg/l	0.500	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Silver, Dissolved	ND		mg/l	0.007	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Sodium, Dissolved	134		mg/l	2.00	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Strontium, Dissolved	0.218		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Thallium, Dissolved	ND		mg/l	0.00050	--	1	04/09/18 14:20	04/10/18 11:22	EPA 3005A	1,6020A	AM

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Titanium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Vanadium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC
Zinc, Dissolved	0.055		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 11:14	EPA 3005A	1,6010C	LC

Project Name: BELFAST WATER DISTRICT
Lab Number: L1812057
Project Number: 171.05027.003
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05
Client ID: SS-1
Sample Location: BELFAST, ME
Date Collected: 04/05/18 09:15
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	2.48	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Arsenic, Total	13.9		mg/kg	0.496	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Beryllium, Total	0.293		mg/kg	0.248	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Cadmium, Total	0.700		mg/kg	0.496	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Chromium, Total	15.7		mg/kg	0.496	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Copper, Total	36.3		mg/kg	0.496	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Lead, Total	263		mg/kg	2.48	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Mercury, Total	0.204		mg/kg	0.081	--	1	04/07/18 09:00	04/09/18 16:04	EPA 7471B	1,7471B	EA
Nickel, Total	22.8		mg/kg	1.24	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Selenium, Total	4.29		mg/kg	0.992	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Silver, Total	ND		mg/kg	0.496	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Thallium, Total	11.8		mg/kg	0.992	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE
Zinc, Total	66.5		mg/kg	2.48	--	1	04/07/18 07:20	04/07/18 13:18	EPA 3050B	1,6010C	PE

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 05 Batch: WG1104409-1										
Antimony, Total	ND		mg/kg	2.00	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Arsenic, Total	ND		mg/kg	0.400	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Beryllium, Total	ND		mg/kg	0.200	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Cadmium, Total	ND		mg/kg	0.400	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Chromium, Total	ND		mg/kg	0.400	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Copper, Total	ND		mg/kg	0.400	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Lead, Total	ND		mg/kg	2.00	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Nickel, Total	ND		mg/kg	1.00	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Selenium, Total	ND		mg/kg	0.800	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Silver, Total	ND		mg/kg	0.400	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Thallium, Total	ND		mg/kg	0.800	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE
Zinc, Total	ND		mg/kg	2.00	--	1	04/07/18 07:20	04/07/18 11:34	1,6010C	PE

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 05 Batch: WG1104410-1										
Mercury, Total	ND		mg/kg	0.083	--	1	04/07/18 09:00	04/09/18 15:27	1,7471B	EA

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1104756-1										
Mercury, Total	ND		mg/l	0.00020	--	1	04/09/18 11:15	04/10/18 20:11	1,7470A	EA

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1104824-1										
Aluminum, Dissolved	ND		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Arsenic, Dissolved	ND		mg/l	0.005	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Barium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Boron, Dissolved	ND		mg/l	0.030	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Calcium, Dissolved	ND		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Chromium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Cobalt, Dissolved	ND		mg/l	0.020	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Copper, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Iron, Dissolved	ND		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Lead, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Magnesium, Dissolved	ND		mg/l	0.100	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Manganese, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Molybdenum, Dissolved	ND		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Nickel, Dissolved	ND		mg/l	0.025	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Potassium, Dissolved	ND		mg/l	2.50	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Selenium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Silicon, Dissolved	ND		mg/l	0.500	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Silver, Dissolved	ND		mg/l	0.007	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Sodium, Dissolved	ND		mg/l	2.00	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Strontium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Titanium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Vanadium, Dissolved	ND		mg/l	0.010	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC
Zinc, Dissolved	ND		mg/l	0.050	--	1	04/09/18 14:20	04/10/18 09:46	1,6010C	LC

Prep Information

Digestion Method: EPA 3005A

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1104839-1										
Antimony, Dissolved	ND		mg/l	0.00400	--	1	04/09/18 14:20	04/10/18 10:54	1,6020A	AM
Beryllium, Dissolved	ND		mg/l	0.00050	--	1	04/09/18 14:20	04/10/18 10:54	1,6020A	AM
Cadmium, Dissolved	ND		mg/l	0.00020	--	1	04/09/18 14:20	04/10/18 10:54	1,6020A	AM
Thallium, Dissolved	ND		mg/l	0.00050	--	1	04/09/18 14:20	04/10/18 10:54	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1104843-1										
Antimony, Total	ND		mg/l	0.00400	--	1	04/09/18 15:30	04/10/18 09:17	1,6020A	AM
Beryllium, Total	ND		mg/l	0.00050	--	1	04/09/18 15:30	04/10/18 09:17	1,6020A	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	04/09/18 15:30	04/10/18 09:17	1,6020A	AM
Thallium, Total	ND		mg/l	0.00050	--	1	04/09/18 15:30	04/10/18 09:17	1,6020A	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1105073-1										
Sulfur, Total	ND		mg/l	0.250	--	1	04/10/18 12:55	04/10/18 18:39	1,6010C	AB

Prep Information

Digestion Method: EPA 3015A

Project Name: BELFAST WATER DISTRICT **Lab Number:** L1812057

Project Number: 171.05027.003 **Report Date:** 04/13/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1105166-1										
Aluminum, Total	ND		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Arsenic, Total	ND		mg/l	0.005	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Barium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Boron, Total	ND		mg/l	0.030	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Calcium, Total	ND		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Chromium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Cobalt, Total	ND		mg/l	0.020	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Copper, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Iron, Total	0.081		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Lead, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Magnesium, Total	ND		mg/l	0.100	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Manganese, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Molybdenum, Total	ND		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Nickel, Total	ND		mg/l	0.025	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Potassium, Total	ND		mg/l	2.50	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Selenium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Silicon, Total	ND		mg/l	0.500	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Silver, Total	ND		mg/l	0.007	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Sodium, Total	ND		mg/l	2.00	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Strontium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Titanium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Vanadium, Total	ND		mg/l	0.010	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC
Zinc, Total	ND		mg/l	0.050	--	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01,03 Batch: WG1105166-1										
Hardness	ND		mg/l	0.660	NA	1	04/09/18 15:30	04/11/18 17:50	1,6010C	LC

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1105586-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	04/11/18 12:20	04/11/18 17:30	1,7470A	MG

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 05 Batch: WG1104409-2 SRM Lot Number: D098-540								
Antimony, Total	140		-		6-194	-		
Arsenic, Total	93		-		83-117	-		
Beryllium, Total	87		-		83-117	-		
Cadmium, Total	90		-		82-117	-		
Chromium, Total	89		-		83-119	-		
Copper, Total	89		-		84-116	-		
Lead, Total	85		-		82-117	-		
Nickel, Total	88		-		82-117	-		
Selenium, Total	92		-		78-121	-		
Silver, Total	97		-		80-120	-		
Thallium, Total	89		-		80-119	-		
Zinc, Total	87		-		81-119	-		
Total Metals - Mansfield Lab Associated sample(s): 05 Batch: WG1104410-2 SRM Lot Number: D098-540								
Mercury, Total	115		-		50-149	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1104756-2								
Mercury, Total	90		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1104824-2					
Aluminum, Dissolved	104	-	80-120	-	
Arsenic, Dissolved	106	-	80-120	-	
Barium, Dissolved	98	-	80-120	-	
Boron, Dissolved	103	-	80-120	-	
Calcium, Dissolved	100	-	80-120	-	
Chromium, Dissolved	102	-	80-120	-	
Cobalt, Dissolved	95	-	80-120	-	
Copper, Dissolved	99	-	80-120	-	
Iron, Dissolved	101	-	80-120	-	
Lead, Dissolved	101	-	80-120	-	
Magnesium, Dissolved	95	-	80-120	-	
Manganese, Dissolved	99	-	80-120	-	
Molybdenum, Dissolved	94	-	80-120	-	
Nickel, Dissolved	96	-	80-120	-	
Potassium, Dissolved	95	-	80-120	-	
Selenium, Dissolved	112	-	80-120	-	
Silicon, Dissolved	105	-	80-120	-	
Silver, Dissolved	100	-	80-120	-	
Sodium, Dissolved	101	-	80-120	-	
Strontium, Dissolved	104	-	80-120	-	
Titanium, Dissolved	99	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1104824-2					
Vanadium, Dissolved	103	-	80-120	-	
Zinc, Dissolved	100	-	80-120	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1104839-2					
Antimony, Dissolved	99	-	80-120	-	
Beryllium, Dissolved	105	-	80-120	-	
Cadmium, Dissolved	108	-	80-120	-	
Thallium, Dissolved	99	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1104843-2					
Antimony, Total	108	-	80-120	-	
Beryllium, Total	107	-	80-120	-	
Cadmium, Total	112	-	80-120	-	
Thallium, Total	104	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1105073-2					
Sulfur, Total	115	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery		LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1105166-2						
Aluminum, Total	114		-	80-120	-	
Arsenic, Total	115		-	80-120	-	
Barium, Total	102		-	80-120	-	
Boron, Total	110		-	80-120	-	
Calcium, Total	109		-	80-120	-	
Chromium, Total	106		-	80-120	-	
Cobalt, Total	104		-	80-120	-	
Copper, Total	102		-	80-120	-	
Iron, Total	111		-	80-120	-	
Lead, Total	98		-	80-120	-	
Magnesium, Total	108		-	80-120	-	
Manganese, Total	104		-	80-120	-	
Molybdenum, Total	90		-	80-120	-	
Nickel, Total	104		-	80-120	-	
Potassium, Total	104		-	80-120	-	
Selenium, Total	**123**	Q	-	80-120	-	
Silicon, Total	84		-	80-120	-	
Silver, Total	107		-	80-120	-	
Sodium, Total	107		-	80-120	-	
Strontium, Total	100		-	80-120	-	
Titanium, Total	104		-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1105166-2					
Vanadium, Total	105	-	80-120	-	
Zinc, Total	109	-	80-120	-	
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01,03 Batch: WG1105166-2					
Hardness	108	-	80-120	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1105586-2					
Mercury, Dissolved	102	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1104824-3 QC Sample: L1812057-01 Client ID: GWW-101												
Aluminum, Dissolved	ND	2	2.12	106		-	-		75-125	-		20
Arsenic, Dissolved	0.008	0.12	0.132	103		-	-		75-125	-		20
Barium, Dissolved	ND	2	1.97	98		-	-		75-125	-		20
Boron, Dissolved	ND	1	1.05	105		-	-		75-125	-		20
Calcium, Dissolved	10.1	10	19.8	97		-	-		75-125	-		20
Chromium, Dissolved	ND	0.2	0.204	102		-	-		75-125	-		20
Cobalt, Dissolved	ND	0.5	0.476	95		-	-		75-125	-		20
Copper, Dissolved	ND	0.25	0.252	101		-	-		75-125	-		20
Iron, Dissolved	3.00	1	3.95	95		-	-		75-125	-		20
Lead, Dissolved	ND	0.51	0.514	101		-	-		75-125	-		20
Magnesium, Dissolved	4.20	10	13.6	94		-	-		75-125	-		20
Manganese, Dissolved	0.033	0.5	0.526	98		-	-		75-125	-		20
Molybdenum, Dissolved	ND	1	0.940	94		-	-		75-125	-		20
Nickel, Dissolved	ND	0.5	0.477	95		-	-		75-125	-		20
Potassium, Dissolved	ND	10	11.6	116		-	-		75-125	-		20
Selenium, Dissolved	ND	0.12	0.131	109		-	-		75-125	-		20
Silicon, Dissolved	10.7	1	11.5	80		-	-		75-125	-		20
Silver, Dissolved	ND	0.05	0.050	100		-	-		75-125	-		20
Sodium, Dissolved	12.1	10	22.0	99		-	-		75-125	-		20
Strontium, Dissolved	0.051	1	1.09	104		-	-		75-125	-		20
Titanium, Dissolved	ND	1	0.991	99		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1104824-3 QC Sample: L1812057-01 Client ID: GWW-101										
Vanadium, Dissolved	ND	0.5	0.519	104		-	-	75-125	-	20
Zinc, Dissolved	ND	0.5	0.532	106		-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1104839-3 QC Sample: L1812057-01 Client ID: GWW-101										
Antimony, Dissolved	ND	0.5	0.5680	114		-	-	75-125	-	20
Beryllium, Dissolved	ND	0.05	0.05356	107		-	-	75-125	-	20
Cadmium, Dissolved	ND	0.051	0.05627	110		-	-	75-125	-	20
Thallium, Dissolved	ND	0.12	0.1210	101		-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1105073-3 QC Sample: L1812057-03 Client ID: GWW-103										
Sulfur, Total	23.2	0.5	23.3	**20**	Q	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1105586-3 QC Sample: L1812057-01 Client ID: GWW-101										
Mercury, Dissolved	ND	0.005	0.00480	96		-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1104824-4 QC Sample: L1812057-01 Client ID: GWW-101						
Aluminum, Dissolved	ND	ND	mg/l	NC		20
Arsenic, Dissolved	0.008	0.008	mg/l	2		20
Barium, Dissolved	ND	ND	mg/l	NC		20
Boron, Dissolved	ND	ND	mg/l	NC		20
Calcium, Dissolved	10.1	10.1	mg/l	0		20
Chromium, Dissolved	ND	ND	mg/l	NC		20
Cobalt, Dissolved	ND	ND	mg/l	NC		20
Copper, Dissolved	ND	ND	mg/l	NC		20
Iron, Dissolved	3.00	3.01	mg/l	0		20
Lead, Dissolved	ND	ND	mg/l	NC		20
Magnesium, Dissolved	4.20	4.25	mg/l	1		20
Manganese, Dissolved	0.033	0.034	mg/l	2		20
Molybdenum, Dissolved	ND	ND	mg/l	NC		20
Nickel, Dissolved	ND	ND	mg/l	NC		20
Potassium, Dissolved	ND	ND	mg/l	NC		20
Selenium, Dissolved	ND	ND	mg/l	NC		20
Silicon, Dissolved	10.7	10.7	mg/l	0		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Sodium, Dissolved	12.1	12.1	mg/l	0		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1104824-4 QC Sample: L1812057-01 Client ID: GWW-101					
Strontium, Dissolved	0.051	0.051	mg/l	0	20
Titanium, Dissolved	ND	ND	mg/l	NC	20
Vanadium, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	ND	ND	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1104839-4 QC Sample: L1812057-01 Client ID: GWW-101					
Antimony, Dissolved	ND	ND	mg/l	NC	20
Beryllium, Dissolved	ND	ND	mg/l	NC	20
Cadmium, Dissolved	ND	ND	mg/l	NC	20
Thallium, Dissolved	ND	ND	mg/l	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1105073-4 QC Sample: L1812057-03 Client ID: GWW-103					
Sulfur, Total	23.2	23.2	mg/l	0	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1105586-4 QC Sample: L1812057-01 Client ID: GWW-101					
Mercury, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-01
Client ID: GWW-101
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:15
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
UV Absorbance @ 254nm	0.023		Abs/cm	0.005	NA	1	-	04/07/18 06:10	121,5910B	GD
Alkalinity, Total	54.9		mg CaCO3/L	2.00	NA	1	-	04/10/18 09:33	121,2320B	BR
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/09/18 13:45	121,2540D	DW
Phosphorus, Total	0.122		mg/l	0.010	--	1	04/09/18 12:40	04/10/18 09:37	121,4500P-E	SD
Phosphorus, Soluble	0.125		mg/l	0.010	--	1	04/11/18 11:45	04/12/18 11:10	121,4500P-E	SD

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-03
Client ID: GWW-103
Sample Location: BELFAST, ME
Sample Depth:
Matrix: Water

Date Collected: 04/05/18 08:45
Date Received: 04/06/18
Field Prep: Field Filtered (Dissolved Metals & Phosphorus)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
UV Absorbance @ 254nm	0.011		Abs/cm	0.005	NA	1	-	04/07/18 06:10	121,5910B	GD
Alkalinity, Total	116.		mg CaCO3/L	2.00	NA	1	-	04/10/18 09:33	121,2320B	BR
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/09/18 13:45	121,2540D	DW
Phosphorus, Total	0.048		mg/l	0.010	--	1	04/09/18 12:40	04/10/18 09:38	121,4500P-E	SD
Phosphorus, Soluble	0.049		mg/l	0.010	--	1	04/11/18 11:45	04/12/18 11:11	121,4500P-E	SD

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-05
Client ID: SS-1
Sample Location: BELFAST, ME

Date Collected: 04/05/18 09:15
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.1		%	0.100	NA	1	-	04/07/18 13:53	121,2540G	RI

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

SAMPLE RESULTS

Lab ID: L1812057-06
Client ID: SS-2
Sample Location: BELFAST, ME

Date Collected: 04/05/18 11:30
Date Received: 04/06/18
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	73.2		%	0.100	NA	1	-	04/11/18 11:10	121,2540G	RI

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003
Lab Number: L1812057
Report Date: 04/13/18

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG1104402-1										
UV Absorbance @ 254nm	ND		Abs/cm	0.005	NA	1	-	04/07/18 06:10	121,5910B	GD
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG1104700-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	04/09/18 13:45	121,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG1104782-1										
Phosphorus, Total	ND		mg/l	0.010	--	1	04/09/18 12:40	04/10/18 09:11	121,4500P-E	SD
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG1105083-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	04/10/18 09:33	121,2320B	BR
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG1105479-1										
Phosphorus, Soluble	ND		mg/l	0.010	--	1	04/11/18 11:45	04/12/18 10:58	121,4500P-E	SD

Lab Control Sample Analysis

Batch Quality Control

Project Name: BELFAST WATER DISTRICT

Project Number: 171.05027.003

Lab Number: L1812057

Report Date: 04/13/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG1104402-2								
UV Absorbance @ 254nm	100		-			-		
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG1104782-2								
Phosphorus, Total	99		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG1105083-2								
Alkalinity, Total	103		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG1105479-2								
Phosphorus, Soluble	102		-		80-120	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG1104402-3 QC Sample: L1812057-03 Client ID: GWW-103						
UV Absorbance @ 254nm	0.011	0.010	Abs/cm	10		
General Chemistry - Westborough Lab Associated sample(s): 05 QC Batch ID: WG1104512-1 QC Sample: L1812057-05 Client ID: SS-1						
Solids, Total	78.1	79.0	%	1		20

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1812057-01A	Vial HCl preserved	A	NA		2.8	Y	Absent		ME-8260(14)
L1812057-01B	Vial HCl preserved	A	NA		2.8	Y	Absent		ME-8260(14)
L1812057-01C	Vial HCl preserved	A	NA		2.8	Y	Absent		ME-8260(14)
L1812057-01D	Plastic 250ml unpreserved/No Headspace	A	NA		2.8	Y	Absent		ALK-T-2320(14)
L1812057-01E	Plastic 250ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		SPHOS-4500(28)
L1812057-01F	Plastic 250ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		TPHOS-4500(28)
L1812057-01G	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		B-SI(180),PB-SI(180),FE-SI(180),BA-SI(180),BE-6020S(180),TI-SI(180),AG-SI(180),AS-SI(180),CU-SI(180),MN-SI(180),NA-SI(180),NI-SI(180),AL-SI(180),CO-SI(180),SI-SI(180),SR-SI(180),TL-6020S(180),CR-SI(180),K-SI(180),MG-SI(180),MO-SI(180),SB-6020S(180),CA-SI(180),CD-6020S(180),HG-S(28),SE-SI(180),V-SI(180),ZN-SI(180)
L1812057-01H	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		TL-6020T(180),AS-TI(180),BA-TI(180),AG-TI(180),SI-TI(180),AL-TI(180),B-TI(180),CR-TI(180),MO-TI(180),NI-TI(180),S-TI(180),BE-6020T(180),CU-TI(180),PB-TI(180),SE-TI(180),TI-TI(180),ZN-TI(180),CO-TI(180),SB-6020T(180),V-TI(180),CD-6020T(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),SR-TI(180),CA-TI(180),HARDT(180),K-TI(180),NA-TI(180)
L1812057-01I	Amber 500ml unpreserved	A	7	7	2.8	Y	Absent		UV-254(2)
L1812057-01J	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		TSS-2540(7)
L1812057-01K	Amber 1000ml unpreserved	A	7	7	2.8	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1812057-01L	Amber 1000ml unpreserved	A	7	7	2.8	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1812057-02A	Plastic 250ml unpreserved/No Headspace	A	NA		2.8	Y	Absent		HOLD-WETCHEM()

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1812057-03A	Vial HCl preserved	A	NA		2.8	Y	Absent		ME-8260(14)
L1812057-03B	Vial HCl preserved	A	NA		2.8	Y	Absent		ME-8260(14)
L1812057-03C	Vial HCl preserved	A	NA		2.8	Y	Absent		ME-8260(14)
L1812057-03D	Plastic 250ml unpreserved/No Headspace	A	NA		2.8	Y	Absent		ALK-T-2320(14)
L1812057-03E	Plastic 250ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		SPHOS-4500(28)
L1812057-03F	Plastic 250ml H2SO4 preserved	A	<2	<2	2.8	Y	Absent		TPHOS-4500(28)
L1812057-03G	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		B-SI(180),PB-SI(180),FE-SI(180),BA-SI(180),BE-6020S(180),TI-SI(180),AG-SI(180),AS-SI(180),CU-SI(180),MN-SI(180),NA-SI(180),NI-SI(180),AL-SI(180),CO-SI(180),SI-SI(180),SR-SI(180),TL-6020S(180),CR-SI(180),K-SI(180),MG-SI(180),MO-SI(180),SB-6020S(180),CA-SI(180),CD-6020S(180),HG-S(28),SE-SI(180),V-SI(180),ZN-SI(180)
L1812057-03H	Plastic 250ml HNO3 preserved	A	<2	<2	2.8	Y	Absent		TL-6020T(180),AS-TI(180),BA-TI(180),AG-TI(180),SI-TI(180),AL-TI(180),B-TI(180),CR-TI(180),MO-TI(180),NI-TI(180),S-TI(180),BE-6020T(180),CU-TI(180),PB-TI(180),SE-TI(180),TI-TI(180),ZN-TI(180),CO-TI(180),SB-6020T(180),V-TI(180),CD-6020T(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),SR-TI(180),CA-TI(180),HARDT(180),K-TI(180),NA-TI(180)
L1812057-03I	Amber 500ml unpreserved	A	7	7	2.8	Y	Absent		UV-254(2)
L1812057-03J	Plastic 950ml unpreserved	A	7	7	2.8	Y	Absent		TSS-2540(7)
L1812057-03K	Amber 1000ml unpreserved	A	7	7	2.8	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1812057-03L	Amber 1000ml unpreserved	A	7	7	2.8	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1812057-04A	Plastic 250ml unpreserved/No Headspace	A	NA		2.8	Y	Absent		HOLD-WETCHEM()
L1812057-05A	Vial MeOH preserved	C	NA		4.2	Y	Absent		8260HLW(14)
L1812057-05B	Vial water preserved	C	NA		4.2	Y	Absent	06-APR-18 12:00	8260HLW(14)
L1812057-05C	Vial water preserved	C	NA		4.2	Y	Absent	06-APR-18 12:00	8260HLW(14)
L1812057-05D	Plastic 2oz unpreserved for TS	C	NA		4.2	Y	Absent		ME-TS-2540(7)
L1812057-05E	Metals Only-Glass 60mL/2oz unpreserved	C	NA		4.2	Y	Absent		BE-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),HG-T(28),CD-TI(180)
L1812057-05F	Glass 250ml/8oz unpreserved	C	NA		4.2	Y	Absent		8270TCL(14)

*Values in parentheses indicate holding time in days

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1812057-06A	Vial MeOH preserved	C	NA		4.2	Y	Absent		HOLD-8260HLW(14)
L1812057-06B	Vial water preserved	C	NA		4.2	Y	Absent	06-APR-18 12:00	HOLD-8260HLW(14)
L1812057-06C	Vial water preserved	C	NA		4.2	Y	Absent	06-APR-18 12:00	HOLD-8260HLW(14)
L1812057-06D	Plastic 2oz unpreserved for TS	C	NA		4.2	Y	Absent		HOLD-WETCHEM(),ME-TS-2540(7)
L1812057-06E	Glass 60mL/2oz unpreserved	C	NA		4.2	Y	Absent		HOLD-METAL(180)
L1812057-06F	Glass 250ml/8oz unpreserved	C	NA		4.2	Y	Absent		8270TCL-PAH(14)
L1812057-07A	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-07B	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-07C	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-07D	Plastic 250ml unpreserved/No Headspace	B	NA		2.4	Y	Absent		HOLD-WETCHEM()
L1812057-07E	Plastic 250ml unpreserved/No Headspace	B	NA		2.4	Y	Absent		HOLD-WETCHEM()
L1812057-07F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-07G	Plastic 250ml H2SO4 preserved	B	<2	<2	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-07H	Plastic 250ml HNO3 preserved	B	<2	<2	2.4	Y	Absent		HOLD-METAL-DISSOLVED(180)
L1812057-07I	Plastic 250ml HNO3 preserved	B	<2	<2	2.4	Y	Absent		HOLD-METAL-TOTAL(180)
L1812057-07J	Amber 500ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-WETCHEM(),PEST-8081(7)
L1812057-07K	Plastic 950ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-07L	Amber 1000ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-8270(7)
L1812057-07M	Amber 1000ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-8270(7)
L1812057-08A	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-08B	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-08C	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-08D	Plastic 250ml unpreserved/No Headspace	B	NA		2.4	Y	Absent		HOLD-WETCHEM()
L1812057-08E	Plastic 250ml unpreserved/No Headspace	B	NA		2.4	Y	Absent		HOLD-WETCHEM()
L1812057-08F	Plastic 250ml H2SO4 preserved	B	<2	<2	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-08G	Plastic 250ml H2SO4 preserved	B	<2	<2	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-08H	Plastic 250ml HNO3 preserved	B	<2	<2	2.4	Y	Absent		HOLD-METAL-DISSOLVED(180)
L1812057-08I	Plastic 250ml HNO3 preserved	B	<2	<2	2.4	Y	Absent		HOLD-METAL-TOTAL(180)

*Values in parentheses indicate holding time in days

Project Name: BELFAST WATER DISTRICT
Project Number: 171.05027.003

Lab Number: L1812057
Report Date: 04/13/18

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1812057-08J	Amber 500ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-08K	Plastic 950ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-WETCHEM()
L1812057-08L	Amber 1000ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-8270(7)
L1812057-08M	Amber 1000ml unpreserved	B	7	7	2.4	Y	Absent		HOLD-8270(7)
L1812057-09A	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-09B	Vial HCl preserved	B	NA		2.4	Y	Absent		HOLD-8260(14)
L1812057-09C	Vial HCl preserved	A	NA		2.8	Y	Absent		HOLD-8260(14)
L1812057-09D	Vial HCl preserved	A	NA		2.8	Y	Absent		HOLD-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	BELFAST WATER DISTRICT	**Lab Number:**	L1812057
Project Number:	171.05027.003	**Report Date:**	04/13/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	BELFAST WATER DISTRICT	**Lab Number:**	L1812057
Project Number:	171.05027.003	**Report Date:**	04/13/18

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	BELFAST WATER DISTRICT	**Lab Number:**	L1812057
Project Number:	171.05027.003	**Report Date:**	04/13/18

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Be, Cd, Cr, Cu, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

3 coolers

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 4/6/18

ALPHA Job #: L1812057

Client Information

Client: Ransom Consulting Inc.
Address: 112 Corporate Drive, Portsmouth, NH 03801
Phone: 603-436-1490
Email: elizabeth.ransom@ransomenv.com
cc: drew.fuchs@ransomenv.com

Project Information

Project Name: Belfast Water District
Project Location: Belfast, ME
Project #: 171.05027.003
Project Manager: Elizabeth Ransom
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #: 10754

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☑ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:
1. Dissolved metals & dissolved phosphorus were field filtered.
2. low level VOC samples for SS-1 & SS-2 were frozen 4/6/18@12:00.

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2 | SVOC: ☒ ABN ☒ PAH 8270 | TAL Metals (Total & Dissolved) | Phosphorus (Total & Dissolved) | TPH: ☐ Quant Only ☐ Fingerprint | Total Sulfur | Boron, Molybdenum, Silicon, Strontium (Total & Dissolved) | Alkalinity & Hardness | Total Suspended Solids | UV Absorbance | Total PP13 Metals | Color/Turbidity/Dissolved CO2

SAMPLE INFO: Filtration ☒ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	PAH	TAL Metals	Phosphorus	TPH	Total Sulfur	Boron, Molybdenum, Silicon, Strontium	Alkalinity & Hardness	Total Suspended Solids	UV Absorbance	Total PP13 Metals	Color/Turbidity/Dissolved CO2	Sample Comments	TOTAL # BOTTLES
12057-01	GWW-101 DAF 4/6/18	4/5/18	8:15	GW	DAF	X	X	X	X		X		X	X	X	X			Field filtered dissolved metals + Phos	11
-02	[redacted] GWW-101	4/5/18	8:15	GW	DAF												X		HOLD	2
-03	GWW-103	4/5/18	8:45	GW	DAF	X	X	X	X		X		X	X	X	X			Field filtered dissolved metals + Phos	11
-04	GWW-103	4/5/18	8:45	GW	DAF												X		HOLD	2
-05	SS-1	4/5/18	9:15	Soil	DAF	X	X									X			low level VOCs frozen 4/6/18@12:00	6
	[redacted] DAF 4/6/18																			
-06	SS-2	4/5/18	11:30	Soil	DAF														HOLD ALL	6 frozen DAF
-07	GWW-101	4/4/18	8:30	GW	DAF														HOLD ALL	13
-08	GWW-103	4/4/18	9:15	GW	DAF														HOLD ALL	13
-09	Trip Blank					X													HOLD	2

Container Type	V	A	P	P	P		P		P	P	P	P	A	P/A	
Preservative	B/F	A	C	D	C		C		C	A	A	A	N	A	

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H= $Na_2S_2O_3$, I= Ascorbic Acid, J= NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	4/6/18 16:30	[signature]	4/6/18 16:[illegible]
[signature] AAL	4/6/18	[signature] AAL	4/6/18 1750
[signature]	4/6/18 1930	[signature]	4/6/18 1932

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ATTACHMENT G

Responses to Stormwater Management Technical Review Memorandum

Response to Review Comments
Nordic Aquafarms Inc., Land-based Aquaculture Facility
Belfast, Maine
L-28319-26-A-N

Ransom Consulting, Inc.
Project 171.05027.008