

## **Maine Aquaculture Water Quality Summary Belfast Bay Belfast, Maine**

**Submitted By**  
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Project No. 23631.001

Elizabeth Ransom  
Ransom Environmental  
Pease International Tradeport  
112 Corporate Drive  
Portsmouth, NH 03801

Electronically sent via email to [elizabeth.ransom@ransomenv.com](mailto:elizabeth.ransom@ransomenv.com) and [drew.fuchs@ransomenv.com](mailto:drew.fuchs@ransomenv.com)

Re: Water Quality Summary  
Belfast Bay  
Belfast, Maine

Dear Ms. Ransom:

Normandeau Associates, Inc. (Normandeau) is pleased to present the results of water quality sampling conducted in Belfast Bay at the proposed Nordic Aquaculture facility intake and discharge locations. Site visits were completed on August 23, 2018 and August 24, 2018 and again on September 7, 2018 consistent with our proposed scopes of work. Water quality data were collected by discrete depth samples submitted for laboratory analysis of multiple parameters as well as in-situ measurements with a YSI water quality data sonde. Samples and measurements were collected from the two proposed intake stations on August 23-24 and from the two proposed discharge stations on September 7. An additional water sample was also collected on September 7 and submitted for laboratory analysis from a location on the Little River below the lower reservoir dam. This report presents our methods for data collection, sampling locations, and results summaries. Original laboratory reports can be provided upon request.

Thank you for the opportunity to work with you on this important project, please let me know if you have any questions or wish to discuss this further.

Sincerely,

Normandeau Associates, Inc.



Joel M Detty  
Project Manager

## Introduction and Methods

Water quality data were collected in Belfast Bay at the proposed Nordic Aquaculture facility intake and discharge locations on August 23-24, 2018 and September 7, 2018. Samples and in-situ measurements were collected from two intake stations and two discharge stations along the proposed submerged intake/discharge pipe route Options 1 and 2A. Samples and in-situ measurements were collected at low tide and high tide at each station and consisted of water column profile measurements using a YSI 6920 water quality data sonde and water sample collection for laboratory analysis. Water samples were collected at discrete depths using a Kemmerer water sampler. Intake location samples were collected August 23-24, 2018 and discharge location samples were collected on September 7, 2018. A single water sample was also collected from the Little River below the lower reservoir dam at low tide on September 7, 2018.

A YSI 6920 multiparameter data sonde was used to record water quality profile readings and was calibrated before and after each sampling event as per manufacturer recommendations. A Kemmerer water sampler was used for collection of water samples and was cleaned with distilled water between each sample as per standard protocol for water quality sampling. As the Kemmerer sampler was unable to collect sufficient sample volume to fill all sample bottles with a single “grab”, multiple samples had to be collected from each depth and composited in a clean plastic compositing container. Once the container was full, it was distributed into the individual sample containers which were then preserved and stored as per laboratory instructions. The compositing container was reused for all samples and was cleaned using the same protocol as the Kemmerer water sampler. Nitrile gloves were used during sample collection and were changed after each sample. Laboratory samples were transferred to Alpha Analytical Laboratory in Portsmouth, NH at the end of each sample day within the recommended hold times for all analytes.

Garmin and Trimble GPS units were used to navigate to each station and to mark the location where data collection occurred.

## Intake Stations

Two intake stations, Station 1 (intake/discharge pipe Option 1) and Station 2 (intake/discharge pipe Option 2A) were located at the terminus of the proposed pipe routes (See Figure 1). Water quality data was collected from both stations on August 23, 2018 during low tide and on August 24, 2018 at high tide. Before water quality data could be collected, a depth of at least 55 ft. was required at each station. During high tide, a depth of 56 feet was reached at both stations; however, during the low tide samples the observed depth at both stations was approximately 50 ft. Once anchored on station for sampling, a GPS point was recorded to mark the sampling location.

## Water Quality Profile Readings

Water quality profile readings were recorded during low tide at Station 2 on August 23, 2018 at 14:36 and at Station 1 at 15:31. The predicted low tide in Belfast Bay on August 23, 2018 was at 15:48. High tide water quality profiles were recorded at Station 2 on August 24, 2018 at 10:00 and at 11:35 at Station 1. The predicted high tide in Belfast Bay on August 24, 2018 was at 10:35. A duplicate reading was also taken at Station 2 at 10:21 as quality control field duplicate. The duplicate reading consisted

of restarting the YSI after the initial profile reading then repeating the standard water quality profile procedure to perform a duplicate measurement. Profile readings were recorded beginning at 0.5 meters below the surface of the water and then repeated every meter down through the profile where the following parameters were recorded: Temperature, Turbidity, pH, Depth, Dissolved oxygen (mg/L and % saturation), Salinity (not recorded on August 23), and Specific Conductance. At both Station 1 and 2 during low tide, YSI readings were recorded to a depth of 15 meters and during high tide to a depth of 17 meters. YSI profile readings for both intake stations are presented in Tables 1 and 2.

### Sample Collection

After water quality profiles were complete, water samples were collected for laboratory analysis. Using a Kemmerer water sampler, a total of four samples were collected throughout the water column at each station. In addition, one field duplicate sample was collected as a quality control. At both stations, the upper samples were collected at a depth of 0.5 meters and the bottom samples were collected approximately 10 feet (3 meters) above the bed surface with two samples collected at equal intervals in between the upper and lower samples. During low tide on August 23, 2018 (predicted low tide at 15:48), samples were collected at 14:59 from Station 2 and at 16:00 from Station 1 at the following depths: 0.5 meters, 4.0 meters, 8.0 meters, and 12 meters. During high tide on August 24, 2018 (predicted high tide at 10:35), samples were collected at 10:59 from Station 2 and at 12:00 from Station 1 at the following depths: 0.5 meters, 4.0 meters, 8.0 meters, and 12 meters. A duplicate sample was collected at Station 2 at 5.0 meters. Samples were analyzed for total suspended solids, nitrogen-ammonia, nitrogen-nitrate/nitrite, total nitrogen, nitrogen-TKN, total phosphorus, chemical oxygen demand and BOD 5-day. Sample collection data and results for both intake stations are presented in Tables 4 and 5.

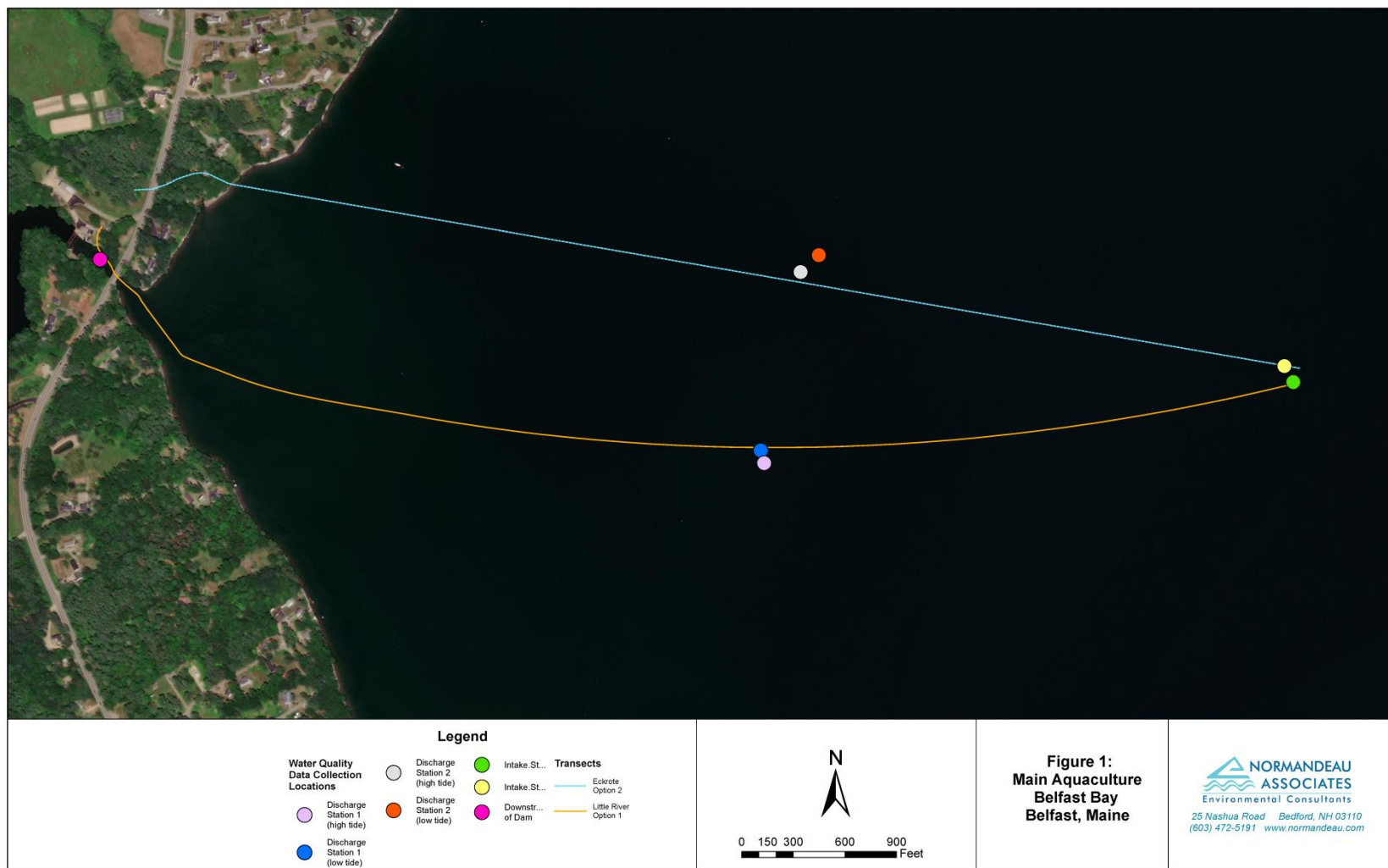


Figure 1. Sampling stations map

## Discharge Stations

Two discharge stations, Station 1 (intake/discharge pipe Option 1) and Station 2 (intake/discharge pipe Option 2A) were located along the proposed pipe routes (See Figure 1) closer to shore and in shallower water than the intake stations. Water quality data were collected from both discharge stations on September 7, 2018 during low and high tide conditions. Before water quality data could be collected at high tide, a depth of at least 40 feet was required at each station and 30 feet at each station during low tide. During high tide, a depth of 42 feet was measured at Station 1 and 44 feet at Station 2, while at low tide a depth of 32 feet was measured at Station 1 and 35 feet at Station 2. Once anchored on station, a GPS point was recorded to mark the sampling location. For the discharge stations, 4 GPS points were recorded to mark the sampling locations – i.e. 1 point for each station at high tide and low tide (See Figure 1).

## Water Quality Profile Readings

Water quality profile readings were recorded during high tide on September 7, 2018 at Station 1 at 9:00 and at Station 2 at 11:16. The predicted high tide in Belfast Bay on September 7, 2018 was at 9:12. Before water quality profiles were recorded at Station 1, the dissolved oxygen probe was replaced due to an equipment failure and the YSI meter was recalibrated. During low tide on September 7, 2018, YSI profile readings were recorded at Station 1 at 14:39 and at 15:42 at Station 2. The predicted low tide in Belfast Bay on August 23, 2018 was at 15:14. A field duplicate reading was also taken at Station 1 at 14:52. As mentioned previously, this was done by restarting the YSI sonde after the initial profile reading and completing a second duplicate reading following the same standard procedure. Profile readings were recorded beginning at 0.5 meters below the surface of the water and then repeated every meter down through the water column with the following parameters measured and recorded: Temperature, Turbidity, pH, Depth, Dissolved oxygen (mg/L and % saturation), Salinity, Specific Conductance. At Station 1 during high tide, YSI readings were recorded to a bottom depth of 13 meters and during low tide to a bottom depth of 9 meters while at Station 2, readings were recorded to a bottom depth of 14 meters during high tide and 11 meters during low tide. Water quality profile readings for both intake stations are presented in Table 3.

## Sample Collection

After water quality profiles were complete, water samples were collected for laboratory analysis. Using a Kemmerer water sampler, a total of four samples were collected throughout the water column at each station. In addition, one field duplicate sample was collected as a quality control. At both stations, the upper samples were collected at a depth of 0.5 meters and the bottom samples were collected approximately 10 feet (3 meters) from the bed surface with two samples collected at equal intervals in between the upper and lower samples. During high tide on September 7, 2018 (predicted high tide at 9:12), samples were collected at 9:42 from Station 1 and at 11:35 from Station 2 at the following depths: 0.5 meters, 4.0 meters, 7.0 meters, and 10.0 meters. During low tide on September 7, 2018 (predicted low tide at 15:14), samples were collected at 15:08 from Station 1 and at 16:11 from Station 2 at the following depths: 0.5 meters, 3.0 meters, 5.0 meters, and 7.0 meters. A duplicate

sample was collected at Station 1 at 5.0 meters. Samples were analyzed for total suspended solids, nitrogen-ammonia, nitrogen-nitrate/nitrite, total nitrogen, nitrogen-TKN, total phosphorus, chemical oxygen demand and BOD 5-day. Sample collection data and results for both discharge stations are presented in Table 6.

#### **Little River Sample**

One sample was collected from the Little River immediately below the lower reservoir dam located off Route 1 during ebb conditions at 13:26 on September 7, 2018 (predicted low tide was at 15:14). The sample was collected approximately 50 feet downstream from the dam in a small channel of running water flowing towards Belfast Bay. As it was an ebbing tide, there did not appear to be any inflow from the bay. The sample was analyzed for nitrogen-nitrate/nitrite, total nitrogen, nitrogen-TKN, and total phosphorus. These results are presented in Table 6.



**Table 1. Summary of Water Quality Readings Taken at Intake Locations on August 23, 2018 in Belfast Bay, Belfast, Maine**

<b>STATION 1</b>	<b><u>Temperature</u></b> (°C)	<b><u>Specific</u> <u>Conductivity</u></b> (µmhos/cm)	<b><u>pH</u></b> (units)	<b><u>DO</u></b> (mg/L)	<b><u>DO</u></b> (%)	<b><u>Turbidity</u></b> (ntu)
<i>15:31, Low Tide, depth in meters</i>						
0.5	18.96	44,586	8.18	9.02	113.7	0.00
1.0	18.90	44,645	8.17	9.11	116.4	0.00
2.0	18.75	44,696	8.17	9.29	116.8	0.00
3.0	18.41	44,893	8.18	9.61	121.9	0.00
4.0	15.40	47,702	8.07	9.01	108.1	0.00
5.0	15.06	47,765	8.04	8.76	108.9	0.00
6.0	14.65	48,151	8.02	8.76	104.2	0.00
7.0	14.06	48,588	7.98	8.68	97.3	0.00
8.0	12.57	49,040	7.82	7.56	86.5	0.00
9.0	11.69	49,349	7.71	6.02	70.5	0.00
10.0	11.29	49,483	7.71	6.00	67.1	0.00
11.0	11.25	49,517	7.70	6.09	68.1	0.00
12.0	11.29	49,557	7.75	6.01	67.9	0.00
13.0	11.31	49,572	7.77	6.33	71.0	0.00
14.0	11.33	49,583	7.77	6.32	70.8	0.00
15.0	11.35	49,596	7.79	6.17	71.1	0.00



<b>STATION 2</b>	<b><u>Temperature</u></b> (°C)	<b><u>Specific Conductivity</u></b> (µmhos/cm)	<b><u>pH</u></b> (units)	<b><u>DO</u></b> (mg/L)	<b><u>DO</u></b> (%)	<b><u>Turbidity</u></b> (ntu)
<i>14:36, Low Tide, depth in meters</i>						
0.5	18.84	44,544	8.14	9.19	113.5	0.00
1.0	18.84	44,537	8.13	9.23	118.3	0.00
2.0	18.79	44,607	8.13	9.12	120.3	0.00
3.0	18.13	44,800	8.14	8.83	111.6	0.00
4.0	17.90	45,018	8.15	9.77	123.1	0.00
5.0	15.19	47,511	8.01	9.35	109.5	0.00
6.0	14.99	47,834	8.02	8.26	107.9	0.00
7.0	13.75	48,333	7.90	7.58	98.6	0.00
8.0	12.63	48,902	7.8	7.25	84.1	0.00
9.0	11.47	49,362	7.68	6.23	66.4	0.00
10.0	11.50	49,379	7.69	6.16	69.6	0.00
11.0	11.25	49,470	7.72	6.44	72.8	0.00
12.0	11.25	49,500	7.73	6.18	69.0	0.00
13.0	11.29	49,532	7.75	6.22	68.8	0.00
14.0	11.30	49,550	7.77	6.15	69.0	0.00
15.0	11.31	49,555	7.76	6.43	71.6	0.00

**Table 2. Summary of Water Quality Readings Taken at Intake Locations on August 24, 2018 in Belfast Bay, Belfast, Maine**

<b>STATION 1</b>	<b><u>Temperature</u></b> (°C)	<b><u>Specific</u> <u>Conductivity</u></b> (µmhos/cm)	<b><u>pH</u></b> (units)	<b><u>DO</u></b> (mg/L)	<b><u>DO</u></b> (%)	<b><u>Turbidity</u></b> (ntu)
<i>11:35, High Tide, depth in meters</i>						
0.5	18.73	44,301	8.11	9.42	119.6	0.00
1.0	19.26	44,192	8.10	9.49	119.5	0.00
2.0	18.01	44,511	8.09	9.49	121.3	0.00
3.0	17.70	44,712	8.08	9.23	115.9	0.00
4.0	16.71	45,597	8.00	8.96	107.8	0.00
5.0	15.18	46,999	7.96	8.81	105.6	0.00
6.0	14.02	47,412	7.86	7.89	93.5	0.00
7.0	13.31	48,235	7.86	7.87	91.4	0.00
8.0	13.00	48,385	7.84	7.26	79.8	0.00
9.0	12.87	48,450	7.83	7.25	83.6	0.00
10.0	12.25	48,532	7.77	7.00	79.8	0.00
11.0	11.84	48,649	7.73	6.63	74.6	0.00
12.0	11.48	48,819	7.75	6.51	72.9	0.00
13.0	11.46	48,815	7.76	6.37	71.3	0.00
14.0	11.41	48,835	7.76	6.15	68.8	0.00

15.0	11.41	48,835	7.76	6.34	70.9	0.00
16.0	11.42	48,847	7.77	6.32	69.9	0.00
17.0	11.42	48,848	7.77	6.38	71.4	0.00
<b>STATION 2</b>	<u>Temperature</u> (°C)	<u>Specific Conductivity</u> (µmhos/cm)	<u>pH</u> (units)	<u>DO</u> (mg/L)	<u>DO</u> (%)	<u>Turbidity</u> (ntu)
<i>10:00, High Tide, depth in meters</i>						
0.5	18.26	44,366	8.10	7.64	96.3	0.00
1.0	18.17	44,401	8.13	7.56	95.1	0.00
2.0	18.00	44,440	8.15	7.77	97.7	0.00
3.0	17.85	44,538	8.15	7.86	99.0	0.00
4.0	17.49	45,028	8.13	7.66	95.3	0.00
5.0	15.10	46,832	7.96	7.28	87.1	0.00
6.0	14.76	47,255	7.98	6.72	80.1	0.00
7.0	13.51	47,659	7.88	6.06	70.6	0.00
8.0	12.92	48,748	7.87	6.10	72.0	0.00
9.0	11.91	48,639	7.78	5.64	63.7	0.00
10.0	11.52	48,810	7.77	5.58	62.2	0.00
11.0	11.51	44,818	7.77	5.23	58.6	0.00
12.0	11.47	48,812	7.78	5.41	61.4	0.00
13.0	11.47	48,849	7.79	5.60	62.8	0.00
14.0	11.43	48,855	7.78	5.56	61.3	0.00

15.0	11.43	48,867	7.78	5.49	61.0	0.00
16.0	11.43	48,812	7.79	5.38	60.3	0.00
17.0	11.43	48,880	7.79	5.48	61.4	0.00
<i>10:21, High Tide, depth in meters</i>						
0.5 (duplicate)	18.39	44,393	8.14	7.33	92.7	0.00
1.0 (duplicate)	18.45	44,440	8.14	7.30	92.1	0.00
2.0 (duplicate)	18.02	44,521	8.15	6.76	84.8	0.00
3.0 (duplicate)	17.91	44,590	8.14	7.07	89.1	0.00
4.0 (duplicate)	17.70	44,692	8.14	6.59	82.5	0.00
5.0 (duplicate)	15.67	46,477	8.00	6.83	82.4	0.00
6.0 (duplicate)	14.65	47,149	7.98	6.62	78.6	0.00
7.0 (duplicate)	13.31	47,767	7.87	5.82	67.4	0.00
8.0 (duplicate)	12.64	48,571	7.85	5.35	61.3	0.00
9.0 (duplicate)	12.05	48,605	7.77	5.15	58.2	0.00
10.0 (duplicate)	11.52	48,818	7.77	4.99	56.2	0.00
11.0 (duplicate)	11.48	48,801	7.79	5.27	60.5	0.00
12.0 (duplicate)	11.48	48,821	7.79	5.09	57.3	0.00
13.0 (duplicate)	11.44	48,864	7.78	5.12	57.4	0.00
14.0 (duplicate)	11.42	48,871	7.79	5.09	56.9	0.00
15.0 (duplicate)	11.42	48,881	7.79	5.17	56.2	0.00
16.0 (duplicate)	11.43	48,859	7.79	5.25	58.7	0.00
17.0 (duplicate)	11.43	48,869	7.79	5.17	57.9	0.00

**Table 3. Summary of Water Quality Readings Taken at Discharge Locations on September 7, 2018 in Belfast Bay, Belfast, Maine**

<b>STATION 1</b>	<b><u>Temperature</u></b> (°C)	<b><u>Specific Conductivity</u></b> (µmhos/cm)	<b><u>pH</u></b> (units)	<b><u>DO</u></b> (mg/L)	<b><u>DO</u></b> (%)	<b><u>Turbidity</u></b> (ntu)
<i>9:00, High Tide, depth in meters</i>						
0.5	18.23	44,242	7.95	8.78	110.1	0.00
1.0	18.15	44,271	7.94	8.67	108.9	0.00
2.0	18.14	44,260	7.93	8.63	108.5	0.00
3.0	18.13	44,280	7.92	8.61	108.3	0.00
4.0	18.13	44,325	7.92	8.59	107.9	0.00
5.0	18.11	44,322	7.92	8.55	107.4	0.00
6.0	17.98	44,409	7.91	8.48	106.7	0.00
7.0	16.02	46,307	7.81	8.34	101.5	0.00
8.0	15.71	46,436	7.78	7.95	96.0	0.00
9.0	15.17	46,779	7.76	7.81	93.6	0.00
10.0	14.60	47,072	7.73	7.65	90.7	0.00
11.0	13.87	47,465	7.64	7.10	82.4	0.00
12.0	13.39	47,701	7.64	6.35	73.4	1.20
13.0	13.05	47,840	7.62	6.03	69.5	2.50

<i>14:39, Low Tide, depth in meters</i>						
0.5	18.75	44,302	7.91	8.71	110.9	0.00
1.0	18.77	44,294	7.91	8.71	110.7	0.00
2.0	18.28	44,327	7.92	8.83	111.3	0.00
3.0	17.91	44,718	7.89	8.75	109.4	0.00
4.0	17.52	45,375	7.88	8.71	108.5	0.00
5.0	16.91	45,892	7.86	8.69	107.0	0.00
6.0	16.50	45,967	7.80	8.10	99.4	0.00
7.0	16.12	46,245	7.78	7.95	96.8	0.00
8.0	15.63	46,527	7.75	7.79	94.1	0.00
9.0	14.56	47,117	7.69	7.53	89.1	0.00
<i>14:52, Low Tide, depth in meters</i>						
0.5 (duplicate)	18.78	44,311	7.96	8.55	108.8	0.00
1.0 (duplicate)	18.74	44,316	7.93	8.61	109.6	0.00
2.0 (duplicate)	18.31	44,350	7.93	8.75	110.4	0.00
3.0 (duplicate)	17.88	44,762	7.90	8.68	108.7	0.00
4.0 (duplicate)	17.39	45,485	7.89	8.68	108.1	0.00
5.0 (duplicate)	17.05	45,844	7.89	8.69	107.5	0.00
6.0 (duplicate)	16.49	46,006	7.81	8.30	100.7	0.00
7.0 (duplicate)	16.04	46,322	7.78	7.93	96.4	0.00
8.0 (duplicate)	15.45	46,681	7.75	7.72	92.7	0.00

9.0 (duplicate)	14.45	47,191	7.68	7.25	85.8	0.00
STATION 2	<u>Temperature</u>	<u>Specific Conductivity</u>	<u>pH</u>	<u>DO</u>	<u>DO</u>	<u>Turbidity</u>
	(°C)	(µmhos/cm)	(units)	(mg/L)	(%)	(ntu)
<i>11:16, High Tide, depth in meters</i>						
0.5	18.72	44,329	7.94	8.64	109.6	0.00
1.0	18.58	44,334	7.94	8.62	109.3	0.00
2.0	18.36	44,327	7.95	8.65	109.2	0.00
3.0	18.28	44,334	7.95	8.65	109.1	0.00
4.0	18.20	44,370	7.95	8.66	109.1	0.00
5.0	18.15	44,435	7.94	8.63	108.4	0.00
6.0	16.97	45,632	7.88	8.42	103.9	0.00
7.0	16.76	45,915	7.88	8.38	103.3	0.00
8.0	16.65	46,046	7.89	8.40	103.4	0.00
9.0	15.93	46,435	7.85	8.35	101.2	0.00
10.0	15.57	46,608	7.85	8.22	99.3	0.00
11.0	14.3	47,312	7.73	7.62	89.1	0.00
12.0	13.61	47,601	7.64	6.71	77.2	0.60
13.0	12.85	48,005	7.61	6.23	71.5	1.80
14.0	12.83	47,817	7.44	5.98	68.5	no data
<i>15:42, Low Tide, depth in meters</i>						



0.5	18.59	44,359	7.93	8.72	110.6	0.00
1.0	18.59	44,361	7.93	8.73	110.7	0.00
2.0	18.57	44,360	7.93	8.73	110.7	0.00
3.0	18.12	44,584	7.93	8.83	111.1	0.00
4.0	17.83	45,061	7.90	8.72	109.3	0.00
5.0	17.60	45,663	7.92	8.76	109.7	0.00
6.0	17.24	45,895	7.91	8.79	109.3	0.00
7.0	15.89	46,047	7.80	8.09	98.1	0.00
8.0	15.35	46,785	7.79	8.02	96.8	0.00
9.0	15.93	46,954	7.71	7.53	89.1	0.00
10.0	13.99	47,407	7.59	6.59	76.0	0.00
11.0	13.60	47,593	7.57	6.32	73.4	1.40

**Table 4. Summary of Results of Laboratory Analyses of Water Quality Samples Collected from Intake Locations on August 23, 2018 in Belfast Bay, Belfast, Maine**

<b>STATION 1</b>	<b>Solids, Total Suspended (mg/L)</b>	<b>Nitrogen, Ammonia (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite (mg/L)</b>	<b>Total Nitrogen (mg/L)</b>	<b>Nitrogen, Total Kjeldahl (mg/L)</b>	<b>Phosphorus, Total (mg/L)</b>	<b>Chemical Oxygen Demand (mg/L)</b>	<b>BOD 5- day (mg/L)</b>
<i>16:00, Low Tide</i>								
0.5 meters	10.0	<0.024	<0.033	<0.30	0.195	0.012	1200	<2.0
4.0 meters	14.0	<0.024	<0.033	<0.30	0.225	0.012	640	<2.0
8.0 meters	13.0	<0.024	<0.033	<0.30	0.196	0.009	900	<2.0
12 meters	12.0	<0.024	<0.033	<0.30	0.172	0.014	1200	<2.0
<b>STATION 2</b>	<b>Solids, Total Suspended (mg/L)</b>	<b>Nitrogen, Ammonia (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite (mg/L)</b>	<b>Total Nitrogen (mg/L)</b>	<b>Nitrogen, Total Kjeldahl (mg/L)</b>	<b>Phosphorus, Total (mg/L)</b>	<b>Chemical Oxtgen Demand (mg/L)</b>	<b>BOD 5- day (mg/L)</b>
<i>14:59, Low Tide</i>								
0.5 meters	11.0	<0.024	<0.033	<0.30	0.221	0.013	1200	<2.0
4.0 meters	45.0	0.031	<0.033	<0.30	0.242	0.012	680	<2.0
8.0 meters	17.0	0.025	<0.033	<0.30	0.273	0.017	1200	<2.0
12 meters	13.0	<0.024	<0.033	<0.30	0.192	0.013	750	<2.0

**Table 5. Summary of Results of Laboratory Analyses of Water Quality Samples Collected from Intake Locations on August 24, 2018 in Belfast Bay, Belfast, Maine**

<b>STATION 1</b>	<b>Solids, Total Suspended (mg/L)</b>	<b>Nitrogen, Ammonia (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite (mg/L)</b>	<b>Total Nitrogen (mg/L)</b>	<b>Nitrogen, Total Kjeldahl (mg/L)</b>	<b>Phosphorus, Total (mg/L)</b>	<b>Chemical Oxygen Demand (mg/L)</b>	<b>BOD 5- day (mg/L)</b>
<i>12:00, High Tide (AM)</i>								
0.5 meters	9.6	<0.024	0.090	<0.30	0.185	0.012	790	<2.0
5.0 meters	8.6	<0.024	<0.033	<0.30	0.191	0.012	960	<2.0
9.5 meters	11.0	<0.024	<0.033	<0.30	0.188	0.021	900	<2.0
14.0 meters	11.0	<0.024	0.11	<0.30	0.183	0.019	1300	<2.0
<b>STATION 2</b>	<b>Solids, Total Suspended (mg/L)</b>	<b>Nitrogen, Ammonia (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite (mg/L)</b>	<b>Total Nitrogen (mg/L)</b>	<b>Nitrogen, Total Kjeldahl (mg/L)</b>	<b>Phosphorus, Total (mg/L)</b>	<b>Chemical Oxygen Demand (mg/L)</b>	<b>BOD 5- day (mg/L)</b>
<i>10:59, High Tide (AM)</i>								
0.5 meters	10.0	0.039	0.095	<0.30	0.194	0.012	1000	<2.0
5.0 meters	9.2	<0.024	0.10	<0.30	0.235	0.013	810	<2.0
5.0 meters (duplicate)	9.4	<0.024	<0.033	<0.30	0.223	0.013	750	<2.0
9.5 meters	8.5	<0.024	<0.033	<0.30	0.202	0.017	1200	<2.0
14.0 meters	11.0	0.045	0.097	<0.30	0.182	0.024	770	<2.0

**Table 6. Summary of Results of Laboratory Analyses of Water Quality Samples Collected from Discharge Locations and Dam on September 7, 2018 in Belfast Bay, Belfast, Maine**

<b>STATION 1</b>	<b>Solids, Total Suspended  (mg/L)</b>	<b>Nitrogen, Ammonia  (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite  (mg/L)</b>	<b>Total Nitrogen  (mg/L)</b>	<b>Nitrogen, Total Kjeldahl  (mg/L)</b>	<b>Phosphorus, Total  (mg/L)</b>	<b>Chemical Oxygen Demand  (mg/L)</b>	<b>BOD 5- day  (mg/L)</b>
<i>9:42, High Tide (AM)</i>								
0.5 meters	8.5	<0.024	<0.033	0.42	0.418	0.013	1100	<2.0
4.0 meters	8.8	0.024	<0.033	0.78	0.780	0.009	1000	<2.0
7.0 meters	8.6	<0.024	<0.033	0.53	0.531	0.016	1400	<2.0
10 meters	9.0	<0.024	0.046	0.32	0.321	0.015	1100	<2.0
<i>15:08, Low Tide (PM)</i>								
0.5 meters	7.5	<0.024	<0.033	<0.30	0.195	0.015	670	<2.0
3.0 meters	7.8	<0.024	0.034	<0.30	0.238	0.014	860	<2.0
5.0 meters	6.9	<0.024	<0.033	<0.30	0.198	0.012	660	<2.0
5.0 meters (duplicate)	9.5	<0.024	<0.033	<0.30	0.204	0.010	800	<2.0
7.0 meters	10.0	<0.024	<0.033	<0.30	0.142	0.016	750	<2.0
<b>STATION 2</b>	<b>Solids, Total Suspended  (mg/L)</b>	<b>Nitrogen, Ammonia  (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite  (mg/L)</b>	<b>Total Nitrogen  (mg/L)</b>	<b>Nitrogen, Total Kjeldahl  (mg/L)</b>	<b>Phosphorus, Total  (mg/L)</b>	<b>Chemical Oxtgen Demand  (mg/L)</b>	<b>BOD 5- day  (mg/L)</b>
<i>11:35, High Tide (AM)</i>								

0.5 meters	7.7	<0.024	<0.033	<0.30	0.259	0.010	1400	<2.0
4.0 meters	9.4	<0.024	0.052	<0.30	0.153	0.014	720	<2.0
7.0 meters	7.4	<0.024	<0.033	<0.30	0.274	0.010	720	<2.0
10 meters	9.4	<0.024	<0.033	0.33	0.333	0.016	800	<2.0
<i>16:11, Low Tide (PM)</i>								
0.5 meters	7.2	<0.024	0.036	<0.30	0.226	0.011	770	<2.0
3.0 meters	7.1	<0.024	<0.033	<0.30	0.247	0.011	690	<2.0
5.0 meters	9.0	<0.024	<0.033	0.48	0.476	0.009	1000	<2.0
7.0 meters	9.3	0.034	<0.033	0.38	0.376	0.014	900	<2.0
<b>BELOW DAM</b>	<b>Solids, Total Suspended (mg/L)</b>	<b>Nitrogen, Ammonia (mg/L)</b>	<b>Nitrogen, Nitrate/Nitrite (mg/L)</b>	<b>Total Nitrogen (mg/L)</b>	<b>Nitrogen, Total Kjeldahl (mg/L)</b>	<b>Phosphorus, Total (mg/L)</b>	<b>Chemical Oxtgen Demand (mg/L)</b>	<b>BOD 5- day (mg/L)</b>
<i>13:26, Ebbing Tide (PM)</i>								
Downstream side of dam	No data collected	No data collected	0.036	0.48	0.480	0.021	No data collected	No data collected



Nordic Aquafarms Inc  
511 Congress Street  
Portland, ME 04101

[www.nordicaquafarms.com](http://www.nordicaquafarms.com)

October 16, 2018

Mr. Kevin Martin  
Commissioner's Office  
Maine Department of Environmental Protection  
17 State House Station  
Augusta, ME 04333-0017

Dear Mr. Martin:

This letter authorizes Attorney Joanna B. Tourangeau of Drummond Woodsum and Elizabeth Ransom of Ransom Consulting to act as agents on behalf of Nordic Aquafarms, Inc. in connection with any applications being filed with the Department of Environmental Protection for Nordic Aquafarms project in Belfast, Maine. These applications include, but are not limited to applications pursuant to Maine statutes implementing the MEPDES Program, the Site Law, and the Natural Resource Protection Act and any other related applications that may be required for this project.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Eric Heim', is written over a horizontal line.

Eric Heim  
President



Todd McLeod | Print Sales Manager

September 24, 2018

**AFFIDAVIT OF PUBLICATION**

This is to certify the advertising

**OF:** Drummond Woodsum

**RE:** Notice of Intent to File - Nordic Aquafarms

**ON:** September 21, 2018

Signed:

Todd McLeod  
Print Sales Manager

Then personally appeared the above named Todd McLeod,  
Print Sales Manager, and acknowledged the foregoing  
instrument to be his free act and deed in his said capacity and  
the free act and deed of said corporation.

Before me,

Barbara G. Mower

Barbara G. Mower

Notary Public

My commission expires November 9, 2024

**Legal Notices**

**NOTICE OF INTENT TO FILE  
MAINE WASTE DISCHARGE LICENSE/MAINE POLLUTANT  
DISCHARGE ELIMINATION SYSTEM PERMIT APPLICATION AND  
NOTICE OF PUBLIC INFORMATIONAL MEETING**

Please take note that, pursuant to 38 MRSA, Sections 413 and 414-A, Nordic Aquafarms intends to file a wastewater discharge permit application with the Department of Environmental Protection (DEP). This application is for the discharge of up to 7.7 million gallons per day of wastewater from land based aquaculture to Penobscot Bay in Belfast, Maine. The application will be filed on or about October 19, 2018 and will be available for public inspection at DEP's Augusta office during normal business hours. A copy may also be seen at the municipal offices in Belfast, Maine.

Please take note that, pursuant to Chapter 2 of the Department of Environmental Protection Rules, Nordic Aquafarms intends to hold a Public Informational Meeting on October 4, 2018 at 6:00 p.m. at the Troy A. Howard Middle School, 173 Lincolnville Ave, Belfast, ME 04915. The applicant will inform the public of the project and its anticipated environmental impacts, along with information about opportunities for public comments on the project.

A request for public hearing or request that the Board of Environmental Protection assume jurisdiction over this application must be received by the DEP, in writing, no later than 20 days after the application is found acceptable for processing, or 30 days from the date of this notice, whichever is longer. Requests shall state the nature of the issue(s) to be raised. Unless otherwise provided by law, a hearing is discretionary and may be held if the Commissioner or the Board finds significant public interest or there is conflicting technical information.

During the time specified above, persons wishing to receive copies of draft permits and supporting documents, when available, may request them from DEP. Persons receiving a draft permit shall have 30 days in which to submit comments or to request a public hearing on the draft.

Public comment will be accepted until a final administrative action is taken to approve, approve with conditions or deny this application. Written public comments or requests for information may be made to the Division of Water Quality Management, Department of Environmental Protection, State House Station #17, Augusta, ME 043330017. Telephone: (207) 287-3901.

Sept. 21, 2018

bangordailynews.com

P.O. Box 1329 | Bangor, ME 04402-1329 | 207-990-8000 | 800-432-7964

**BARBARA G. MOWER**  
NOTARY PUBLIC  
State of Maine  
My Commission Expires  
November 9, 2024



### Legal Notices

#### NOTICE OF INTENT TO FILE MAINE WASTE DISCHARGE LICENSE/MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT APPLICATION AND NOTICE OF PUBLIC INFORMATIONAL MEETING

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Sept. 21, 2018

### Legal Notices

#### TOWN OF PITTSFIELD PUBLIC HEARING NOTICE

The Pittsfield Town Council will hold a Public Hearing on Tuesday, October 2, 2018 at 6:30 pm in the Pittsfield Municipal Building Council Chambers to consider the following:

**ORDINANCE 18-03: (Public Hearing)**  
That the Town Council hereby Ordains that Chapter 2B General Assistance Ordinance, Appendices A-D be rescinded and the new Appendices A-D be adopted to reflect the revised maximums for the period of October 01, 2018 - September 30, 2019. And to continue to use Appendices E-F set forth and filed with the Department of Health and Human Services (DHHS) until any new appendices are approved.

Sept. 21, 2018

### Legal Notices

#### PUBLIC HEARING

BY ORDER of the Hermon Planning Board, a Public Hearing has been scheduled for Tuesday, October 2, 2018 at 6:30pm, in the Public Safety Meeting Room, for the purpose of reviewing an amendment to Lot 32 of Skyway Valley Country Estates, Map 50 Lot 37.

Sept. 21, 2018

PAPA GAMBINO'S has permanent FT/PT positions for delivery drivers and/or counter help. Always room for advancement. Good or no work history, refs. & want to work. Must have clean ME drivers lic. to deliver. Apply at: 622 Hammond St. or 271 State St., Bangor.

### Legal Notices

#### INVITATION TO BID TOWN OF PITTSFIELD SEWER RECONSTRUCTION

The Town cordially invites bids for sewer reconstruction of portions of Madawaska Avenue. Sealed bids will be received by the Owner at their offices until 10:00 am prevailing local time, October 12, 2018. Work must be completed by June 15, 2019. The work generally consists of the following which is not an all-inclusive list: Provision of sewer reconstruction activities for approximately 1,434 feet, including but not limited to sewer main, manholes, services to the right-of-way and trench/curb/sidewalk repair. This project is partially funded by the Northern Border Regional Commission (NBRC) including some federal funding, so all federally mandated Davis-Bacon Wage Rates, Equal Opportunity, and Disadvantaged Business opportunities must be addressed by bids and performance of work. A copy of the NBRC manual for grant administration, compliance and monitoring is available upon request. The pre-bid site visit and conference will take place at 10:00 am on October 5, 2018 at the Town Offices. Plans and specifications are available for a fee by contacting Plymouth Engineering, Inc. P.O. Box 46, Plymouth, ME 04969 or 207-257-2071.

Sept. 21, 2018

### Apts. Furnished 211

BANGOR 1 BR's, F/P, hdwd frs, clean, quiet, coin-op, near EMMC. No smoke/pets. \$975-\$1025, utils. incl. 949-4646

### Legal

#### NOTICE O

Notice is hereby given that in accordance closure and Order of Sale entered at Mortgage Research Center, LLC d/b/a Veterans United Home Loans, its suc 26, 2015 and recorded in the Penobscot at Page 280, should the period of red of the property by the mortgagors, a mortgage will be conducted on

October 26, 2018 commencing at 10:30 a.m. LLP, 190 U.S. Route One, 2nd Floor

The property is located at 105 Eaton Maine, reference as described in said

The sale will be by public auction. All make a deposit of \$5,000.00 in cash, public sale made payable to Shechtman non-refundable as to the highest bidder be paid within thirty (30) days of the Mortgage Research Center, LLC Missouri Limited Liability Company is this notice, no sale shall be deemed to be a subsequent sale are reserved.

Additional terms will be announced at

Mortgage Research Center, LLC d/b/a Limited Liability Company, By its attorneys, Shechtman Halperin John Michael Ney, Jr., Esq. 1080 Main Street, Pawtucket, RI 02860 (401) 272-1400

Sept. 21, 28, Oct. 5, 2018

### Legal

#### NOTICE OF PUBLIC

By virtue of and in execution of a Judgment of the Penobscot County Superior Court No. RE-2013-139 brought by Federal Moffat A.C. and Beatrice Arras Gardner A.C. and Beatrice Arras Gardner Trust mortgage recorded in the Penobscot Page 215, the statutory ninety (90) days without redemption, notice is hereby given that on October 16, 2018 at 4:00 PM at 2 Gorge the premises described in said mortgage buildings thereon, situated in the Town of State of Maine, described in said mortgage. TERMS OF SALE The property, sale, who shall pay a deposit of Ten (10) in cash, certified check or funds accepted. The successful bidder shall be Agreement with said Federal National Ten Thousand and No/100 Dollars (\$10,000.00) interest bearing deposit thereon provided the date of the public sale, at which time and payable in cash or certified funds association as aforesaid, which will then The sale shall be made subject to: (a) reveal, (b) any unpaid taxes or assessments and (c) any facts which an accurate property shall be sold "as is" and "where expressed, implied or otherwise. Other ad: S/John A. Doonan, Esq., Bar No. 5746 Attorney for Federal National Mortgage Longoria, LLC 100 Cummings Center, 2670

Sept. 7, 14, 21, 2018

ORONO 2 BR spacious apt. Near UMO \$965, H/HW incl. Ask about our August/September special. 207-866-2658

### GREAT LOCATION

ORONO 2 BR, 2nd flr., quiet, country, \$975, incl. utils. except LP. Less dep.