



Fryeburg Water Company

24 Portland Street, Suite #1

Fryeburg, ME 04037

(207) 935-2010

July 28, 2016

Ms. Katie Haley
Code Enforcement Officer
Town of Fryeburg
16 Lovewell Pond Road
Fryeburg, ME 04037

Re: Ward's Pond Aquifer Monitoring Plan

Dear Ms. Haley:

Enclosed please find monitoring data for the first quarter of 2016. The enclosed data has been collected by Eric Belcher, Assistant Superintendent of the Fryeburg Water Company.

BACKGROUND

An aquifer monitoring plan (hereafter referred to as the "Ward's Pond Aquifer Monitoring Plan") was created as a condition of approval by the Fryeburg Planning Board as part of its Notice of Decision for Land Use Authorization in April 2003.

WARDS POND AQUIFER MONITORING PLAN

This monitoring plan has been prepared at the request of the Fryeburg Planning Board as a means of documenting the long term trend in water elevation within the Aquifer surrounding the proposed new production well on Porter Road in the Town of Fryeburg, Maine.

MONITORING LOCATIONS

Six locations are proposed and include four monitoring wells (MW-1, 2, 3, 4) and two surface monitoring locations (SG-1, 2) as shown on the attached map. Three monitoring locations (MW-2, MW-3 and MW-4) monitor groundwater elevation within the aquifer associated with production well #3, located off Porter Road. MW-2 monitors groundwater elevation down gradient of Well #3 and MW-3 and MW-4 monitor up gradient water elevation. MW-1 monitors groundwater elevation associated with Wells #1 and #2, located off Portland Street. Because MW-1 is located in the immediate vicinity of the existing production wells, this well will be monitored at a time when each of the existing wells has not been operating for a minimum of one hour.

2016 GROUNDWATER ELEVATION DATA IN FEET TO DATE

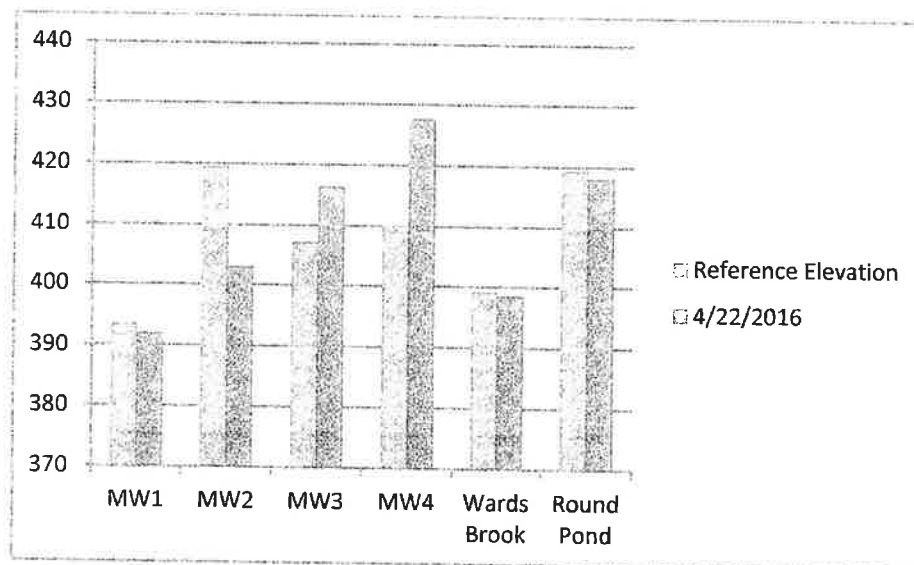
Monitoring Well	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	Depth to Water	Elevation of Water	Depth to Water	Elevation of Water	Depth to Water	Elevation of Water
MW-1	393.47	-1.49	391.98						
MW-2	419.50	-16.57	402.93						
MW-3	407.07	9.33	416.40						
MW-4	410.06	17.52	427.58						

Two monitoring locations (SG-1 and SG-2) are proposed to monitor surface water elevations of Round Pond and the headwaters of Wards Pond. Staff gauges will be installed at each location and direct readings of surface water elevation will be collected.

2016 SURFACE WATER ELEVATION DATA IN FEET TO DATE

Surface Well Elevation	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	Depth to Water	Elevation of Water	Depth to Water	Elevation of Water	Depth to Water	Elevation of Water
Wards Brook	399.12	-.59	398.53						
Round Pond	419.38	-1.28	418.10						

GROUNDWATER AND SURFACE WATER ELEVATIONS



The Reference Elevation is the measuring point elevation in feet NAVD (North American Vertical Datum (1988)). Bliss Associates surveyed and provided new reference elevations in November 2015.

MONITORING PROCEDURES

Each monitoring location will be visited quarterly. At each monitoring well location an electronic water level meter will be lowered into the well. The depth to water from the top of the well casing will be recorded. This depth will be subtracted from a USGS vertical elevation derived from the survey to determine the elevation of the water table. At each staff gauge location the water level will be read directly from the staff gauge and the water elevation will be calculated from the known elevation of the top of each staff gauge.

REPORTING

Data from the four monitoring wells and the surface monitoring locations will be reported on a quarterly basis. At the end of each water year (January) a monitoring report will be submitted to the planning board, in care of the Code Enforcement Officer, for review. The report will document the condition of each monitoring location, a narrative describing the monitoring results including an interpretation of the results, and time series graphs of the water elevation associated with each monitoring location. The data will be presented such that the planning board can interpret the results without outside input.

In addition to the data from the six monitoring location, we will include water withdrawal data from the three wells. Well #1 which is the dedicated well for bulk water withdrawal as well as Wells #2 and #3 which supply the Town's distribution system.

2016 WATER WITHDRAWAL DATA IN GALLONS


2016	PMS	Pump #2	Pump #3	Total
Jan	9,163,580	4,073,233	3,451,404	16,688,217
Feb	9,328,597	3,614,549	2,054,496	14,997,642
March	11,587,615	3,655,691	2,572,761	17,816,067
April				
May				
June				
Totals	30,079,792	11,343,473	8,078,661	49,501,926

The comprehensive Emery & Garrett Groundwater Inc. studies undertaken on behalf of the Town of Fryeburg in 2005 conclude that above the amount of water withdrawn by the Fryeburg Water Company to service its residential and other commercial customers, and normal run off, the Ward's Brook aquifer can reasonably sustain discretionary withdrawals of 220 million gallons per year.

Based on our observation and review of additional monitoring report submitted by Luetje Geological Services, LLC, we have not observed any adverse impact to the Ward's Brook Aquifer.

Please contact our office with any questions at (207) 935-2010.

Respectfully submitted,



Jean Andrews
Vice President



Eric Belcher
Certified Water Operator Class III



Legend

-  Monitoring Well
-  Staff Gauge

Monitoring Well Locations





Fryeburg Water Company

24 Portland Street, Suite #1

Fryeburg, ME 04037

(207) 935-2010

August 4, 2016

Ms. Katie Haley
Code Enforcement Officer
Town of Fryeburg
16 Lovewell Pond Road
Fryeburg, ME 04037

Re: Ward's Pond Aquifer Monitoring Plan

Dear Ms. Haley:

Enclosed please find monitoring data for the second quarter of 2016. The enclosed data has been collected by Eric Belcher, Assistant Superintendent of the Fryeburg Water Company.

BACKGROUND

An aquifer monitoring plan (hereafter referred to as the "Ward's Pond Aquifer Monitoring Plan") was created as a condition of approval by the Fryeburg Planning Board as part of its Notice of Decision for Land Use Authorization in April 2003.

WARDS POND AQUIFER MONITORING PLAN

This monitoring plan has been prepared at the request of the Fryeburg Planning Board as a means of documenting the long term trend in water elevation within the Aquifer surrounding the proposed new production well on Porter Road in the Town of Fryeburg, Maine.

MONITORING LOCATIONS

Six locations are proposed and include four monitoring wells (MW-1, 2, 3, 4) and two surface monitoring locations (SG-1, 2) as shown on the attached map. Three monitoring locations (MW-2, MW-3 and MW-4) monitor groundwater elevation within the aquifer associated with production well #3, located off Porter Road. MW-2 monitors groundwater elevation down gradient of Well #3 and MW-3 and MW-4 monitor up gradient water elevation. MW-1 monitors groundwater elevation associated with Wells #1 and #2, located off Portland Street. Because MW-1 is located in the immediate vicinity of the existing production wells, this well will be monitored at a time when each of the existing wells has not been operating for a minimum of one hour.

2016 GROUNDWATER ELEVATION DATA IN FEET TO DATE

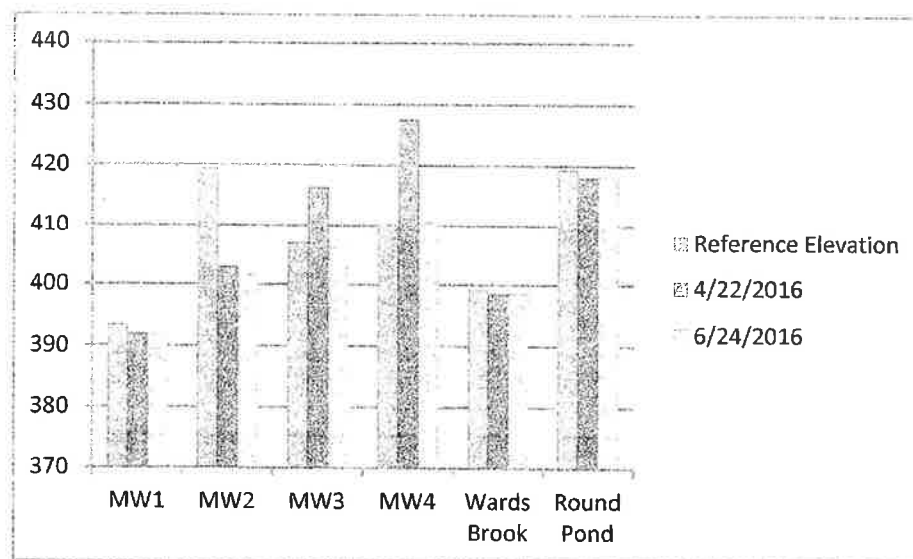
Monitoring Well	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	06/24/16 Depth to Water	06/24/16 Elevation of Water	Depth to Water	Elevation of Water	Depth to Water	Elevation of Water
MW-1	393.47	-1.49	391.98	-1.60	391.87				
MW-2	419.50	-16.57	402.93	-17.82	401.68				
MW-3	407.07	9.33	416.40	-.71	406.36				
MW-4	410.06	17.52	427.58	.50	410.56				

Two monitoring locations (SG-1 and SG-2) are proposed to monitor surface water elevations of Round Pond and the headwaters of Wards Pond. Staff gauges will be installed at each location and direct readings of surface water elevation will be collected.

2016 SURFACE WATER ELEVATION DATA IN FEET TO DATE

Surface Well Elevation	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	06/24/16 Depth to Water	06/24/16 Elevation of Water	Depth to Water	Elevation of Water	Depth to Water	Elevation of Water
Wards Brook	399.12	-.59	398.53	-.48	398.64				
Round Pond	419.38	-1.28	418.10	-1.03	418.35				

GROUNDWATER AND SURFACE WATER ELEVATIONS



The Reference Elevation is the measuring point elevation in feet NAVD (North American Vertical Datum (1988)). Bliss Associates surveyed and provided new reference elevations in November 2015.

MONITORING PROCEDURES

Each monitoring location will be visited quarterly. At each monitoring well location an electronic water level meter will be lowered into the well. The depth to water from the top of the well casing will be recorded. This depth will be subtracted from a USGS vertical elevation derived from the survey to determine the elevation of the water table. At each staff gauge location the water level will be read directly from the staff gauge and the water elevation will be calculated from the known elevation of the top of each staff gauge.

REPORTING

Data from the four monitoring wells and the surface monitoring locations will be reported on a quarterly basis. At the end of each water year (January) a monitoring report will be submitted to the planning board, in care of the Code Enforcement Officer, for review. The report will document the condition of each monitoring location, a narrative describing the monitoring results including an interpretation of the results, and time series graphs of the water elevation associated with each monitoring location. The data will be presented such that the planning board can interpret the results without outside input.

In addition to the data from the six monitoring location, we will include water withdrawal data from the three wells. Well #1 which is the dedicated well for bulk water withdrawal as well as Wells #2 and #3 which supply the Town's distribution system.

2016 WATER WITHDRAWAL DATA IN GALLONS

2016	PMS	Pump #2	Pump #3	Total
Jan	9,163,580	4,073,233	3,451,404	16,688,217
Feb	9,328,597	3,614,549	2,054,496	14,997,642
March	11,587,615	3,655,691	2,572,761	17,816,067
April	8,598,405	3,621,397	2,902,971	15,122,773
May	12,352,113	4,254,710	5,634,628	22,241,451
June	15,018,327	5,565,567	8,265,820	28,849,714
July				
Aug				
Sept				
Totals	66,048,637	24,785,147	24,882,080	115,715,864

The comprehensive Emery & Garrett Groundwater Inc. studies undertaken on behalf of the Town of Fryeburg in 2005 conclude that above the amount of water withdrawn by the Fryeburg Water Company to service its residential and other commercial customers, and normal run off, the Ward's Brook aquifer can reasonably sustain discretionary withdrawals of 220 million gallons per year.

Based on our observation and review of additional monitoring report submitted by Luetje Geological Services, LLC, we have not observed any adverse impact to the Ward's Brook Aquifer.

Please contact our office with any questions at (207) 935-2010.

Respectfully submitted,



Jean Andrews
Vice President



Eric Belcher
Certified Water Operator Class III



Fryeburg Water Company

24 Portland Street, Suite #1

Fryeburg, ME 04037

1-800-287-1643

October 6, 2016

Ms. Katie Haley
Code Enforcement Officer
Town of Fryeburg
16 Lovewell Pond Road
Fryeburg, ME 04037

Re: Ward's Pond Aquifer Monitoring Plan

Dear Ms. Haley:

Enclosed please find monitoring data for the third quarter of 2016. The enclosed data has been collected by Aric Odone, Project Coordinator, for Maine Water Company and Stephen Cox, Director of Engineering for Maine Water Company. Maine Water Company has been retained by the Fryeburg Water Company to assist with the operation and management of the Fryeburg public water system.

BACKGROUND

An aquifer monitoring plan (hereafter referred to as the "Ward's Pond Aquifer Monitoring Plan") was created as a condition of approval by the Fryeburg Planning Board as part of its Notice of Decision for Land Use Authorization in April 2003.

WARDS POND AQUIFER MONITORING PLAN

This monitoring plan has been prepared at the request of the Fryeburg Planning Board as a means of documenting the long term trend in water elevation within the Aquifer surrounding the proposed new production well on Porter Road in the Town of Fryeburg, Maine.

MONITORING LOCATIONS

Six locations established to measure groundwater levels include four monitoring wells (MW-1, 2, 3, 4) and two surface monitoring locations (SG-1, 2) as shown on the attached map. Three monitoring locations (MW-2, MW-3 and MW-4) monitor groundwater elevation within the aquifer associated with production well #3, located off Porter Road. MW-2 monitors groundwater elevation down gradient of Well #3 and MW-3 and MW-4 monitor up gradient water elevation. MW-1 monitors groundwater elevation associated with Wells #1 and #2, located off Portland Street. Because MW-1 is located in the immediate vicinity of the existing production wells, this well will be monitored at a time when each of the existing wells has not been operating for a minimum of one hour.

2016 GROUNDWATER ELEVATION DATA IN FEET TO DATE

Monitoring Well	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	06/24/16 Depth to Water	06/24/16 Elevation of Water	09/01/16 Depth to Water	09/01/16 Elevation of Water	Depth to Water	Elevation of Water
MW-1	393.47	1.49	391.98	1.60	391.87	2.75	390.72		
MW-2	419.50	16.57	402.93	17.82	401.68	19.81	399.69		
MW-3	407.07	.78*	406.29	.71	406.36	3.3	403.77		
MW-4	410.06	1.46*	408.60	.50	410.56	1.3	408.76		

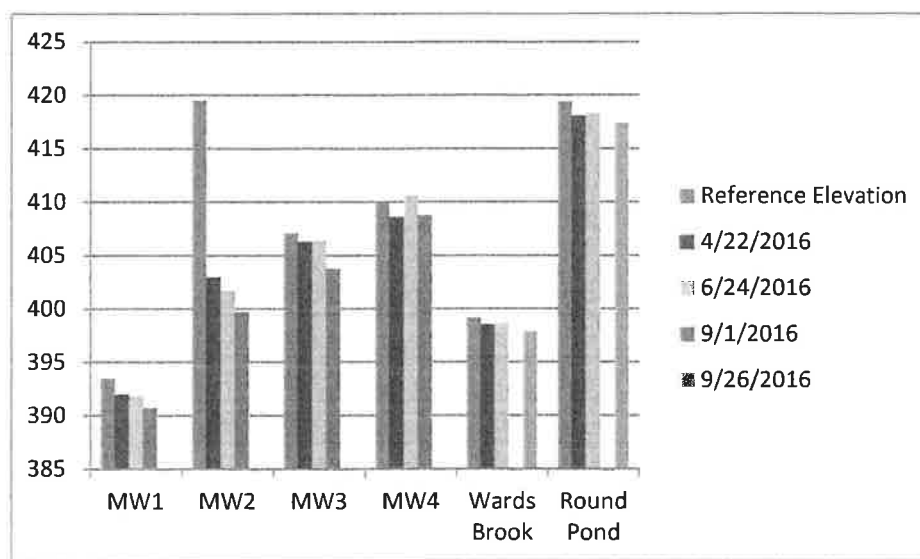
**The 04/22/16 measurement for MW-3 and MW-4 were incorrectly reported in inches for the first and second quarter reports. This third quarter report has been modified to reflect the appropriate units in feet.*

Two monitoring locations (SG-1 and SG-2) monitor surface water elevations of Round Pond and the headwaters of Wards Pond. There are staff gauges at each location and direct readings of surface water elevation are collected.

2016 SURFACE WATER ELEVATION DATA IN FEET TO DATE

Surface Well Elevation	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	06/24/16 Depth to Water	06/24/16 Elevation of Water	09/26/16 Depth to Water	09/26/16 Elevation of Water	Depth to Water	Elevation of Water
Wards Brook	399.12	0.59	398.53	0.48	398.64	1.08	397.84		
Round Pond	419.38	1.28	418.10	1.03	418.35	3.18	417.34		

GROUNDWATER AND SURFACE WATER ELEVATIONS



The Reference Elevation is the measuring point elevation in feet NAVD (North American Vertical Datum (1988)). Bliss Associates surveyed and provided new reference elevations in November 2015.

MONITORING PROCEDURES

Each monitoring location will be visited quarterly. At each monitoring well location an electronic water level meter will be lowered into the well. The depth to water from the top of the well casing will be recorded. This depth will be subtracted from a USGS vertical elevation derived from the survey to determine the elevation of the water table. At each staff gauge location the water level will be read directly from the staff gauge and the water elevation will be calculated from the known elevation of the top of each staff gauge.

REPORTING

Data from the four monitoring wells and the surface monitoring locations are reported on a quarterly basis. At the end of each water year (January) a monitoring report is to be submitted to the planning board, in care of the Code Enforcement Officer, for review. The report will document the condition of each monitoring location, a narrative describing the monitoring results including an interpretation of the results, and time series graphs of the water elevation associated with each monitoring location. The data will be presented such that the planning board can interpret the results without outside input.

In addition to the data from the six monitoring location, we have included water withdrawal data from the three wells. Well #1 is the dedicated well for bulk water withdrawal and Wells #2 and #3 supply the Town's distribution system.

2016 WATER WITHDRAWAL DATA IN GALLONS

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May	12,352,113	4,254,710	5,634,628	22,241,451
June	15,018,327	5,565,567	8,265,820	28,849,714
July	19,621,730	6,155,100	9,030,183	34,807,013
Aug	20,113,436	4,567,955	8,835,214	33,516,605
Sept	12,108,532	576,496	9,978,693	22,663,721
Totals	117,892,335	36,084,698	52,726,170	206,703,203

The comprehensive Emery & Garrett Groundwater Inc. study undertaken on behalf of the Town of Fryeburg in 2005 concludes that above the amount of water withdrawn by the Fryeburg Water Company to serve its residential and other commercial customers, the Ward's Brook aquifer can reasonably sustain discretionary withdrawals of 220 million gallons per year.

Based on our observation and review of additional monitoring report submitted by Luetje Geological Services, LLC, we have not observed any adverse impact to the Ward's Brook Aquifer.

Please contact our office with any questions at (800) 287-1643.

Respectfully submitted,

Stephen Cox

Stephen Cox, PE
Director of Engineering



A handwritten signature in black ink, appearing to read "Aric Odone".

Aric Odone
Project Coordinator





Fryeburg Water Company

24 Portland Street, Suite #1

Fryeburg, ME 04037

1-800-287-1643

January 11, 2017

Ms. Katie Haley
Code Enforcement Officer
Town of Fryeburg
16 Lovewell Pond Road
Fryeburg, ME 04037

Re: Ward's Pond Aquifer Monitoring Plan

Dear Ms. Haley:

Enclosed please find monitoring data for the fourth quarter of 2016. The enclosed data has been collected by Aric Odone, Project Coordinator, for Maine Water Company and Stephen Cox, Director of Engineering for Maine Water Company. Maine Water Company has been retained by the Fryeburg Water Company to perform the operation and management of the Fryeburg public water system.

BACKGROUND

An aquifer monitoring plan (hereafter referred to as the "Ward's Pond Aquifer Monitoring Plan") was created as a condition of approval by the Fryeburg Planning Board as part of its Notice of Decision for Land Use Authorization in April 2003.

WARDS POND AQUIFER MONITORING PLAN

This monitoring plan has been prepared at the request of the Fryeburg Planning Board as a means of documenting the long term trend in water elevation within the Aquifer surrounding the proposed new production well on Porter Road in the Town of Fryeburg, Maine.

MONITORING LOCATIONS

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2016 GROUNDWATER ELEVATION DATA IN FEET TO DATE

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MW-1	393.47	1.49	391.98	1.60	391.87	2.75	390.72	0.94	392.53
MW-2	419.50	16.57	402.93	17.82	401.68	19.81	399.69	20.5	399.30
MW-3	407.07	.78*	406.29	.71	406.36	3.3	403.77	3.73	403.30
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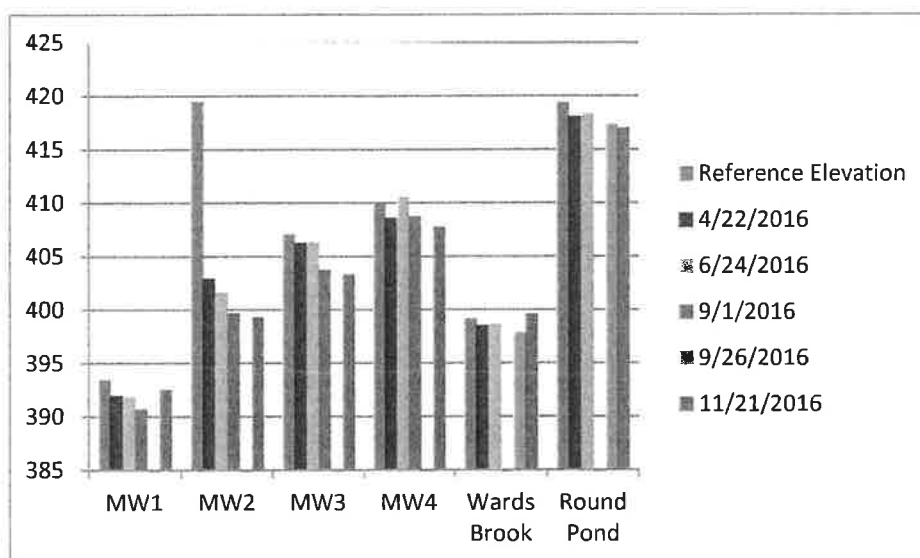
**The 04/22/16 measurement for MW-3 and MW-4 were incorrectly reported in inches for the first and second quarter reports. This third quarter report has been modified to reflect the appropriate units in feet.*

Two monitoring locations (SG-1 and SG-2) monitor surface water elevations of Round Pond and the headwaters of Wards Pond. There are staff gauges at each location and direct readings of surface water elevation are collected.

2016 SURFACE WATER ELEVATION DATA IN FEET TO DATE

Surface Well Elevation	Reference Elevation	04/22/16 Depth to Water	04/22/16 Elevation of Water	06/24/16 Depth to Water	06/24/16 Elevation of Water	09/26/16 Depth to Water	09/26/16 Elevation of Water	11/21/16 Depth to Water	11/21/16 Elevation of Water
Wards Brook	399.12	0.59	398.53	0.48	398.64		397.84		399.58
Round Pond	419.38	1.28	418.10	1.03	418.35	3.18	417.34	3.51	417.01

GROUNDWATER AND SURFACE WATER ELEVATIONS



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MONITORING PROCEDURES

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July	19,621,730	6,155,100	9,030,183	34,807,013
Aug	20,113,436	4,567,955	8,835,214	33,516,605
Sept	12,108,532	576,496	9,978,693	22,663,721
Oct	10,359,178	608,964	8,536,644	19,504,786
Nov	6,047,985	626,606	5,049,306	11,723,897
Dec	11,285,934	0	5,000,926	16,286,860
Totals	145,585,432	37,320,268	71,313,046	254,218,746

The comprehensive Emery & Garrett Groundwater Inc. study undertaken on behalf of the Town of Fryeburg in 2005 concludes that above the amount of water withdrawn by the Fryeburg Water Company to serve its residential and other commercial customers, the Ward's Brook aquifer can reasonably sustain discretionary withdrawals of 220 million gallons per year.

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Respectfully submitted,

Stephen Cox

Stephen Cox, PE
Director of Engineering

MaineWater

Aric Odone

Aric Odone
Project Coordinator