BRP WS-15 Report
Boxborough Town Center, LLC
Massachusetts Avenue
Boxborough, MA 01719

Transmittal #: X273115

Prepared by
GeoHydroCycle, Inc.

Prepared for:
Bxoborough Town Center, LLC

January 5, 2017

GeoHydroCycle, Inc.

Hazardous Waste
Water Supply

Assessment
Remediation
Analyses
Permitting
Modeling
Software

January 5, 2017

Ms. Susan Connors
MassDEP Drinking Water Program
Central Regional Office
8 New Bond Street
Worcester MA 01606

re: BRP WS-15 Report: Community Wells PW-1 and PW-2
Boxborough Town Center, LLC
Massachusetts Avenue
Boxborough, MA 01719
Transmittal #: X273115
GHC #15005

Dear Ms. Connors:

GeoHydroCycle, Inc. (GHC) is providing hydrogeologic services to our Client, Boxborough Town Center, LLC (BTC), who is seeking a New Source Approval permit for two Community Wells at the proposed Boxborough Town Center development off Massachusetts Avenue in Boxborough, MA 01719 (the Site). Figures 1 and 2 in Enclosure 1 show the location and features of the Site.

Introduction

Based on Massachusetts Guidelines for Public Water Systems[1] (Guidelines), on May 25, 2016 GHC submitted a Site Approval/Pump Test report to Massachusetts DEP, requesting site approval for two Community Wells, and approval to conduct a prolonged pump test of two bedrock wells at Boxborough Town Center, LLC. DEP approved the site and prolonged pump test in a letter dated June 30, 2016. A copy of this approval is presented in Enclosure 4.

Development plans for the Site are for 30 three-bedroom units and 70 elderly units (30 x 330 gpd + 70 x 150 gpd). Based on Title 5, the development plus a small club house requiring 260 gallons per day will require water supply wells capable of pumping 20,660 gallons per day, or 14.3 gallons per minute.

Following our March 4, 2016 meeting in DEP's Worcester office, an adjoining parcel of land on the west side of the property was placed under agreement to allow the proposed wells to be moved further from site wetlands and keep the Zone Is within to be owned property. Figure 2 shows the added Parcel A and the relocated well locations.

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[1] Commonwealth of Massachusetts. *Guidelines for Public Water Systems, Chapter 4 Groundwater Supply Development*, March, 2008.

GeoHydroCycle, Inc.

Site wastewater from the development is proposed to be discharged to an onsite leach field, as shown in Figure 2. The distance between the wells and the leach field is approximately 805 feet.

Background Hydrogeology

Natural drainage is to the center of the BTC property to a local wetland that drains to an Intermittent Stream in the northeast corner of the Site. Sequentially the Intermittent Stream discharges to Guggins Brook, Fort Pond Brook, Nashoba Brook, Assabet River, Concord River, and eventually to the Merrimack River.

As Figure 3 shows, the on-line MassGIS geologic database indicates that the surficial geology around the BTC wells consists of glacial till or bedrock. In the area of the well, groundwater in the surficial aquifer flows generally toward a nearby Intermittent Stream and its adjacent wetlands to the southeast.

MassGIS data indicates the bedrock underlying the surficial aquifer is a Metamorphic Rock. Figure 4 shows the MassGIS bedrock map. Bedrock wells in metamorphic rocks typically encounter groundwater in rock fractures. Groundwater flow in bedrock tends to follow the direction of groundwater in the surficial aquifer.

Groundwater recharge for the surficial and bedrock aquifers is from rainfall infiltrating into and through the surficial aquifer into the bedrock fracture network at the boundary between the surficial and bedrock aquifers.

Wells and Well Testing

<u>The Boxborough Town Center, LLC Wells</u>

Between August 17th and 23rd, 2016, Gap Mountain Drilling of Ringe, NH drilled wells PW-1 and PW-2 at the BTC Site. Well PW-1 was drilled to a depth of 400 feet below ground surface and encountered a water bearing fracture between the depths of 180 and 182 feet bgs. Based on a 4 hour air-blow using the drill stem, the driller rated the well yield at 25 gallons per minute. The Gap Mountain drill logs are presented in Enclosure 2.

Well PW-2 was drilled to a depth of 700 feet bgs and encountered a water bearing fracture between the depths of 434 and 435 feet bgs. A subsequent 4 hour air-blow test indicated to the driller that the well was capable of 3 gallons per minute. Well PW-2 was then hydrofracked and the results of a 4-hour constant rate pumping test indicated to the driller that PW-2 was capable of yielding 14 gallons per minute. The driller chlorinated both wells to kill active well bacteria.

Wilmington Pump installed a Gould 10GS10412, 230 volt, 1 horsepower, 10 GPM submersible pump in well PW-1 at a depth of 300 feet bgs, and below the water bearing fractures. Wilmington also installed a Gould 10GS20412, 230 volt, 2 horsepower, 10 GPM submersible pump in well PW-2 at a depth of 588 feet bgs, and below the water bearing fractures. Figure 5 shows a schematic of the wells.

Following DEP's approval of a prolonged pump test, GHC conducted testing of the Boxborough Town Center, LLC wells in four stages: 1) Step-Test; 2) 10 days of

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Pretest Groundwater Monitoring, 3) a 5-day Pump Test, and 4) a 5-day Recovery Test. Well water quality sampling was conducted during the 5-day Pump Test.

Step-Tests

On October 20, 2016, GHC conducted Step-Tests in wells PW-1 and PW-2. Pressure transducers were used to record groundwater temperature and the depth of groundwater above the transducer in both wells during the tests. Well water discharge was measured using an instantaneous reading float discharge meter, and water discharge was through a 2-inch diameter hose to a location outside the Zone I and outside the Buffer Zone. Figure 6 presents a plan view of the well and discharge locations. The engineering firm Stamski & McNary Inc. worked with the Boxborough Conservation Commission and received approval for the discharge point shown in Figure 6.

The step-test for well PW-1 was conducted in three steps at pumping rates of 4.8, 9.3 and 14.1 gallons per minute. The step-test for well PW-2 was conducted in four steps at pumping rates of 4.0, 9.7, 10.2 and 13.6 gallons per minute. Pumping steps were run between 30 and 60 minutes.

Pretest Monitoring

Pretest monitoring followed the Step-Tests, and included the two BTC wells, PW-1 and PW-2, and four abutter wells, including the Carriage House, the two Sheriff's Meadow wells, and the Tisbury Meadow well. Pressure transducers were installed on November 3, 2016 in all six wells with temperature and depth recording intervals set at two minutes. Pretest monitoring started upon installation of each transducer. Figure 2 shows the location of the BTC wells and the four abutter wells.

The public well located at Centre Village Apartments at 688-700 Massachusetts Avenue was not monitored because Boxborough Town Center received no response to repeated attempts to contact the listed contact person.

5-Day Pump Test

Pump testing of the two BTC wells followed the Pretest monitoring and started at 11:29 on November 14, 2016 and continued until 11:45 on November 19, 2016. Transducers recorded temperature and depth data in the two pumping wells at one minute intervals during the first day of pumping, and at two minute intervals for the remainder of the pump test and recovery period. Pumping rates for the wells from the water meters were read and recorded, at a minimum, on an hourly basis for the entire pump test. The duration of the pump test was 7,216 minutes (5.01 days).

Two generators were onsite for the test, and both wells were powered by one generator with the second generator on standby. Groundwater flow was measured for the two BTC wells using new totalizing discharge meters. Prior to the start of the test well water levels were measured in wells PW-1 and PW-2. Figure 6 presents a plan view of the well and discharge setup for the test.

The pump test was interrupted by two generator failures, both on the second day of the test, 11/15/16. The first failure occurred at 10:10 and lasted for 44 minutes before the wells were powered by the standby generator. The second failure occurred

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approximately 6 hours later at 16:25 when the standby generator stopped. However, repairs had just been completed to the first generator and a technician was able to reconnect the first generator and restore power to the wells at 16:34 for a down-time of 9 minutes. The two failures totaled less than one hour of down-time, which is less than the 3 hour limit specified in the guidelines.

To control pumping rates for wells PW-1 and PW-2 during the five-day test, Dole® valves were used. Dole manufactures valves that limit discharge within a specified range. The valves are sensitive to inlet temperature and pressure, and with groundwater at almost a constant temperature, only a pressure regulator was needed to make adjustments to the flow rate. Figure 7 shows photographs of the well discharge setup for the two Regency wells.

5-Day Recovery Test

Following the 5-day pump test, the pressure transducers remained in the two Regency wells recording data for another 8,415 minutes (5.8 days). The pressure transducers in the abutter wells continued recording data for another 9,015 minutes (6.3 days) after the five-day test stopped.

Testing Results and Site Hydrogeology

Step-Test Results

Analysis of the step-tests was done using a spreadsheet developed by GHC based on the Theis[2] method. Test data and well characteristics are inputs for the spreadsheet, and a solution is obtained by varying the aquifer transmissivity and minimizing the root mean square difference between the observed step-test groundwater levels and the spreadsheet calculated levels. Figures 8 and 9 show results of the step-test analysis.

The step-test analyses calculated transmissivities for the bedrock aquifer around the two wells of 85 square feet per day for PW-1, and a value of 60 square feet per day for PW-2. Using the pump depths below groundwater as the aquifer saturated thickness, the bedrock aquifer hydraulic conductivity at PW-1 would be 0.30 feet per day, and for PW-2 the hydraulic conductivity would be 0.10 feet per day.

Based on these aquifer properties, GHC used a USGS spreadsheet model to predict 180-day drawdowns for wells PW-1 and PW-2 assuming a constant pumping rate of 12 gallons per minute for each well. Figures 10 and 11 present the results. The results indicated that after 180-days of pumping the drawdown in well PW-1 would be 53 feet and the drawdown in well PW-2 would be 78 feet. Based on these calculations, the predicted drawdowns were above the pumps, so the 5-day pump test rates were set at 12 GPM for each well.

Pump Test Results

The goal of the 5-day pump test was to show that wells PW-1 and PW-2 were capable of providing 20,660 gallons per day of potable water. Assuming equal

[2] Theis, C.V. 1935. *The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Ground-Water Storage.* Transactions of the American Geophysical Union, Washington, D.C.

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pumping from both wells means that each well would need to be approved for 7.2 gallons per minute. In order to be approved for 7.2 GPM the wells would need to stabilize at a pumping rate of 9.5 GPM using the Guidelines approval factor of 75 percent.

After the start of the test and as drawdown data from the test became available, it appeared that PW-1 was not being over pumped and could stabilize between 11 and 12 GPM. However, the data for well PW-2 indicated a problem. As Figure 13 shows, late on November 14th the slope of the PW-2 drawdown plot began to increase. By early the next day the slope had become steep and that predictions showed that the well would not stabilize at 12 GPM. Based on this information, an adjustment to a lower rate was be needed.

The first planned pumping adjustment for PW-2 was set for the morning of the second day, November 15th. However, before an adjustment could be made, the first generator failure occurred. After power was restored, the pumping rate of PW-2 was lowered from 12 to 10 GPM to slow the increasing rate of drawdown. Also, to minimize drawdown effects in PW-2 from PW-1, the pumping rate of PW-1 was lowered to 11.5 GPM.

As the test continued, while the plot of the drawdown slope for PW-2 had decreased, the concern was that the drawdown of PW-2 might again experience an increase in slope and not be able to meet the 180-day stabilization criteria at 10 GPM. As a result, the pumping rate of well PW-2 was lowered from 10 to 8 GPM on 11/17/16 at 5:00 PM, leaving approximately 43 hours until shutdown of the test.

Lowering the pumping rate of PW-2 to 8 GPM meant that the approved rate for PW-2 would be 6 GPM, and that well PW-1 would need to achieve a pump test rate of 11.2 GPM, in order for the two wells to be approved for the project demand of 20,660 GPD. Revised calculations of Zone I radii for the adjusted pumping rates showed that a 262 foot radius for PW-1 and a 240 foot radius for PW-2 would remain outside the developed portion of the property. Figures 12 and 13 show plots for wells PW-1 and PW-2 of the well drawdown and pumping rate versus time for the pump test and recovery periods.

Ambient Conditions and Precipitation

To assess ambient conditions during the well tests, GHC used the USGS well in Acton (MA-ACW 158) located 5.5 miles to the east of BTC. Although the USGS well is completed in sand and gravel, the daily groundwater levels recorded in the well provide a hydrograph of trends in local groundwater. To estimate precipitation, GHC used data from three private weather stations posted on the Weather Underground web site. The following table presents details of the ambient well and weather stations.

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Table 1. Ambient Well and Weather Station Details.

Station	Location	Latitude (º)	Longitude (º)	Elev (ft)	Distance (mi)
MA-ACW 158	Acton	42.4700	-71.4122	153	5.5
KMASTOW2	Stow	42.460	-71.518	268	1.4
KMAHARVA6	Harvard	42.487	-71.554	354	1.9
KMAACTON3	Acton	42.493	-71.469	224	2.7

Three weather stations were used because of spatial variation in rainfall. The Harvard station is located west of the BTC property, the Stow station to the south, and the Acton station to the east. GHC took a simple average of the precipitation data from the three stations. Figure 14 shows the groundwater levels from the ambient wells and average precipitation data from the three weather stations. The figure shows that groundwater levels declined less than 0.1 feet during the pump test, including the pretest, 5-day and recovery periods. A little more than 0.5 inch of rain occurred during the 5-day test on the second day, but, as the USGS shows, had little effect on groundwater levels. Overall, ambient conditions and precipitation had no significant effects on the testing of the two BTC wells.

Abutter Wells

Four abutter wells were monitored during the 10-day pretest, the 5-day pump test, and the 5-day recovery. The wells included: the Carriage House on Massachusetts Avenue, Tisbury Meadows on Stow Street, and two wells at Sheriff's Meadow, and are shown in Figure 2. Water levels in these four wells were read at two minute intervals for the entire test. Figures 15, 16, 17 and 18 present plots of the water level data for the four abutters.

During the 10 day pretest period, water levels in all the abutter wells went down and up as water was being used by residents and pumps were turning on and off to meet the demand. Each well exhibited a fairly regular pumping cycle, but the cycles for the four wells were very different. For example, water levels in the Carriage House well typically cycled up and down as much as 12 feet several times a day. The Tisbury Meadow well cycled up and down about 9 feet several times each day. The two Sheriff's Meadow wells cycled up and down between 40 and 60 feet three or four times a day.

During the 5-day pump test, the water level in the Carriage House well was about 1 foot lower than during the pretest period, but returned to the pretest levels when the test was finished. Water levels in the Tisbury Meadow well were about 3 to 4 feet lower on two days, 11/17 and 11/8, but came back to their normal level on the 11/19 before the end of the pump test. Both of the Sheriff's Meadow wells showed no lowering of groundwater levels during the test.

A log of the Carriage House well shows that the well pump is set at 180 feet below ground surface in the well. The well log also shows the static groundwater level in the well is 11 feet below ground. Allowing for the current drought, if static

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groundwater in the well were at 30 feet below the ground, the well would have 150 feet of water above the pump. The typical pumping cycle for the Carriage House well is 12 feet, and an additional 1 foot drop in the groundwater level would have no significant impact on this well.

In addition, the BTC wells pumped more than 143,00 gallons of water in 5 days, which is 39% more than the total once developed. Also, when developed, almost all the water pumped from the two wells will be returned to groundwater at the leach field. Both of these factors will work to further reduce any well impacts.

The isolated two day drop in water level in the Tisbury Meadow well is likely due to extra water use and pumping during those two days and not the pumping of the two BTC wells. GHC personnel were at Tisbury Meadow downloading the transducers on 11/17 and 11/18 and noticed the Tisbury Meadow buildings were being power washed. This additional use of water would require additional pumping which would result in lower than normal groundwater levels in the Tisbury Meadow well.

Analysis of the Pump Test Drawdowns

Analysis of the 5-day pump test drawdown data was done using the Cooper-Jacob Recovery Method using spreadsheet software developed by the US Geological Survey[3]. The results of the USGS method yielded a bedrock aquifer transmissivity of 33 square feet per day for well PW-1 and a value of 22 square feet per day for well PW-2. Figures 19 and 20 present summaries of the spreadsheet analyses. The following table presents the calculated aquifer properties for both wells based on the 5-day pump test data:

Table 2. Bedrock Aquifer Properties Based on 5-Day Pump Test Data.

Well	Transmissivity (sf/d)	Saturated Thickness (ft)	Hydraulic Conductivity (ft/d)
PW-1	33	262	0.13
PW-2	22	550	0.04

Site Hydrogeology

Based on GHC's aquifer testing and observed site conditions, the Boxborough Town Center, LLC wells are located in an area where bedrock wells are commonly used to provide potable water to the residents of Boxborough. Overburden soils are thin and tend to consist of sand, silt and clay mixtures that do not normally provide adequate water for even single family homes. Based on the MassDEP Well Search web site, data for 880 bedrock wells in Boxborough show and average depth of about 350.

Based on the drill logs from Gap Mountain Drilling, Site bedrock is a low to moderately fractured granite that yields water to wells. Recharge to the bedrock aquifer is from the thin overburden aquifer which receives water from rainfall that does not runoff to local streams and wetlands.

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[3] Halford, K.J. and Kuniansky, E.L. 2002 *Documentation of Spreadsheets for the Analyses of Aquifer-Test and Slug-Test Data*. USGS Open File Report 02-197.

Approvable Yield

Figures 21 and 22 show plots of the measured drawdowns in the two BTC wells with the drawdown extended to 180 days. For well PW-1 the 180-day drawdown extends to 74 feet allowing 188 feet of water (72% of the initial water column) to remain above the pump.

Because the extended drawdown for well PW-2 remained almost level, it wasn't possible to predict a 180-day drawdown. To do this, GHC plotted a 180-day drawdown for PW-2 using the aquifer characteristics calculated from the pump test data and the 8 GPM pumping rate from the test. Figure 23 shows drawdown in PW-2 lowering to 130 feet over the 180-day period, allowing 420 feet of water (76% of the initial water column) to remain above the pump setting.

Over the 5 days of the pump test, well PW-2 pumped a total of 62,293 gallons over 7,216 minutes for an average rate of 9.6 gallons per minute. Once the pumping rate of PW-2 was lowered to 8 GPM at 5:00 PM on 11/17/16, a total of 20,447 gallons was pumped over the final 2,567 minutes of the pump test, for a stabilization rate of 8.0 gallons per minute.

Well PW-1 was pumped a total of 80,790 gallons over the 5 days of the pump test, for an average rate of 11.2 gallons per minute. For a similar time period as PW-2, between 5:00 PM on 11/17/16 and the end of the test (2,563 minutes), well PW-1 was pumped a total of 28,822 gallons, for a stabilization rate of 11.2 gallons per minute.

Based on this data, the two Boxborough Town Center wells meet the stabilization criteria for bedrock community wells. The Boxborough Town Center wells have shown to be capable of providing water at 19.2 gallons per minute. Applying a 0.75 safety factor, as required by the guidelines, the Approvable Yield of the two wells is 14.4 gallons per minute, or 20,736 gallons per day, capable of meeting the demand of the Boxborough Town Center, LLC project.

Correspondence

See Enclosure 4.

Groundwater Quality

Sampling

During the 5-day test, groundwater was sampled from the two wells for field testing and laboratory analyses. Sampling ports on the discharge piping were used to sample groundwater from the two wells. Field testing of the samples consisted of pH, odor, conductivity, temperature, and carbon dioxide, using a YSI field instrument and a Hach kit for just the carbon dioxide. Samples were taken on four occasions during the 5 days, and samples were analyzed immediately.

Sampling of the wells for laboratory analyses took place at three times during the 5 day test: 1) after the first hour of pumping, 2) after 2.5 days of pumping, and 3) at the end of the 5 days. Samples were collected in containers provided by Alpha Analytical and immediately placed in an iced cooler. Coolers with the samples were transported to Alpha Analytical Laboratory under a chain-of-custody protocol.

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Alpha Analytical did all the analyses in-house except for the Synthetic Organic Contaminants which were analyzed by Granite State Analytical Services, LLC, and radioactive analyses which were performed by Hazen Research, Inc. Enclosure 3 presents the MassDEP Drinking Water Forms, and Enclosure 5 presents the laboratory reports.

Results

The following table presents the results of the field analyses.

Table 3. Results of Field Sampling Analyses.

					PW-2			
Tests	**11/14**	**11/15**	**11/16**	**11/19**	**11/14**	**11/15**	**11/16**	**11/19**
pH	7.56	7.53	7.74	7.56	7.82	7.65	7.87	7.44
Odor	none	none	none	none	none	none	none	none
Conductivity (µS/cm)	531	493	465	445	554	552	540	545
Temp ºC	10.6	10.5	10.6	10.5	11.1	10.8	11.0	11.4
CO2 (mg/l)	20	15	15	12	45	25	35	28

As Table 3 shows, water from wells PW-1 and PW-2 are within expected ranges for pH and temperature, and no odor was detected in the samples. Water conductivity was on the high side in the range where water is slightly hard, but it is not expected to cause drinking water problems. Dissolved CO2 ranged between 12 and 45 mg/l, and are also not ecpected to cause drinking water problems.

As shown in Enclosure 3, analysis of the groundwater samples obtained during the 5-day pump test revealed only iron and manganese above state standards. The results for both wells and the two sampling dates are shown in the following table.

Table 4. 5-Day Pump Test Iron and Manganese Results.

	PW-1		**PW-2**		**DW**
Test	**11/16**	**11/19**	**11/16**	**11/19**	**Standard**
Iron (mg/l)	ND	ND	0.470	0.339	0.30
Manganese (mg/l)	0.159	0.109	1.39	1.40	0.05

As the table shows, manganese was detected in both wells at concentrations greater that the state drinking water standard. However, iron was only detected in PW-2, and at concentrations greater than the drinking water standard.

Treatment of Groundwater

As iron and manganese occur at concentrations exceeding their respective drinking water standards, it will be necessary to remove these metals from the water. The manganese concentration in the BTC well water is relatively high and iron may at some time in the future appear in PW-1.

Options being considered for water treatment include: cation exchange water softening, or green sand plus pressure vessels.

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Details of this system will be submitted along with the pumping facility design details.

Zone 1 Site Plan and Land Use

Figure 24 presents surveyed locations of the Boxborough Town Center, LLC property lines and the Boxborough Town Center, LLC Wells. The follow table presents Zone I and Interim Wellhead Protection radii based on approved pumping rates for each well:

Table 5. Zone I and IWPA Radii Based on Approved Pumping Rates.

Well	Approved Pumping Rate (gpm)	Zone I Radius (ft)	Interim Wellhead Protection Radius (ft)
PW-1	8.4	262	669
PW-2	6.0	240	592

The IWPA radius for PW-1 is large enough to include the IWPA of PW-2.

Pumping Facility (Design and Specifications)

To be submitted at a future date.

Water Supply Business Plan

To be submitted at a future date.

Source Redundancy Requirement

To meet the source redundancy requirement, Boxborough Town Center, LLC is planning the use of 40,000 gallons of atmospheric storage. Details of the storage will be presented with the Pumping Facility plans.

If you have any question, please call me.

Sincerely,
GeoHydroCycle, Inc.

Stephen W. Smith, P.E., P.HGW.

Enclosures:
1 - Figures
2 - Bedrock Well Logs
3 - MassDEP Drinking Water Forms
4 - Correspondence
5 - Laboratory Reports
6 - Copies of Transmittal Form and BRP WS-15 Form

cc: James Fenton, Fenton and Son, Inc.
Richard Harrington, Stamski & McNary, Inc.

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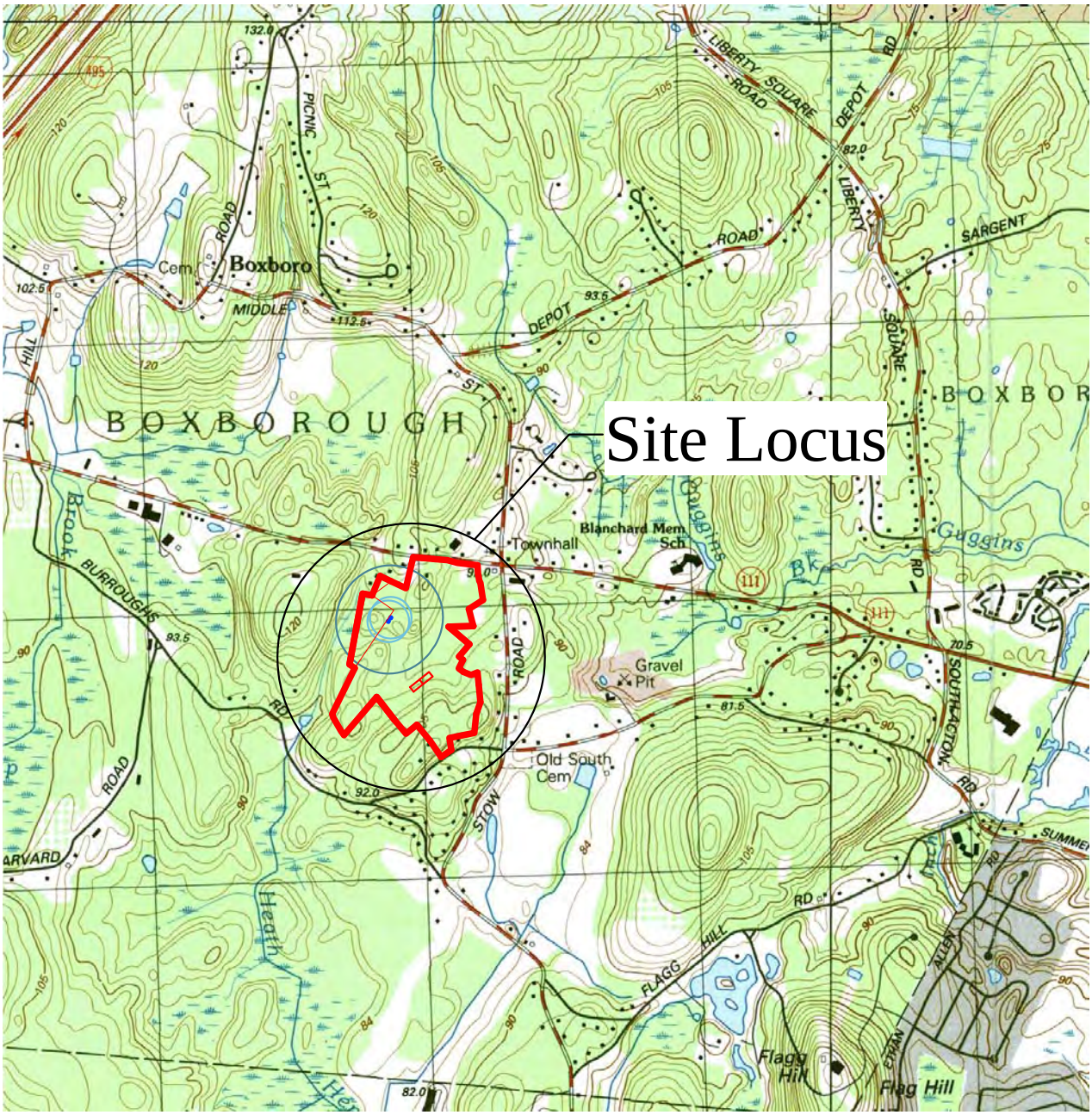
Enclosure 1 - Figures



0 2,000

Scale in feet

Base Map: MassGIS Quads q201910 & q201914.

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Figure 1. Site Locus.

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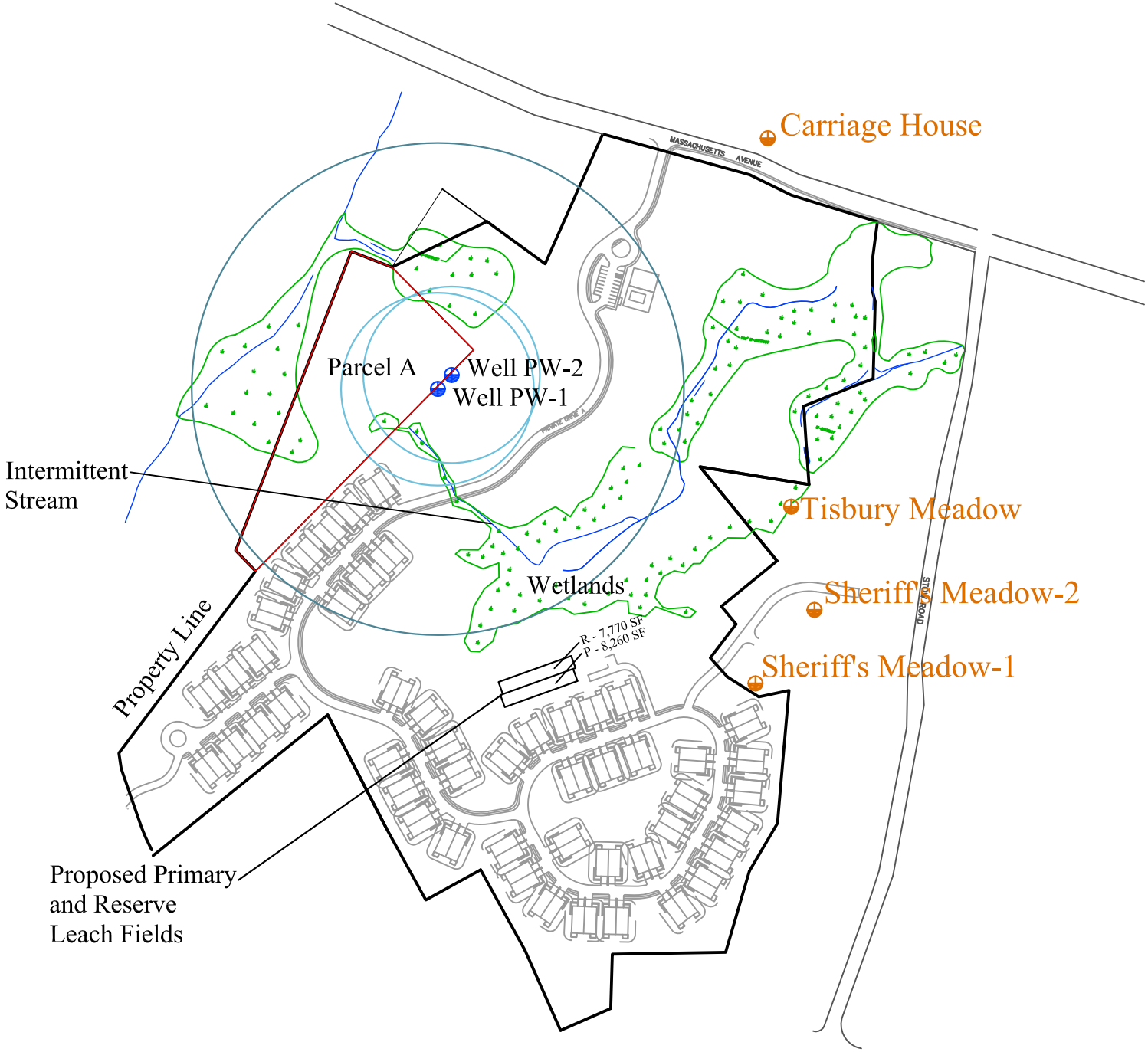

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Figure 2. Site Features.

0 400
Scale in feet

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Base Map: CAD files obtained from Stamski & McNary.

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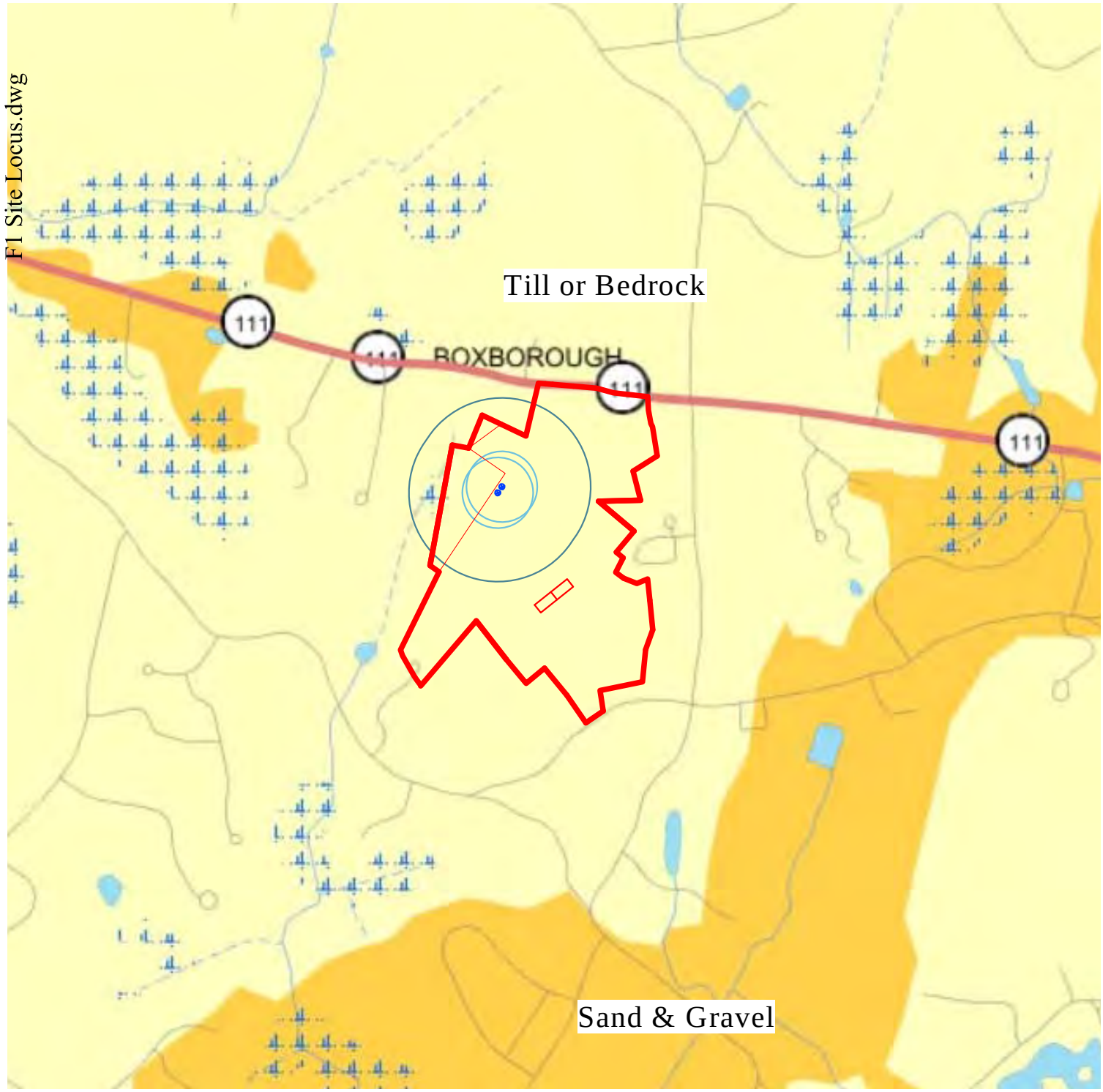

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Scale in feet

Base Map: MassGIS Web Site.

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Figure 3. Surficial Geology.

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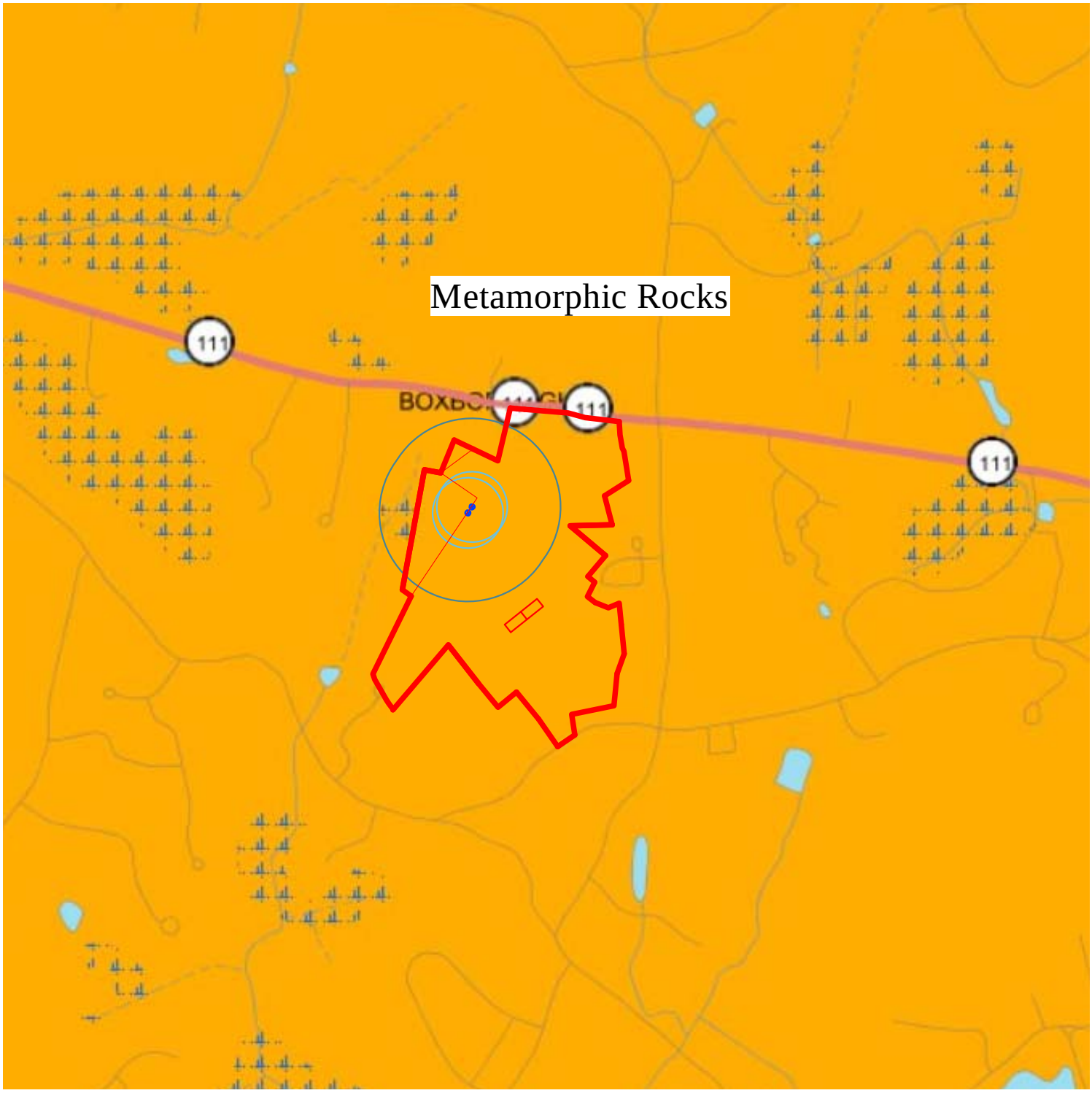

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Scale in feet

Base Map: MassGIS Web Site.

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Figure 4. Bedrock Geology.

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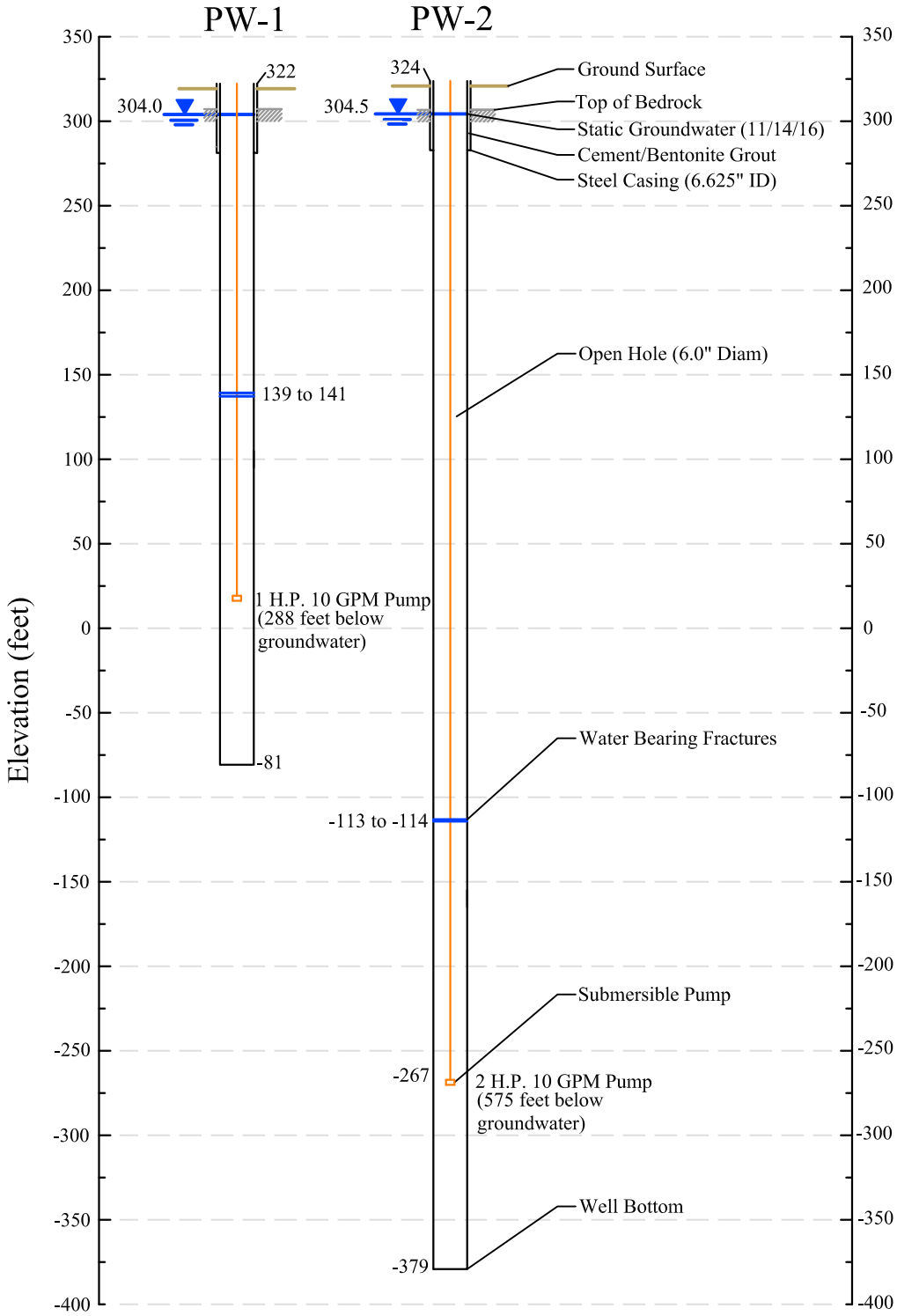

NOTES

1. Wells drilled by Gap Mountain Drilling, LLC on 8/17/16 (PW-1) and 8/23/16 (PW-2).
2. Upon completion of drilling, well yields were: PW-1 at 25 gpm by air blow-down for 4 hours; and PW-2 at 14 gpm by pump for 4 hours.
3. Pumps installed by Wilmington Pump on 9/28/16.
4. Depth to groundwater recorded on 9/28/16.

Well Location Sketch

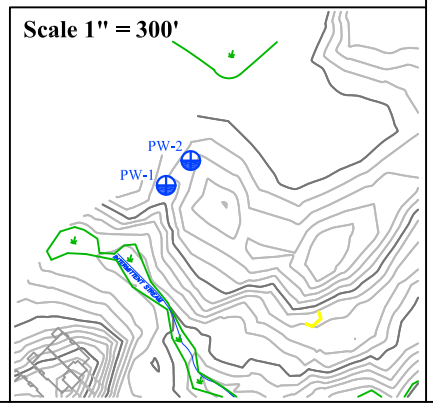

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Figure 5. Schematic Diagram of the BTC Wells.

Scales as shown.

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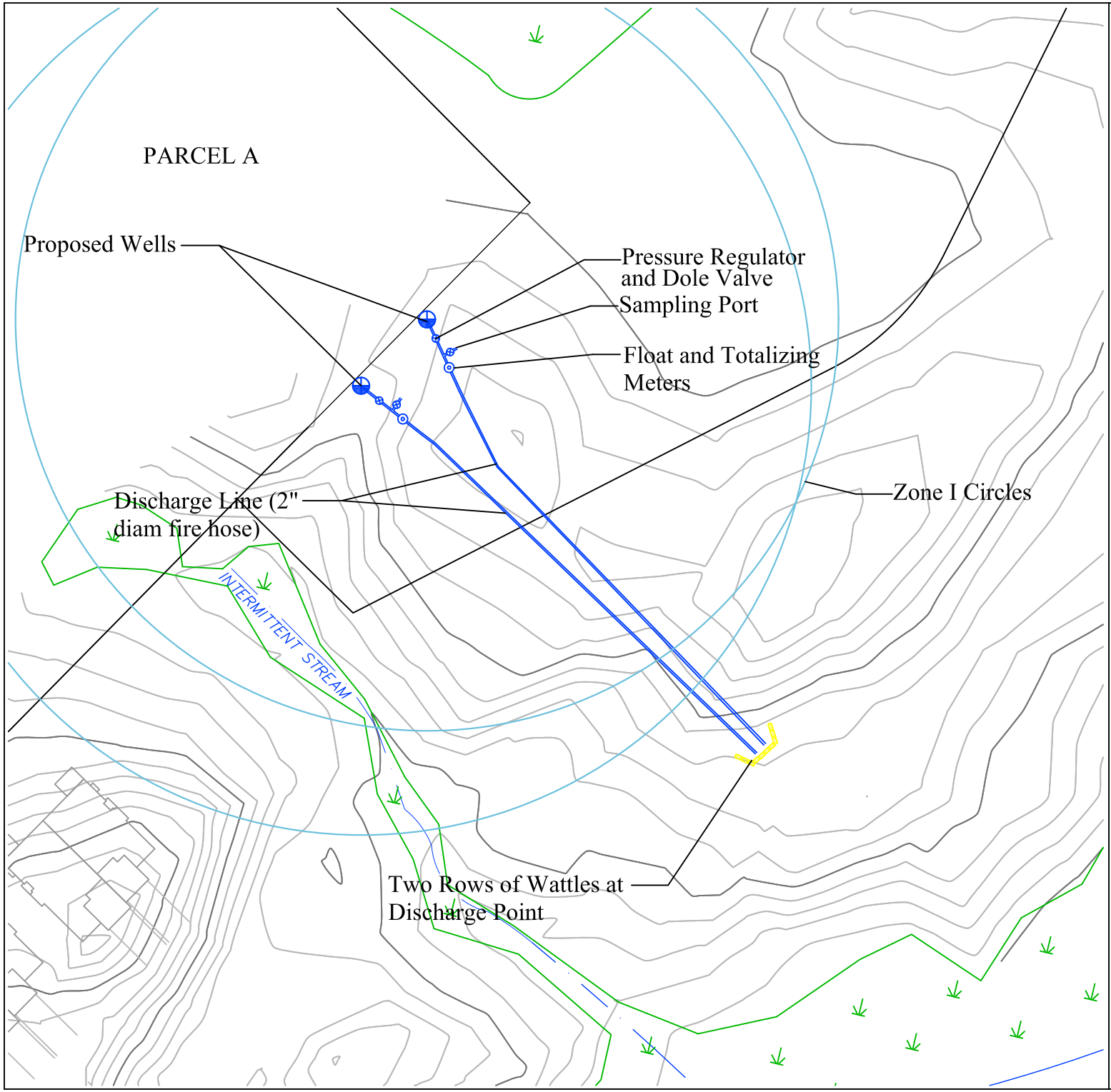
Drafted SWS Checked
Date 9/29/16 Rev 12/8/16
Base Map: CAD files and elevations obtained from Stamski & McNary.

GeoHydroCycle, Inc.



Boxborough Town Center, LLC
Massachusetts Avenue
Boxborough, MA
01719

Figure 6. Well Testing Setup.

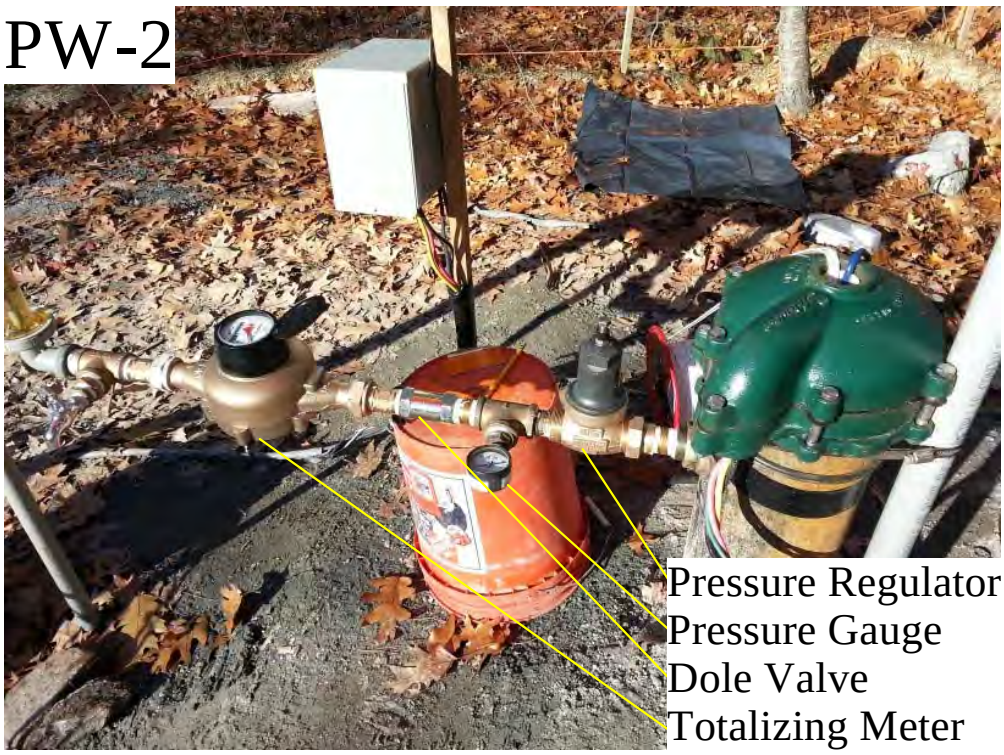
0 80
Scale in feet

Project No. GHC#15005
Drafted SWS Checked
Date 3/22/16 Rev 1/3/17
Base Map: CAD files obtained from Stamski & McNary.

GeoHydroCycle, Inc.

PW-1

PW-2



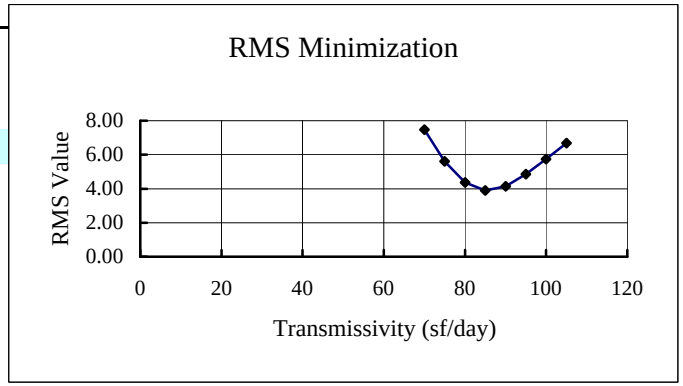
Not to Scale	Figure 7. Well Flow Control Setup.	
Photographs taken during pump test.	Project No. GHC#15005 Drafted SWS Checked Date 12/1/16 Rev	Boxborough Town Center, LLC Massachusetts Avenue Boxborough, MA 01719
GeoHydroCycle, Inc.		

Figure 8. Step-Test Analysis, Well PW-1.

Step-Test Analyses (Theis Method)

Input Parameters		
Total pumping time =	153.83	minutes
Well Radius =	0.25	feet
Est Storage Coefficient =	0.00001	
Est Transmissivity =	85.0	sf/day
T =	0.06	sf/min
1/(4*Pi*T) =	1.3481	min/sf
Sat Thickness:	262	feet
Hydraulic conductivity:	0.32	ft/day

T	RMS
70	7.47
75	5.61
80	4.36
85	3.89
90	4.15
95	4.86
100	5.75
105	6.68



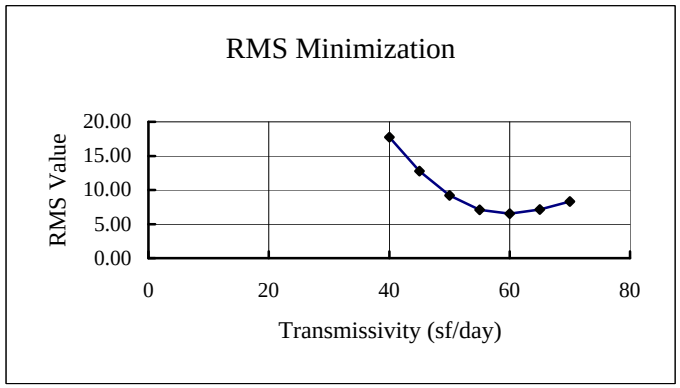
Step	Pumping Rate Q_i (gpm)	(cf/min)	ΔQ_i (cf/min)	Pumping Time t_i (min)	$t-t_i$ (min)	u	W(u)	ΔQi * W(u)	Predicted s	Measured s	RMS
1	4.82	0.64	0.64	0	153.83	1.72E-08	17.3007	11.15	15.0	10.4	21.71
2	9.26	1.24	0.59	39.17	114.66	2.31E-08	17.0068	10.09	28.6	25.3	11.28
3	14.10	1.89	0.65	94.17	59.66	4.44E-08	16.3535	10.58	42.9	46.4	12.43
										Total RMS =	3.89

Figure 9. Step-Test Analyses, Well PW-2.

Step-Test Analyses (Theis Method)

Input Parameters		
Total pumping time =	157	minutes
Well Radius =	0.25	feet
Est Storage Coefficient =	1.0E-05	
Est Transmissivity =	60.0	sf/day
T =	0.04	sf/min
1/(4*Pi*T) =	1.9099	min/sf
Sat Thickness:	550	feet
Hydraulic conductivity:	0.11	ft/day

T	RMS
40	17.76
45	12.76
50	9.21
55	7.11
60	6.54
65	7.15
70	8.33



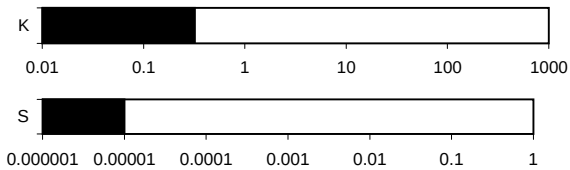
	Pumping Rate			Pumping Time							
	Q_i		ΔQ_i	t_i	$t-t_i$				Predicted	Measured	
Step	**(gpm)**	**(cf/min)**	**(cf/min)**	**(min)**	**(min)**	**u**	**W(u)**	**ΔQi * W(u)**	**s**	**s**	**RMS**
1	4.02	0.54	0.54	0	157	2.39E-08	16.9728	9.12	17.4	8.8	74.84
2	9.70	1.30	0.76	44.83	112.17	3.34E-08	16.6366	12.63	41.5	38.8	7.56
3	10.20	1.36	0.07	77.33	79.67	4.71E-08	16.2944	1.09	43.6	50.4	45.85
4	13.57	1.81	0.45	105.17	51.83	7.24E-08	15.8645	7.15	57.3	88.4	968.47

Total RMS = 6.54

Figure 10. PW-1 Pre-Test Drawdown Prediction, Theis (1935)

Input Data for prediction of drawdown

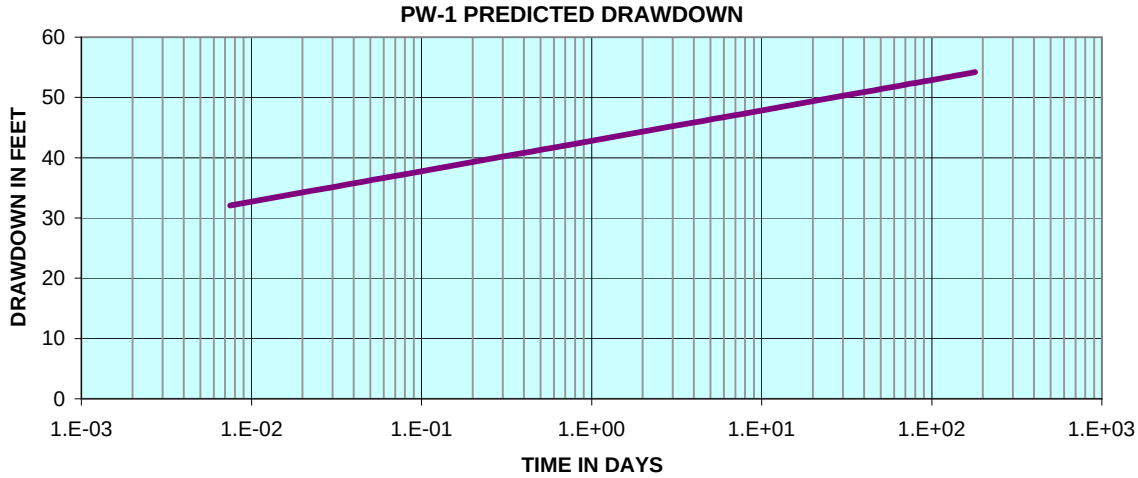
Hydraulic conductivity, K, ft/day	0.32
Aquifer Thickness, b, ft	262
Storage Coefficient, S	0.00001
Pumping Rate, Q, GPM	12
Distance from well, r, ft	0.25



Equation used in prediction

$$s = \frac{Q(W(u))}{4\pi T} \qquad u = \frac{r^2 S}{4Tt}$$

s is drawdown, W(u) is the well function



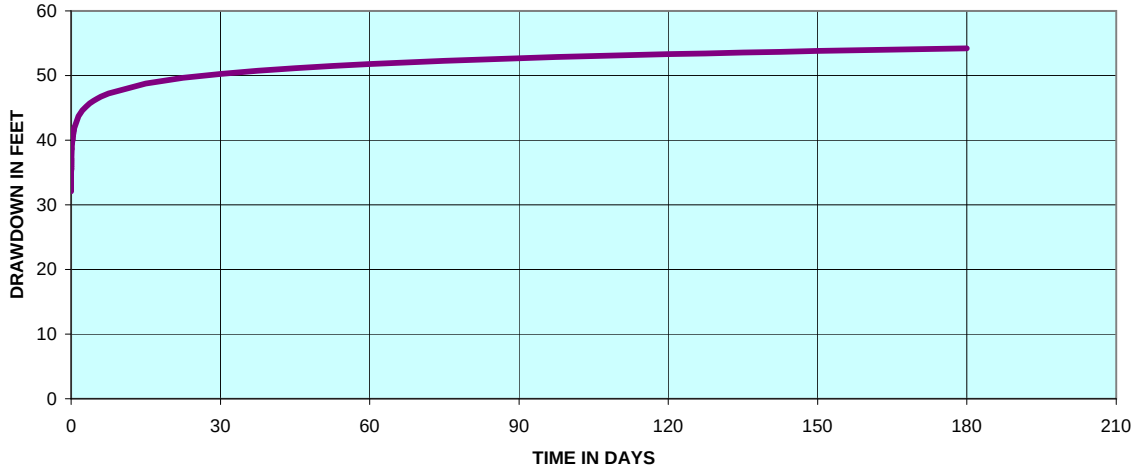
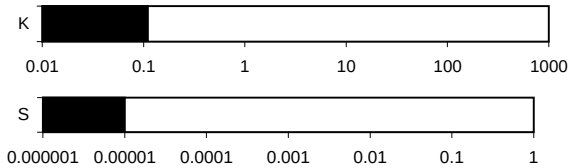


Figure 11. PW-2 Pre-Test Drawdown Prediction, Theis (1935)

Input Data for prediction of drawdown

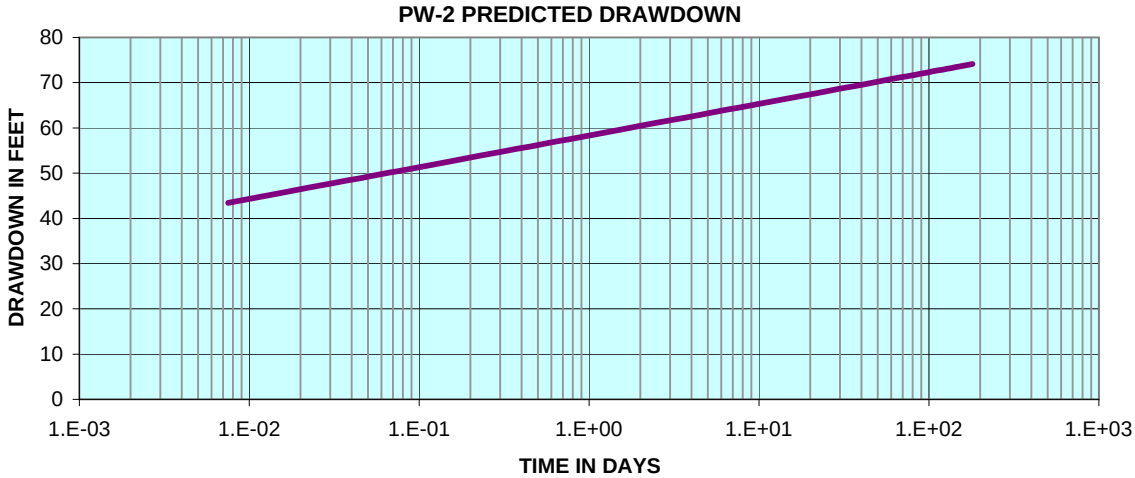
Hydraulic conductivity, K, ft/day	0.11
Aquifer Thickness, b, ft	550
Storage Coefficient, S	0.00001
Pumping Rate, Q, GPM	12
Distance from well, r, ft	0.25



Equation used in prediction

$$s = \frac{Q(W(u))}{4\pi T} \qquad u = \frac{r^2 S}{4Tt}$$

s is drawdown, W(u) is the well function



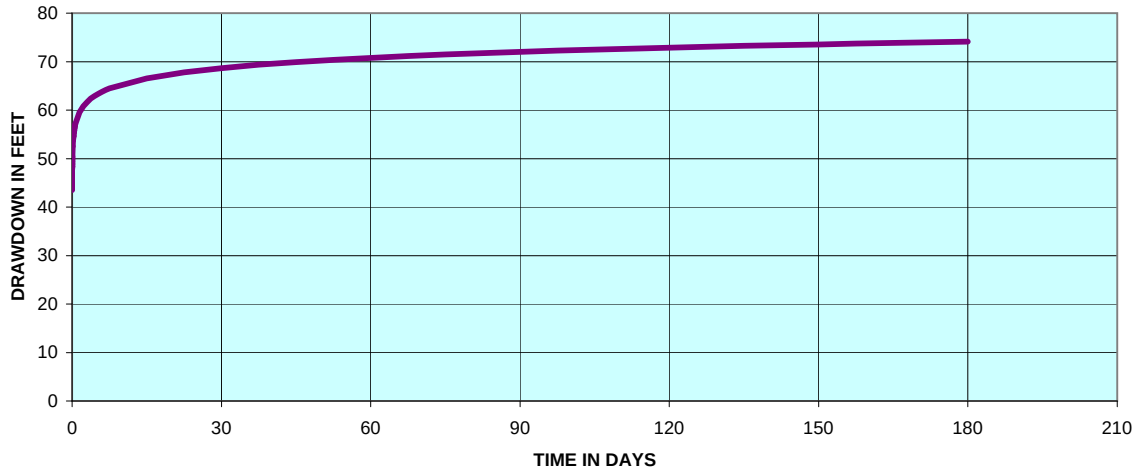


Figure 12. PW-1 Drawdown and Pumping Rate Graph.

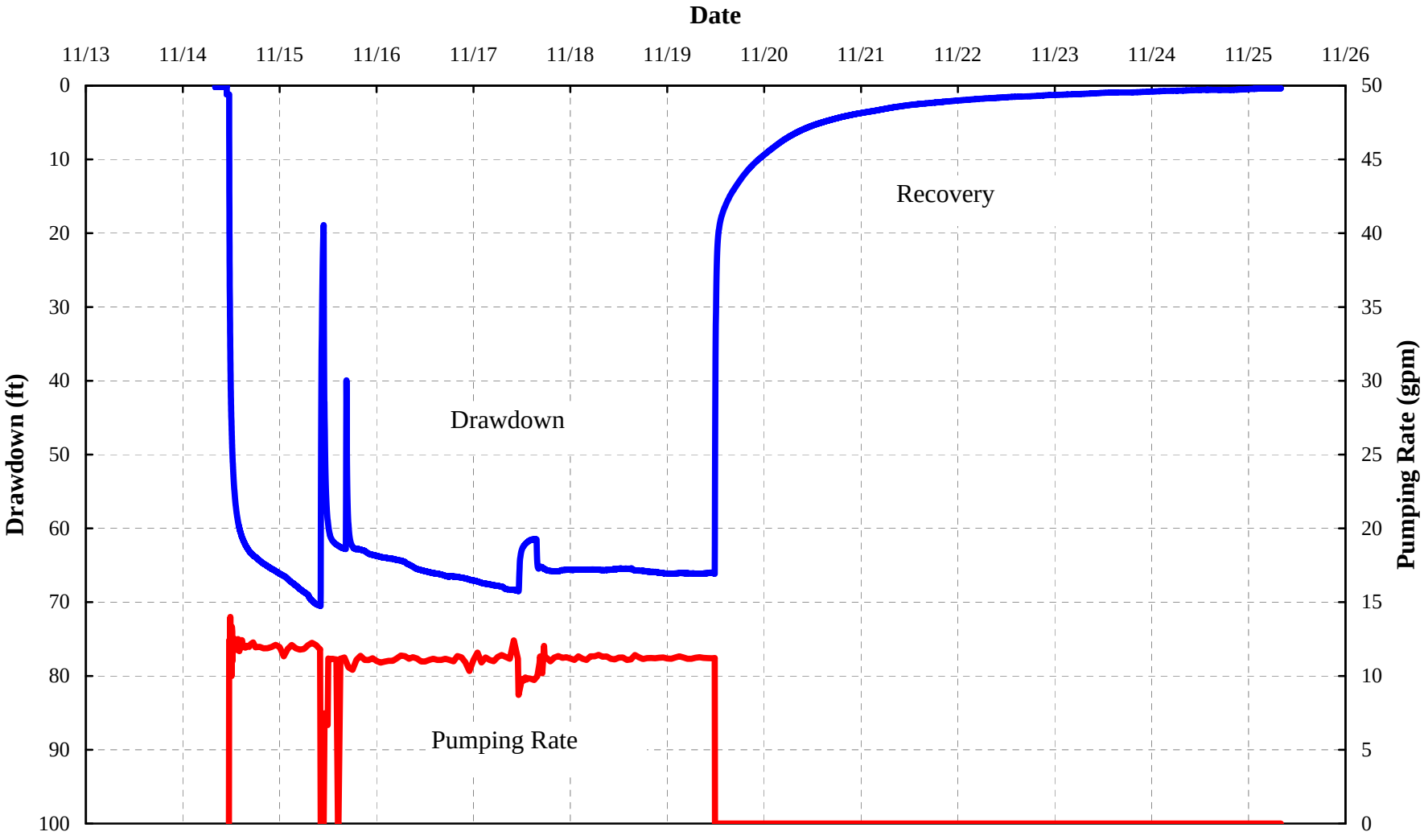
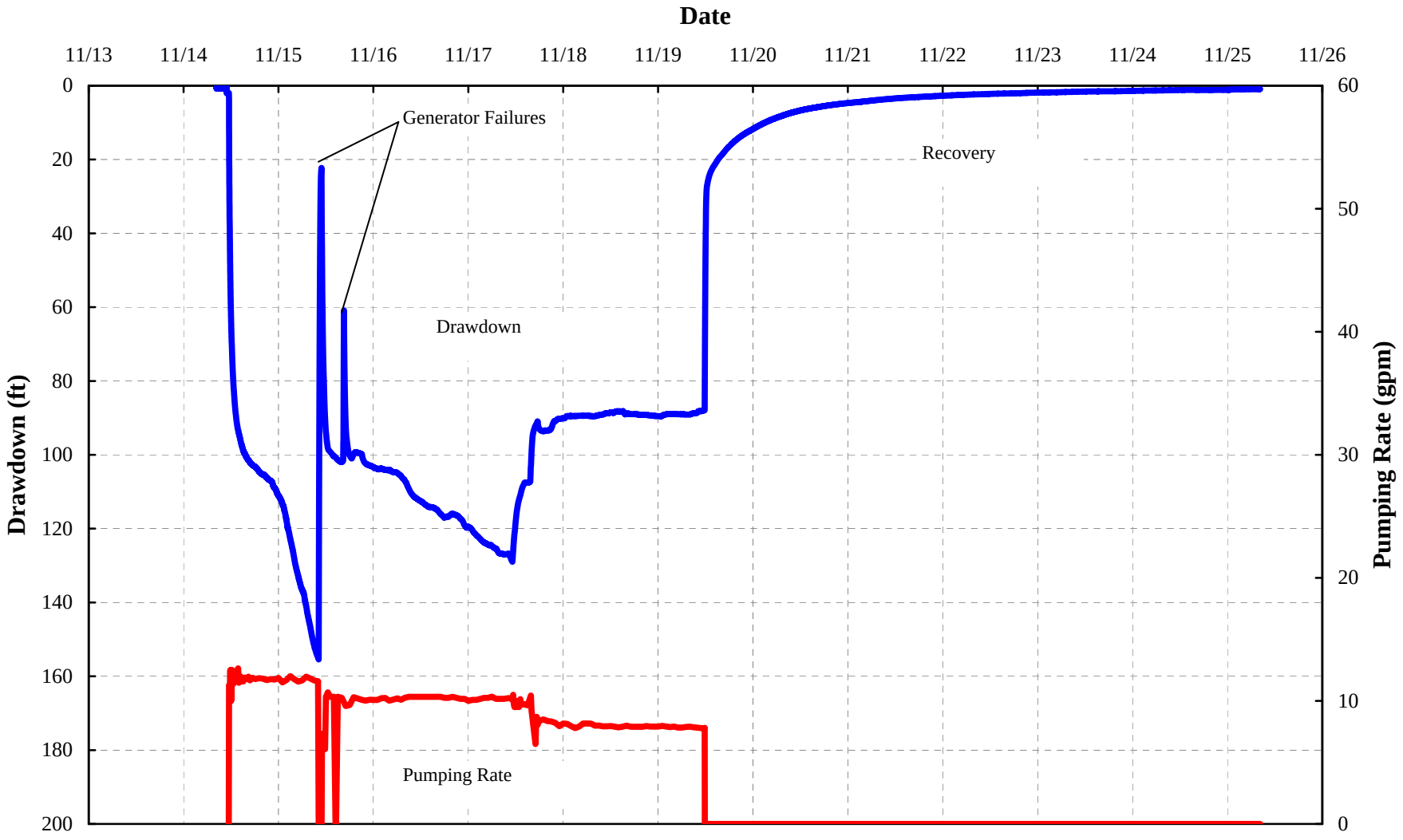


Figure 13. PW-2 Drawdown and Pumping Rate Graph.



F14. Ambient Well and Precipitation Graph.

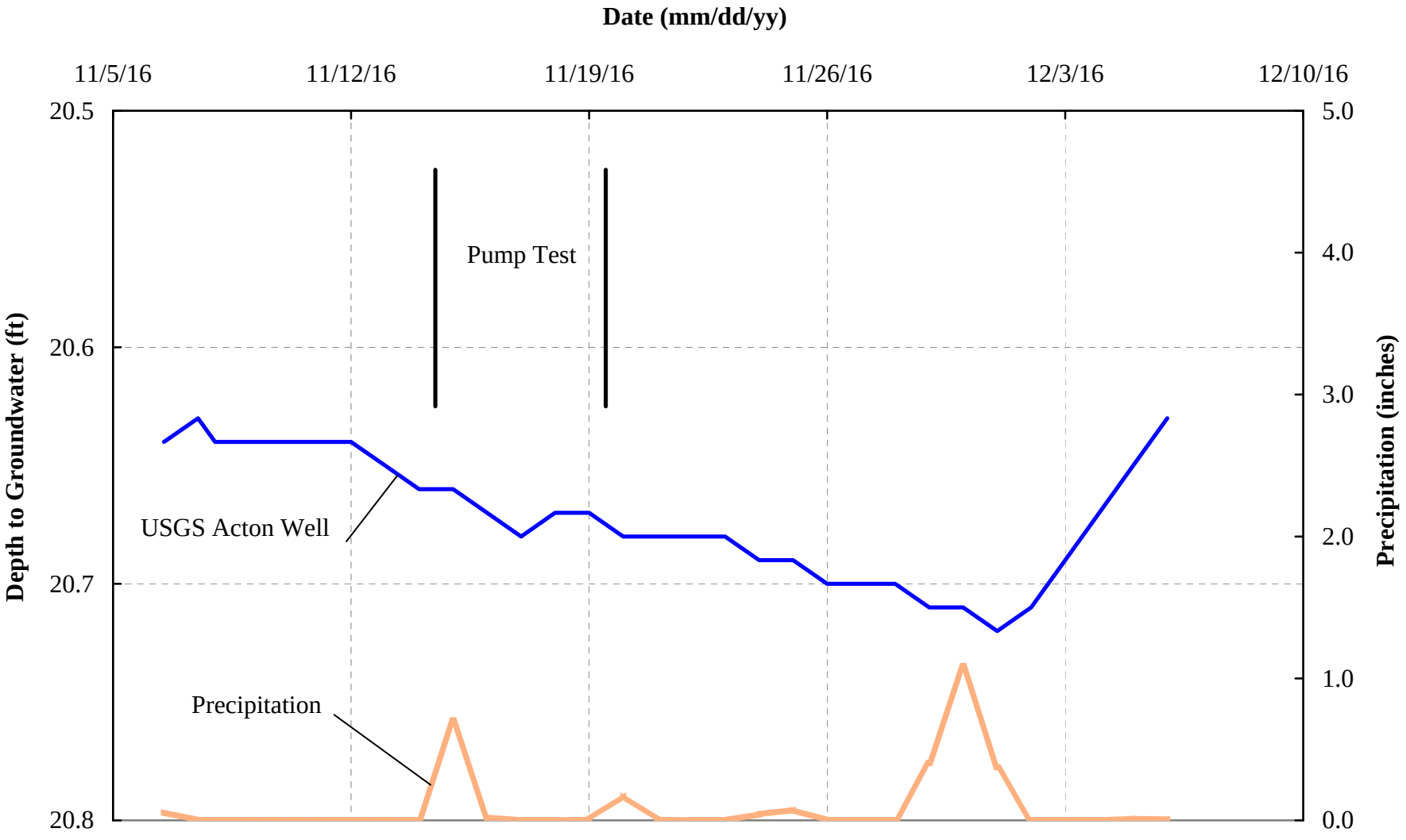


Figure 15. Carriage House Well.

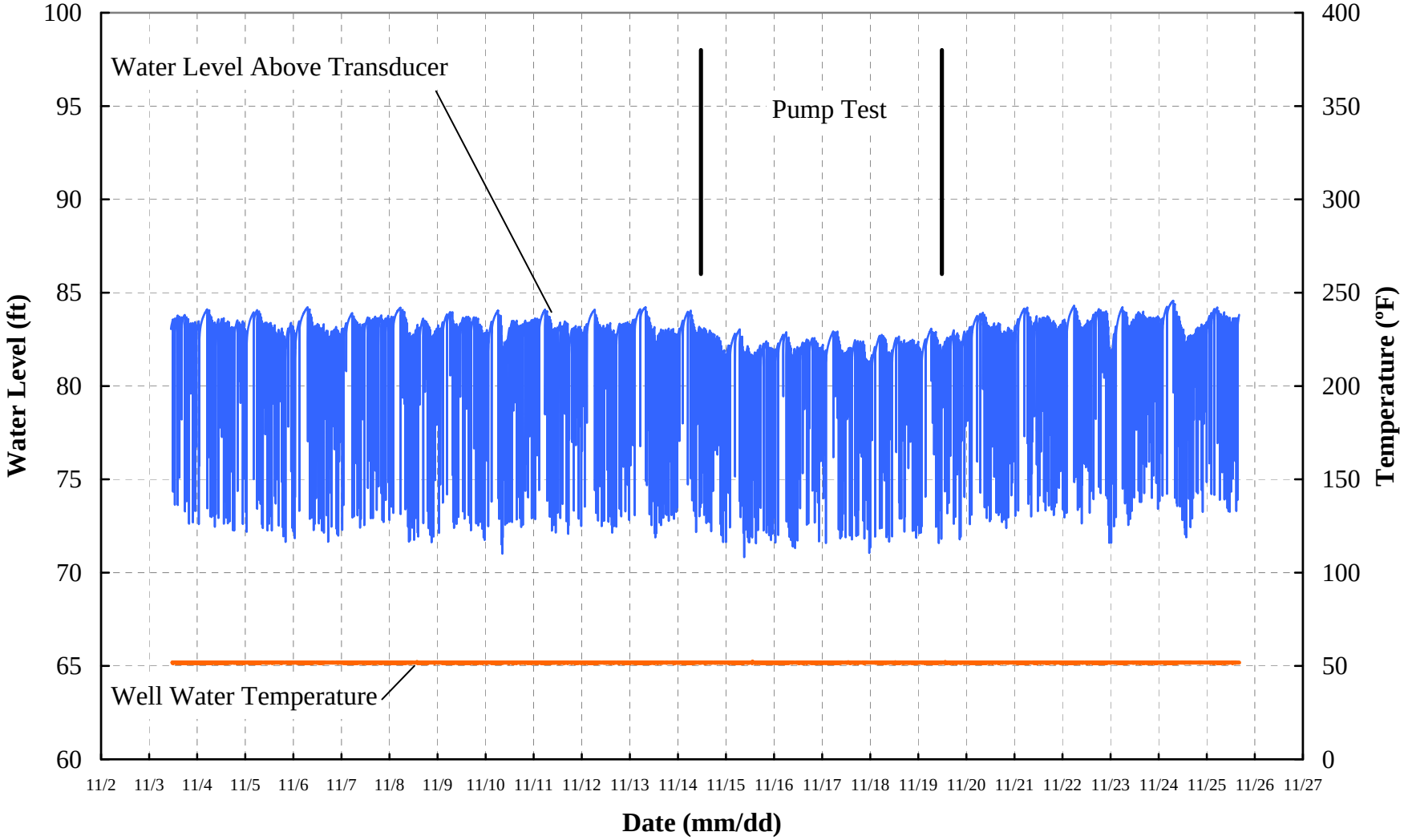


Figure 16. Tisbury Meadow Well.

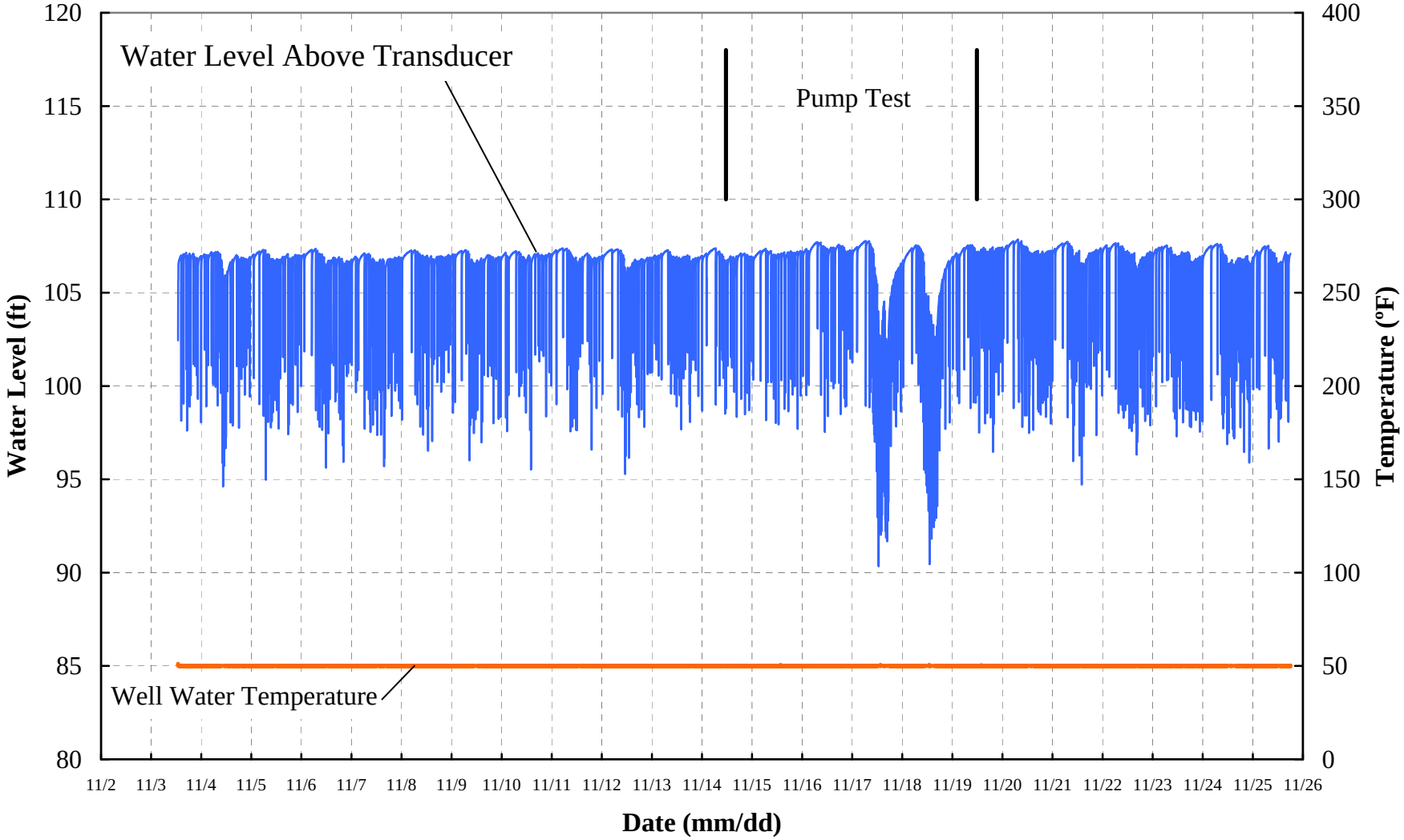


Figure 17. Sheriff's Meadow Well-1.

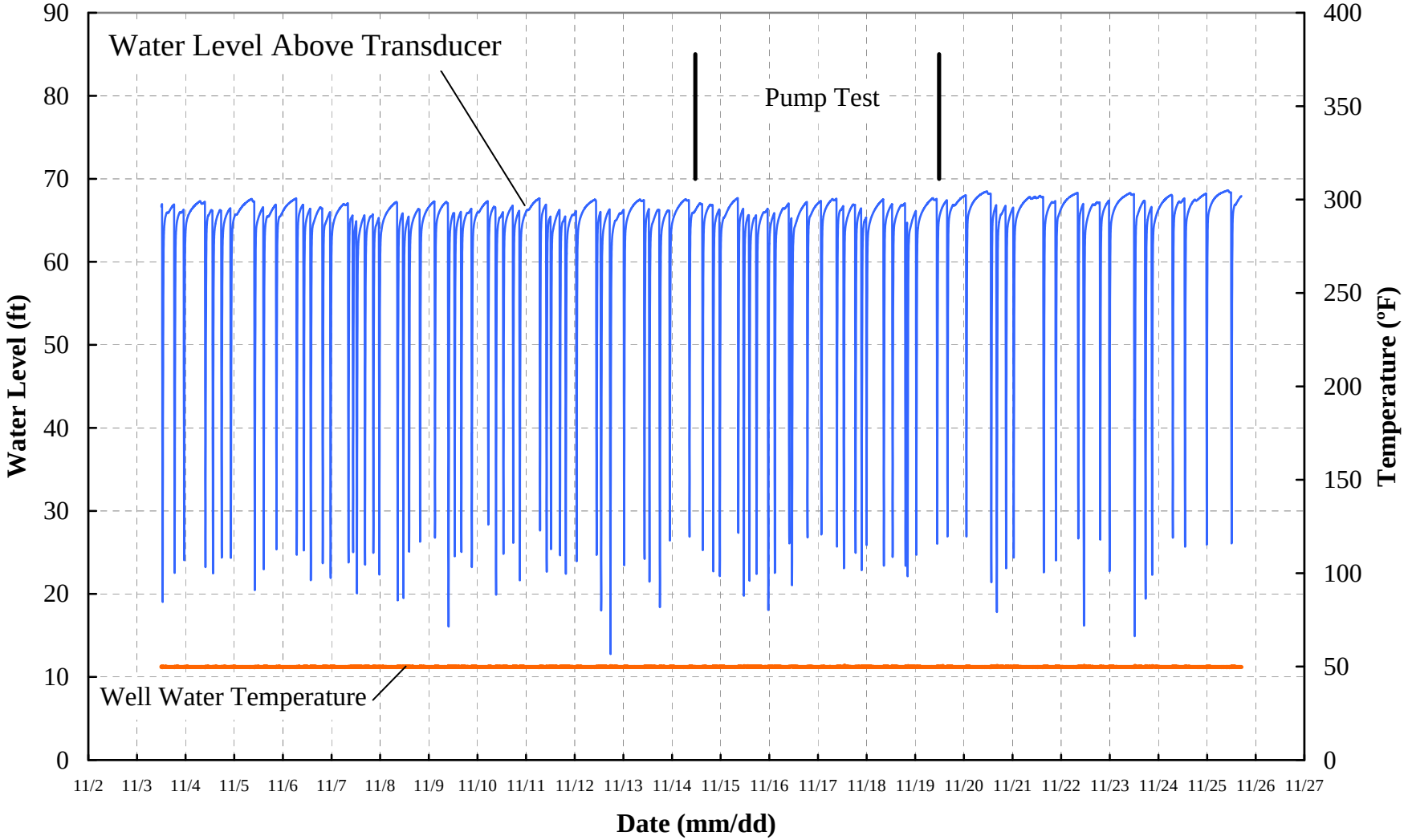


Figure 18. Sheriff's Meadow Well-2.

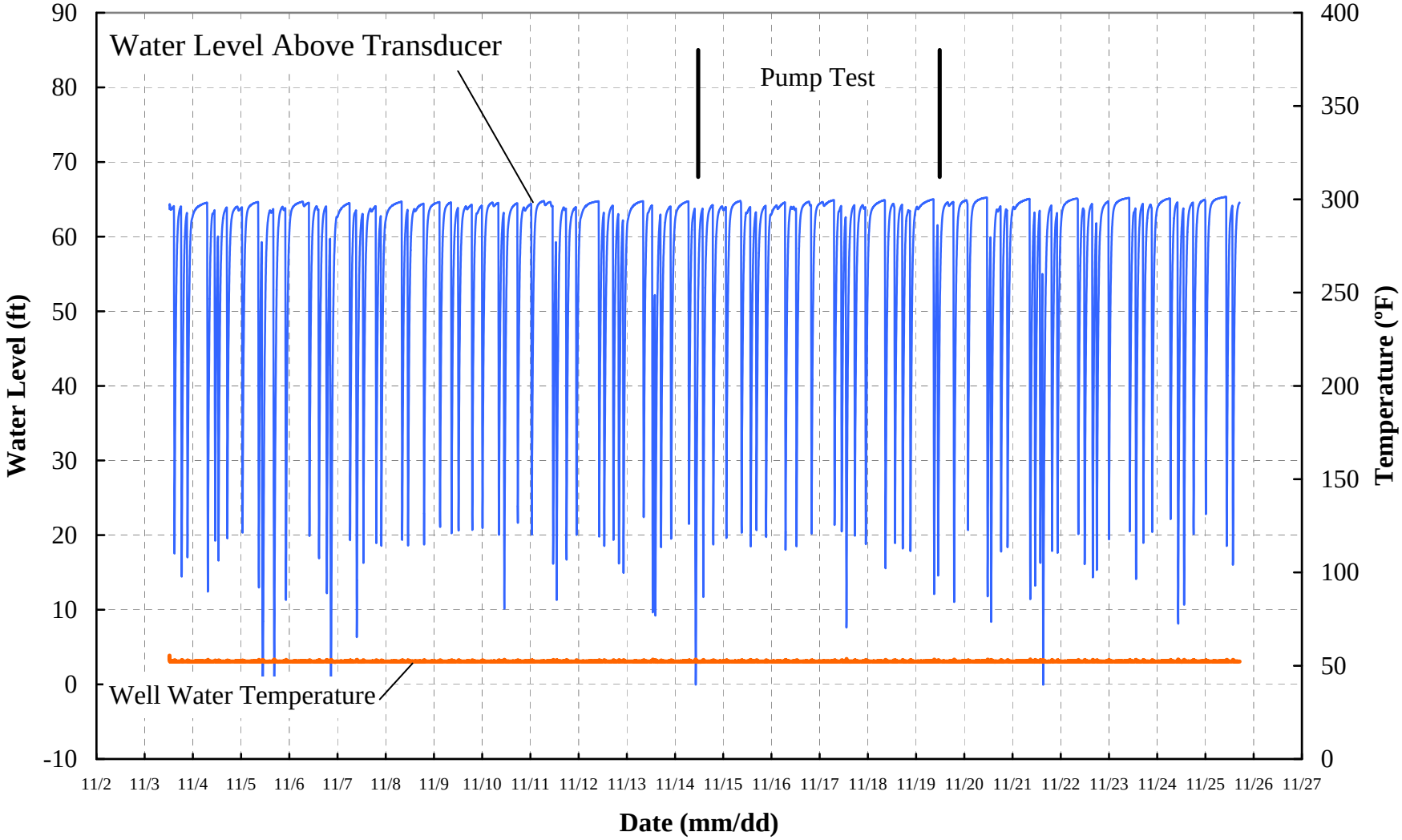


Figure 19. Spreadsheet Recovery Analyses.

WELL ID: PW-1

Local ID: PW-1
Date: 11/19/2016
Time: 0:00

INPUT

Construction:		
Casing dia. (d_c)	6	Inch
Annulus dia. (d_w)	6	Inch
Screen Length (L)	262	Feet
Depths to:		
water level (DTW)	18.2	Feet
Top of Aquifer	41	Feet
Base of Aquifer	303	Feet
Annular Fill:		
across screen --	Open Hole	
above screen --	Cement	
Aquifer Material --	Fractured Igneous and	
FLOW RATE	11.2	GPM

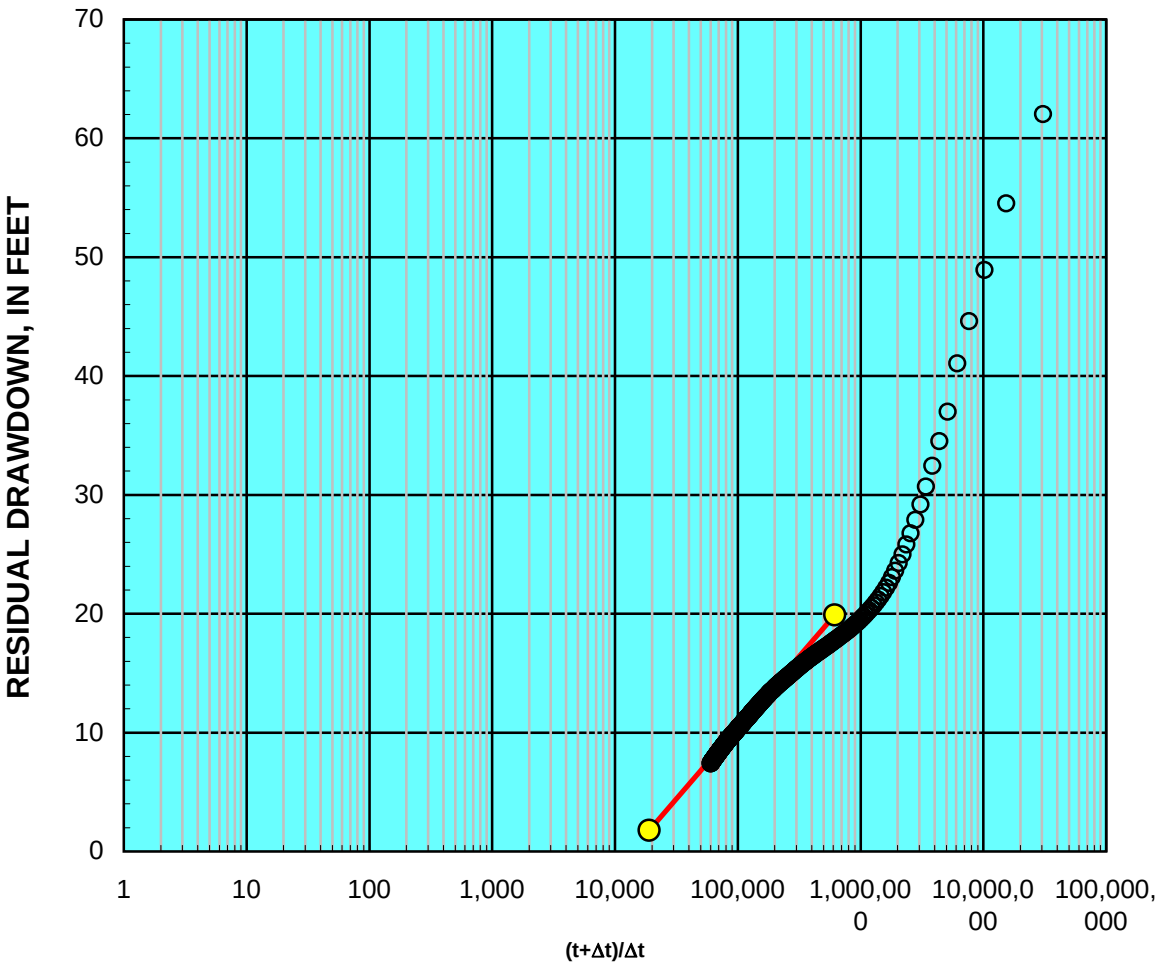
COMPUTED

Aquifer thickness = 260 Feet

Slope = 11.993377 Feet/log10

Input is consistent.

K = 0.13 Feet/Day
T = 33 Feet²/Day



REMARKS: Cooper-Jacob recovery analysis of single-well aquifer test

Regency at Boxborough Well PW-1
Pump Test: 11/14/16 through 11/19/16

Figure 20. Spreadsheet Recovery Analyses.

WELL ID: PW-2

Local ID: PW-2
Date: 11/19/2016
Time: 0:00

INPUT

Construction:		
Casing dia. (d_c)	6	Inch
Annulus dia. (d_w)	6	Inch
Screen Length (L)	550	Feet
Depths to:		
water level (DTW)	19.5	Feet
Top of Aquifer	41	Feet
Base of Aquifer	591	Feet
Annular Fill:		
across screen --	Open Hole	
above screen --	Cement	
Aquifer Material --	Fractured Igneous and	
FLOW RATE	9.6	GPM

COMPUTED

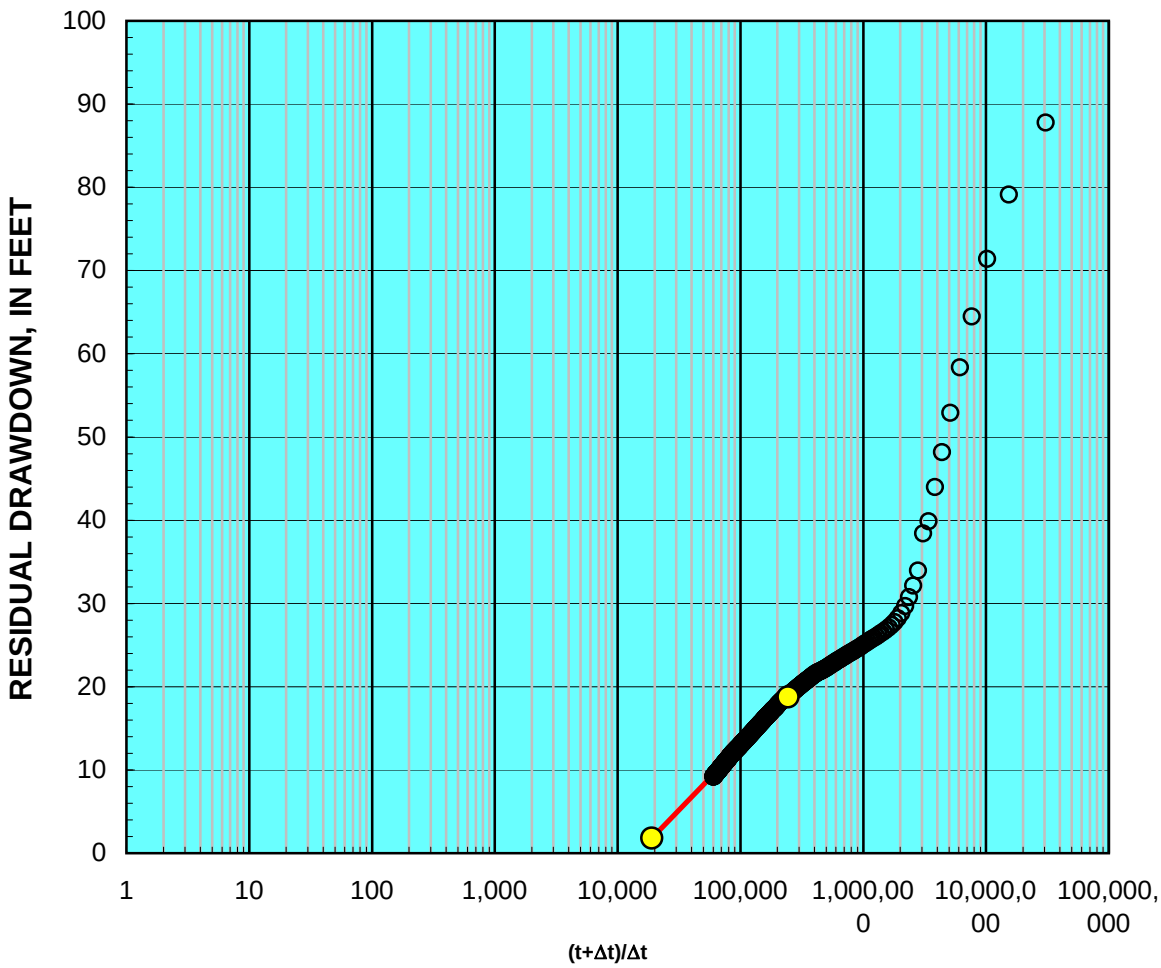
Aquifer thickness = 550 Feet

Slope = 15.306306 Feet/log10

Input is consistent.

K =	0.04	Feet/Day
T =	22	Feet²/Day

K= 0.04 is less than likely minimum of 0.05 for Fractured Igneous and Metamorphic Roc



REMARKS: Cooper-Jacob recovery analysis of single-well aquifer test

Regency at Boxborough Well PW-2
Pump Test: 11/14/16 through 11/19/16

Figure 21. PW-1 180 Day Drawdown Prediction

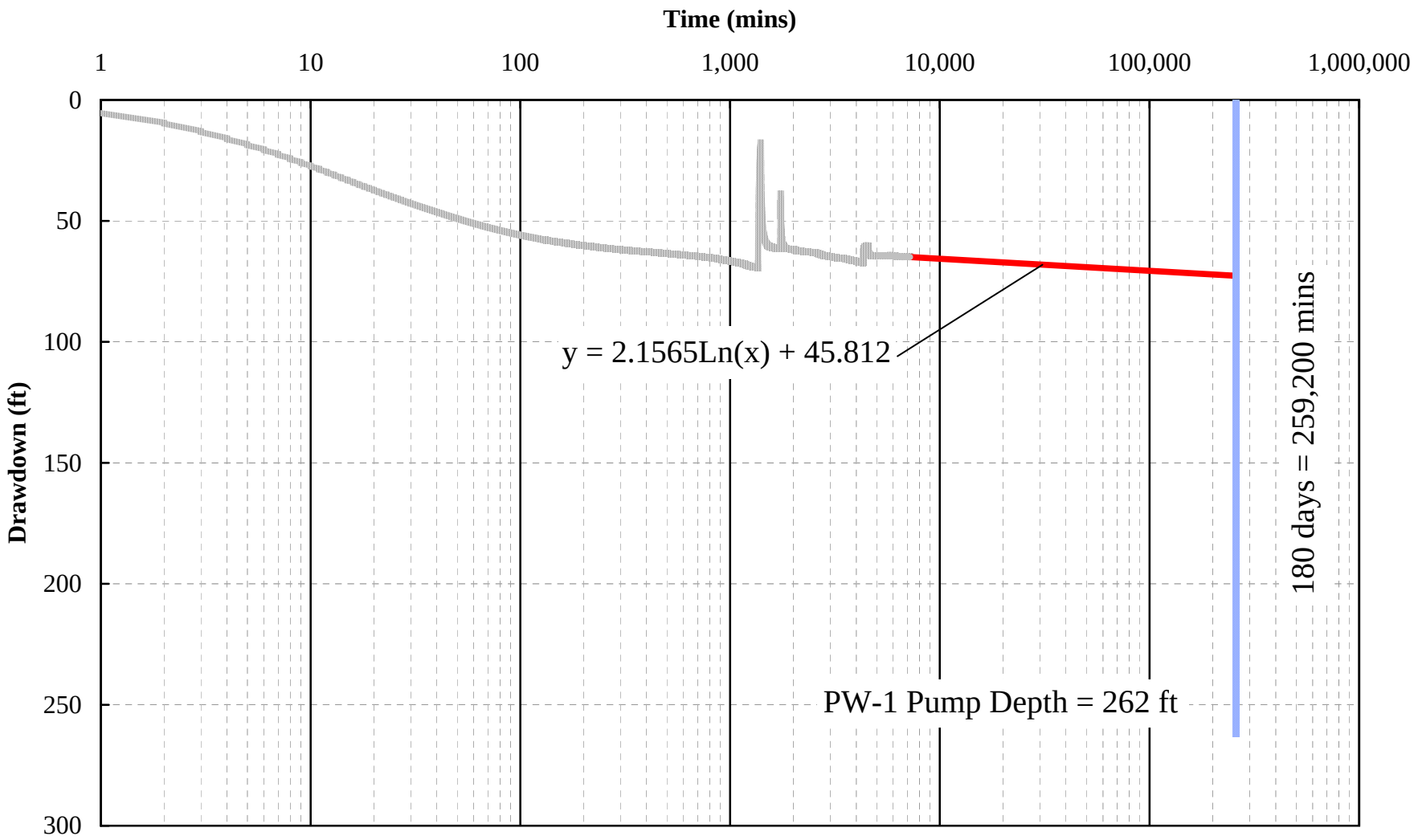


Figure 22. PW-2 180 Day Drawdown Prediction

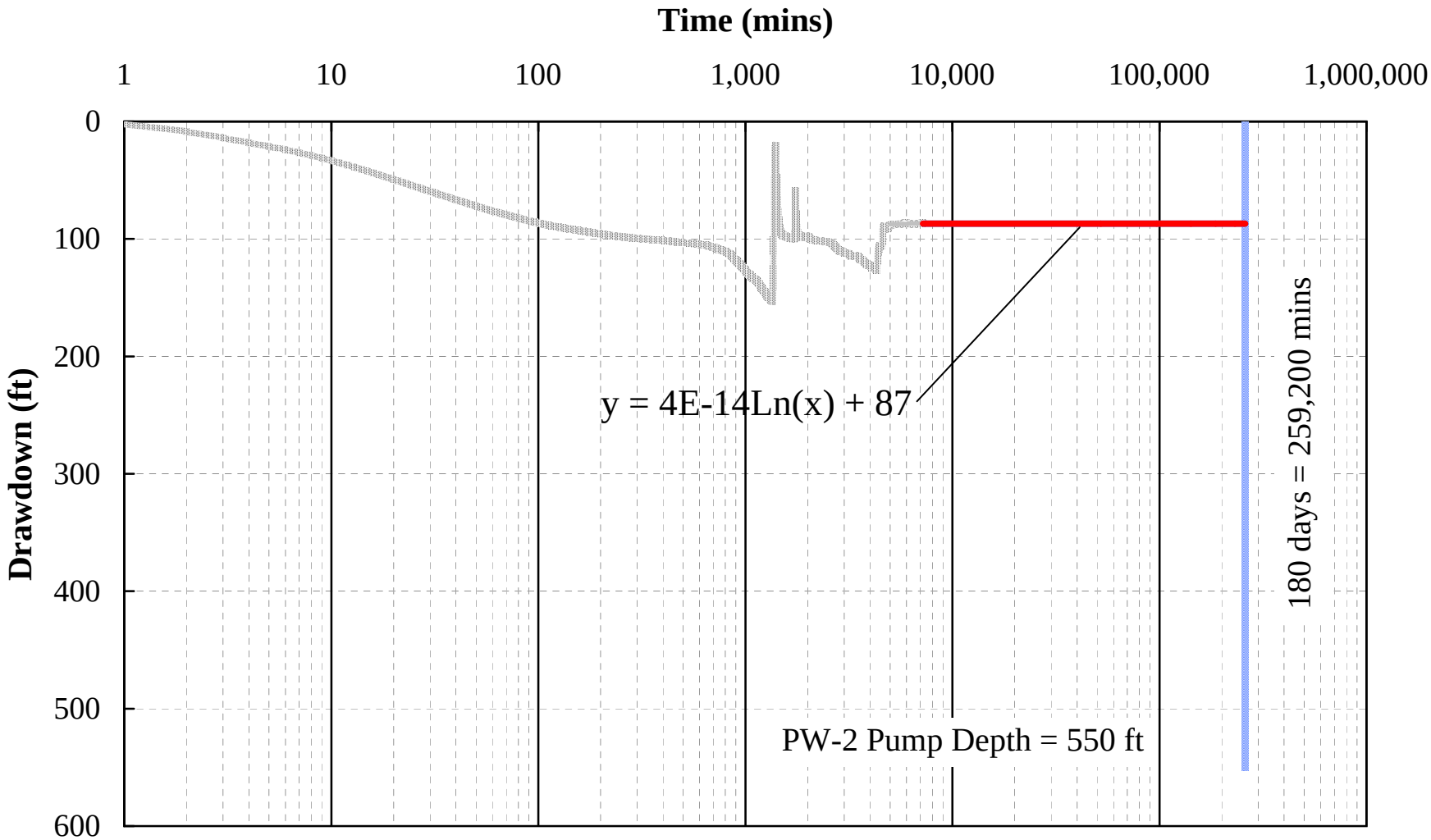
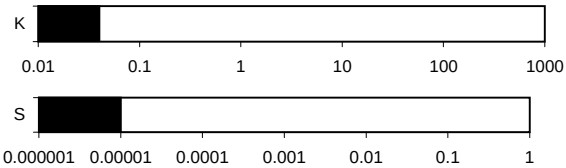


Figure 23. PW-2 180-Day Drawdown Prediction, Theis (1935)

Input Data for prediction of drawdown

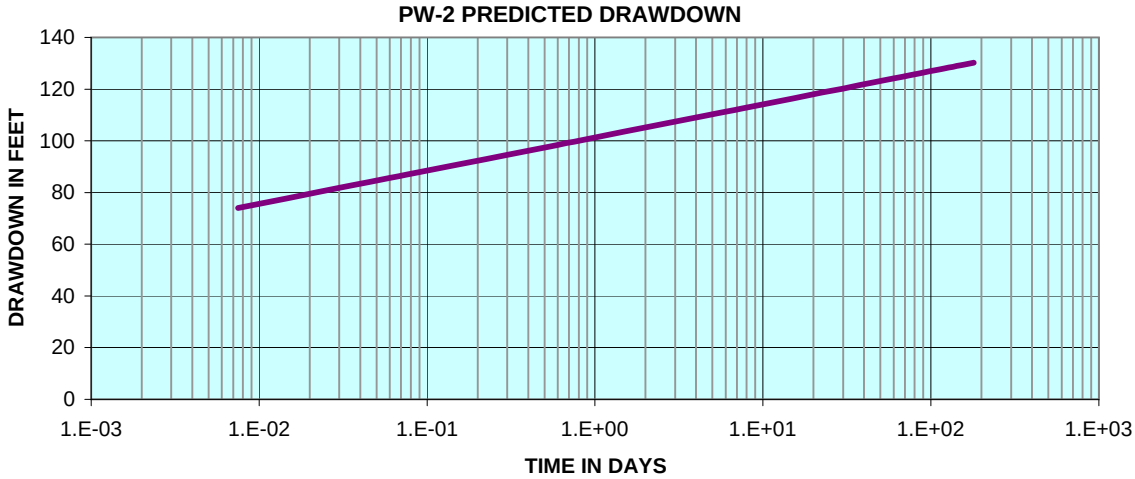
Hydraulic conductivity, K, ft/day	0.04
Aquifer Thickness, b, ft	550
Storage Coefficient, S	0.00001
Pumping Rate, Q, GPM	8
Distance from well, r, ft	0.25

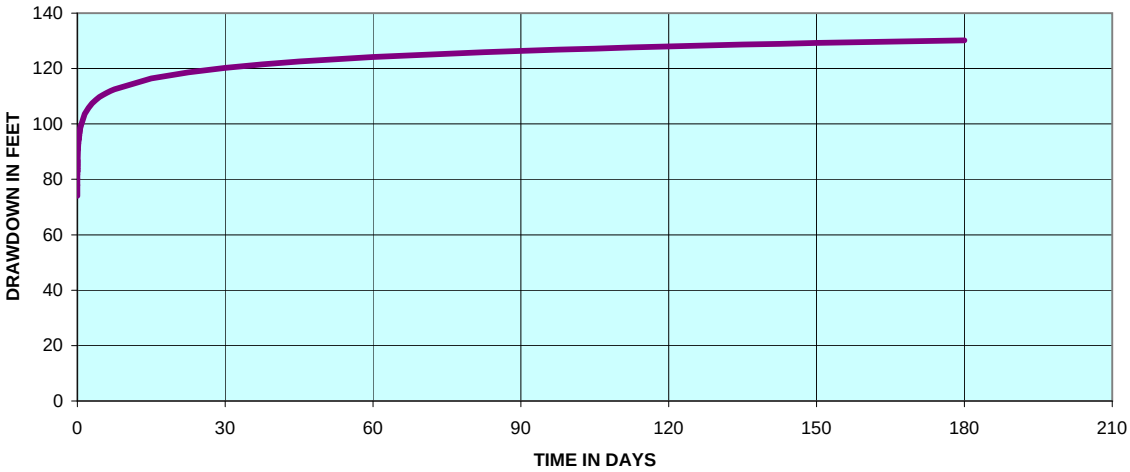


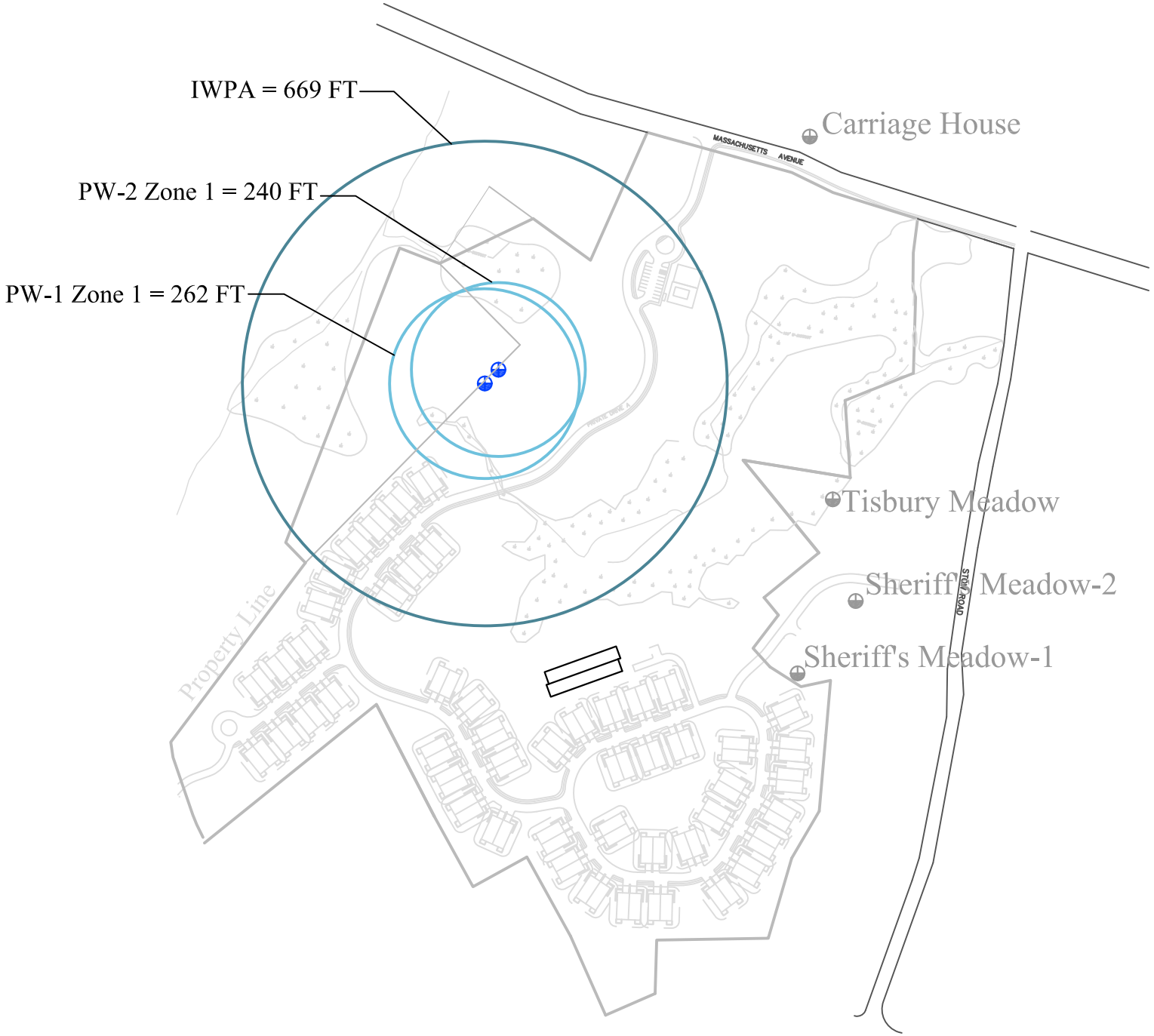
Equation used in prediction

$$s = \frac{Q(W(u))}{4\pi T} \qquad u = \frac{r^2 S}{4Tt}$$

s is drawdown, W(u) is the well function







Boxborough Town Center, LLC
Massachusetts Avenue
Boxborough, MA
01719

Figure 24. Zone I and IWPA.

0 400
Scale in feet

Project No. GHC#15005
Drafted SWS Checked
Date 12/30/16 Rev
Base Map: CAD files obtained from Stamski & McNary.

GeoHydroCycle, Inc.

Enclosure 2 - Bedrock Well Log

Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

To retain a copy of this file you must save and/or print.

Username:	**GAPDRILLING**
Transaction ID:	**864327**
Document:	**Well Driller**
Size of File:	**379.82K**
Status of Transaction:	**In Process**
Date and Time Created:	**9/14/2016:8:10:23 PM**

Note: This file only includes forms that were part of your transaction as of the date and time indicated above. If you need a more current copy of your transaction, return to eDEP and select to “Download a Copy” from the Current Submittals page.

Well Driller

Please specify work performed:
New Well

Please specify well type:
Public Water Supply

Number Of Wells:

Well Location

In public right-of-way:
Yes No

Subdivision/Property/Description:

Property Owner:
BOXBOROUGH TOWN CENTER LLC

Engineering Firm:

Address at well location:

Street Number:	Street Name:
800	MASS AVE
Building Lot#:	Assessor's Map #:
Assessor's Lot#:	ZIP Code: 01719

City/Town:
BOXBOROUGH

GPS

North:	West:
42.28813	71.31146

Mailing Address:
click here if same as well location address

Street Number:	Street Name:
25	WESTFORD LANE
City/Town:	State:
ACTON	MASSACHUSETTS
ZIP Code: 01720	

Board of health permit obtained:
Yes Not Required

Permit Number:	Date Issued:
6555	08/15/2016

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Well Driller Program
Well Completion Reports(General)

Well Driller - General Well Form

DRILLING METHOD

Overburden	Bedrock
Air Hammer	Air Hammer

WELL LOG OVERBURDEN LITHOLOGY

From(ft)	To(ft)	Code	Color	Comment	Drop in drill stem	Extra fast or slow drill rate	Loss or addition of fluid
0	12	Clay	Brown		YES NO	Fast Slow	Loss Addition

WELL LOG BEDROCK LITHOLOGY

From(ft)	To(ft)	Code	Comment	Drop in drill stem	Extra fast or slow drill rate	Loss or addition of fluid	Visible Rust Staining	Extra Large Chips
12	100	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
100	180	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
180	182	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
182	200	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
200	300	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
300	400	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes

ADDITIONAL WELL INFORMATION

Developed: Yes No

Disinfected: Yes No

Total Well Depth: 400

Depth to Bedrock: 12

Surface Seal Type: Cement

Fracture Enhancement: Yes No

CASING Is Casing above ground?

From: 2 To: 0

From	To	Type	Thickness	Diameter	Driveshoe
0	38	Steel	17#	7	Yes

SCREEN No Screen

From	To	Type	Slot Size	Diameter
		--- Choose Screen Type ---		

WATER-BEARING ZONES DRY WELL

From	To	Yield (gpm)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Well Driller Program
Well Completion Reports(General)

180	182	25

PERMANENT PUMP (IF AVAILABLE)

Pump Description: --- Choose Pump Description ---

Horsepower: --- Choose Horsepower ---

Pump Intake Depth (ft)

Nominal Pump Capacity (gpm)

ANNULAR SEAL / FILTER PACK

From	To	Material 1	Weight	Material 2	Weight	Water (gal)	Batches (count)	Method Of Placement
0	38	Cement/Bentonite Grout		Choose Material				Tremie

WELL TEST DATA

Date	Method	Yield (gpm)	Time Pumped (HH:MM)	Pumping Level (ft BGS)	Time To Recover (HH:MM)	Recovery (ft BGS)
08172016	Air Blow With Drill Stem	25	4:00	400	24:00	20

WATER LEVEL

Date Measured	Static Depth BGS (ft)	Flowing Rate (gpm)
08182016	20	

COMMENTS

WELL #1 ON THE LEFT

WELL DRILLERS STATEMENT

This well was drilled or altered under my direct supervision, according to the applicable rules and regulations, and this report is complete and accurate to the best of my knowledge.

Driller	RYAN WRAGG	Registration #	919	Monitoring [M]	Supervising Driller Signature	WRAGG, RYAN, G
Firm	GAP MOUNTAIN DRILLING, LLC	Rig Permit #	491		Date Job Complete	08182916

NOTE: Well Completion Reports must be filed by the registered well driller within 30 days of well completion.

Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

To retain a copy of this file you must save and/or print.

Username:	**GAPDRILLING**
Transaction ID:	**864329**
Document:	**Well Driller**
Size of File:	**398.02K**
Status of Transaction:	**In Process**
Date and Time Created:	**9/14/2016:8:20:26 PM**

Note: This file only includes forms that were part of your transaction as of the date and time indicated above. If you need a more current copy of your transaction, return to eDEP and select to “Download a Copy” from the Current Submittals page.

Well Driller

Please specify work performed:
New Well

Please specify well type:
Public Water Supply

Number Of Wells:

Well Location

In public right-of-way:
Yes No

Subdivision/Property/Description:

Property Owner:
BOXBOROUGH TOWN CENTER LLC

Engineering Firm:

Address at well location:

Street Number:	Street Name:
800	MASS AVE
Building Lot#:	Assessor's Map #:
Assessor's Lot#:	ZIP Code:
	01719

City/Town:
BOXBOROUGH

GPS

North:	West:
42.28818	71.31145

Mailing Address:
click here if same as well location address

Street Number:	Street Name:
25	WESTFORD LANE
City/Town:	State:
ACTON	MASSACHUSETTS
ZIP Code:	
01720	

Board of health permit obtained:
Yes Not Required

Permit Number:	Date Issued:
6554	08/16/2016

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Well Driller Program
Well Completion Reports(General)

Well Driller - General Well Form

DRILLING METHOD

Overburden	Bedrock
Air Hammer	Air Hammer

WELL LOG OVERBURDEN LITHOLOGY

From(ft)	To(ft)	Code	Color	Comment	Drop in drill stem	Extra fast or slow drill rate	Loss or addition of fluid
0	14	Clay	Brown		YES NO	Fast Slow	Loss Addition

WELL LOG BEDROCK LITHOLOGY

From(ft)	To(ft)	Code	Comment	Drop in drill stem	Extra fast or slow drill rate	Loss or addition of fluid	Visible Rust Staining	Extra Large Chips
14	100	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
100	200	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
200	300	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
300	400	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
400	434	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
434	435	Granite	3 GPM	YES NO	Fast Slow	Loss Addition	Yes	Yes
435	500	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
500	600	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes
600	700	Granite		YES NO	Fast Slow	Loss Addition	Yes	Yes

ADDITIONAL WELL INFORMATION

Developed: Yes No

Disinfected: Yes No

Total Well Depth: 700

Depth to Bedrock: 14

Surface Seal Type: Cement

Fracture Enhancement: Yes No

CASING Is Casing above ground? From: 2 To: 0

From	To	Type	Thickness	Diameter	Driveshoe
0	38	Steel	17#	7	Yes

SCREEN No Screen

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Well Driller Program
Well Completion Reports(General)

From	To	Type	Slot Size	Diameter
		--- Choose Screen Type ---		

WATER-BEARING ZONES ☐ DRY WELL

From	To	Yield (gpm)
434	435	3

PERMANENT PUMP (IF AVAILABLE)

Pump Description: --- Choose Pump Description ---

Horsepower: --- Choose Horsepower ---

Pump Intake Depth (ft)

Nominal Pump Capacity (gpm)

ANNULAR SEAL / FILTER PACK

From	To	Material 1	Weight	Material 2	Weight	Water (gal)	Batches (count)	Method Of Placement
0	38	Cement/Bentonite Grout		Choose Material				Tremie

WELL TEST DATA

Date	Method	Yield (gpm)	Time Pumped (HH:MM)	Pumping Level (ft BGS)	Time To Recover (HH:MM)	Recovery (ft BGS)
08182016	Air Blow With Drill Stem	3	4:00	700	24:00	25
08232016	Constant Rate Pump	14	4:00	300	24:00	25

WATER LEVEL

Date Measured	Static Depth BGS (ft)	Flowing Rate (gpm)
08232016	25	

COMMENTS

WELL #2 ON RIGHT

WELL DRILLERS STATEMENT

This well was drilled or altered under my direct supervision, according to the applicable rules and regulations, and this report is complete and accurate to the best of my knowledge.

Driller RYAN WRAGG Registration # 919 Monitoring [M] Supervising Driller Signature WRAGG, RYAN, G

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Well Driller Program
Well Completion Reports(General)

Firm	GAP MOUNTAIN DRILLING, LLC	Rig Permit #	491	Date Job Complete	08232016

NOTE: Well Completion Reports must be filed by the registered well driller within 30 days of well completion.

Enclosure 3 - Groundwater Quality Forms

Massachusetts Department of Environmental Protection - Drinking Water Program **VOC**

Volatile Organic Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Sample Acidified?	Date Collected	Collected By
	Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	Yes ☒	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

Lab Method	Date Extracted (551.1 only)	Date Analyzed	Lab Sample ID#	LAB SAMPLE NOTES - Include information as to whether sample was diluted or additional contaminants detected.
524.2		11/21/2016	L1637776-01	
Was this Sample composited by the Lab?	COMPOSITE SAMPLE NOTES - Please list the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources.			
Yes:☐ No:☒				

CAS#	REGULATED VOC CONTAMINANT	Results µg/L	MCL µg/L	MDL µg/L
71-43-2	BENZENE	ND	5	0.50
56-23-5	CARBON TETRACHLORIDE	ND	5	0.50
75-35-4	1,1-DICHLOROETHYLENE	ND	7	0.50
107-06-02	1,2-DICHLOROETHANE	ND	5	0.50
106-46-7	PARA-DICHLOROBENZENE	ND	5	0.50
79-01-6	TRICHLOROETHYLENE (TCE)	ND	5	0.50
71-55-6	1,1,1-TRICHLOROETHANE	ND	200	0.50
75-01-4	VINYL CHLORIDE	ND	2	0.50
108-90-7	MONOCHLOROBENZENE	ND	100	0.50
95-50-1	O-DICHLOROBENZENE	ND	600	0.50
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	100	0.50
156-59-2	CIS-1,2-DICHLOROETHYLENE	ND	70	0.50
78-87-5	1,2-DICHLOROPROPANE	ND	5	0.50
100-41-4	ETHYLBENZENE	ND	700	0.50
100-42-5	STYRENE	ND	100	0.50
127-18-4	TETRACHLOROETHYLENE (PCE)	ND	5	0.50
108-88-3	TOLUENE	ND	1000	0.50
1330-20-7	XYLENES (TOTAL)	ND	10000	0.50
75-09-2	DICHLOROMETHANE	ND	5	0.50
120-82-1	1,2,4-TRICHLOROBENZENE	ND	70	0.50
79-00-5	1,1,2-TRICHLOROETHANE	ND	5	0.50

Massachusetts Department of Environmental Protection - Drinking Water Program **VOC**

Volatile Organic Contaminant Report

PWS ID#:

Lab Sample ID#: L1637776-01

CAS#	UNREGULATED VOC CONTAMINANTS	Results µg/L	MDL µg/L
67-66-3	CHLOROFORM*	ND	0.50
75-27-4	BROMODICHLOROMETHANE	ND	0.50
124-48-1	CHLORODIBROMOMETHANE	ND	0.50
75-25-2	BROMOFORM	ND	0.50
541-73-1	M-DICHLOROBENZENE	ND	0.50
74-95-3	DIBROMOMETHANE	ND	0.50
563-58-6	1,1-DICHLOROPROPENE	ND	0.50
75-34-3	1,1-DICHLOROETHANE*	ND	0.50
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	0.50
142-28-9	1,3-DICHLOROPROPANE	ND	0.50
74-87-3	CHLOROMETHANE	ND	0.50
74-83-9	BROMOMETHANE*	ND	0.50
96-18-4	1,2,3-TRICHLOROPROPANE	ND	0.50
630-20-6	1,1,1,2-TETRACHLOROETHANE	ND	0.50
75-00-3	CHLOROETHANE	ND	0.50
594-20-7	2,2-DICHLOROPROPANE	ND	0.50
95-49-8	O-CHLOROTOLUENE	ND	0.50
106-43-4	P-CHLOROTOLUENE	ND	0.50
108-86-1	BROMOBENZENE	ND	0.50
542-75-6	1,3-DICHLOROPROPENE*	ND	0.50
95-63-6	1,2,4-TRIMETHYLBENZENE	ND	0.50
87-61-6	1,2,3-TRICHLOROBENZENE	ND	0.50
103-65-1	N-PROPYLBENZENE	ND	0.50
104-51-8	N-BUTYLBENZENE	ND	0.50
91-20-3	NAPHTHALENE*	ND	0.50
87-68-3	HEXACHLOROBUTADIENE	ND	0.50
108-67-8	1,3,5-TRIMETHYLBENZENE	ND	0.50
99-87-6	P-ISOPROPYLTOLUENE	ND	0.50
98-82-8	ISOPROPYLBENZENE	ND	0.50
98-06-6	TERT-BUTYLBENZENE	ND	0.50
135-98-8	SEC-BUTYLBENZENE	ND	0.50
75-69-4	FLUOROTRICHLOROMETHANE	ND	0.50
75-71-8	DICHLORODIFLUOROMETHANE*	ND	0.50
74-97-5	BROMOCHLOROMETHANE	ND	0.50
1634-04-4	METHYL TERTIARY BUTYL ETHER (MTBE)#*	ND	0.50

CAS#	ADDITIONAL UNREGULATED and/or NON-TARGET VOC CONTAMINANTS *(Report if analyzed or otherwise detected)*	Results µg/L	MDL µg/L
109-99-9	TETRAHYDROFURAN (THF)*		
75-65-0	TERT-BUTYL ALCOHOL (TBA)*		
994-05-8	TERT-AMYL METHYL ETHER (TAME)*		
637-92-3	ETHYL TERTIARY BUTYL ETHER (ETBE)		
108-20-3	DI-ISOPROPYL ETHER (DIPE)		
67-64-1	ACETONE*		
76-13-1	FREON 113*		
78-93-3	METHYL ETHYL KETONE (MEK)*		
108-10-1	METHYL-ISOBUTYL KETONE (MIBK)*		

☐ Check this box if attaching lab report to show additional VOC results/contaminants tested.

Required * DEP ORSG limit established.

Surrogate Name	% Recovery (70 – 130%)
1,2-Dichlorobenzene-d4	104
4-Bromofluorobenzene	99

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge

Primary Lab Director Signature: Joseph L Wankowski

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **VOC**

Volatile Organic Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Sample Acidified?	Date Collected	Collected By
	Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	Yes ☒	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

Lab Method	Date Extracted (551.1 only)	Date Analyzed	Lab Sample ID#	LAB SAMPLE NOTES - Include information as to whether sample was diluted or additional contaminants detected.
524.2		11/21/2016	L1637776-02	
Was this Sample composited by the Lab?	COMPOSITE SAMPLE NOTES - Please list the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources.			
Yes:☐ No:☒				

CAS#	REGULATED VOC CONTAMINANT	Results µg/L	MCL µg/L	MDL µg/L
71-43-2	BENZENE	ND	5	0.50
56-23-5	CARBON TETRACHLORIDE	ND	5	0.50
75-35-4	1,1-DICHLOROETHYLENE	ND	7	0.50
107-06-02	1,2-DICHLOROETHANE	ND	5	0.50
106-46-7	PARA-DICHLOROBENZENE	ND	5	0.50
79-01-6	TRICHLOROETHYLENE (TCE)	ND	5	0.50
71-55-6	1,1,1-TRICHLOROETHANE	ND	200	0.50
75-01-4	VINYL CHLORIDE	ND	2	0.50
108-90-7	MONOCHLOROBENZENE	ND	100	0.50
95-50-1	O-DICHLOROBENZENE	ND	600	0.50
156-60-5	TRANS-1,2-DICHLOROETHYLENE	ND	100	0.50
156-59-2	CIS-1,2-DICHLOROETHYLENE	ND	70	0.50
78-87-5	1,2-DICHLOROPROPANE	ND	5	0.50
100-41-4	ETHYLBENZENE	ND	700	0.50
100-42-5	STYRENE	ND	100	0.50
127-18-4	TETRACHLOROETHYLENE (PCE)	ND	5	0.50
108-88-3	TOLUENE	ND	1000	0.50
1330-20-7	XYLENES (TOTAL)	ND	10000	0.50
75-09-2	DICHLOROMETHANE	ND	5	0.50
120-82-1	1,2,4-TRICHLOROBENZENE	ND	70	0.50
79-00-5	1,1,2-TRICHLOROETHANE	ND	5	0.50

Massachusetts Department of Environmental Protection - Drinking Water Program **VOC**

Volatile Organic Contaminant Report

PWS ID#:

Lab Sample ID#: L1637776-02

CAS#	UNREGULATED VOC CONTAMINANTS	Results µg/L	MDL µg/L
67-66-3	CHLOROFORM*	ND	0.50
75-27-4	BROMODICHLOROMETHANE	ND	0.50
124-48-1	CHLORODIBROMOMETHANE	ND	0.50
75-25-2	BROMOFORM	ND	0.50
541-73-1	M-DICHLOROBENZENE	ND	0.50
74-95-3	DIBROMOMETHANE	ND	0.50
563-58-6	1,1-DICHLOROPROPENE	ND	0.50
75-34-3	1,1-DICHLOROETHANE*	ND	0.50
79-34-5	1,1,2,2-TETRACHLOROETHANE	ND	0.50
142-28-9	1,3-DICHLOROPROPANE	ND	0.50
74-87-3	CHLOROMETHANE	ND	0.50
74-83-9	BROMOMETHANE*	ND	0.50
96-18-4	1,2,3-TRICHLOROPROPANE	ND	0.50
630-20-6	1,1,1,2-TETRACHLOROETHANE	ND	0.50
75-00-3	CHLOROETHANE	ND	0.50
594-20-7	2,2-DICHLOROPROPANE	ND	0.50
95-49-8	O-CHLOROTOLUENE	ND	0.50
106-43-4	P-CHLOROTOLUENE	ND	0.50
108-86-1	BROMOBENZENE	ND	0.50
542-75-6	1,3-DICHLOROPROPENE*	ND	0.50
95-63-6	1,2,4-TRIMETHYLBENZENE	ND	0.50
87-61-6	1,2,3-TRICHLOROBENZENE	ND	0.50
103-65-1	N-PROPYLBENZENE	ND	0.50
104-51-8	N-BUTYLBENZENE	ND	0.50
91-20-3	NAPHTHALENE*	ND	0.50
87-68-3	HEXACHLOROBUTADIENE	ND	0.50
108-67-8	1,3,5-TRIMETHYLBENZENE	ND	0.50
99-87-6	P-ISOPROPYLTOLUENE	ND	0.50
98-82-8	ISOPROPYLBENZENE	ND	0.50
98-06-6	TERT-BUTYLBENZENE	ND	0.50
135-98-8	SEC-BUTYLBENZENE	ND	0.50
75-69-4	FLUOROTRICHLOROMETHANE	ND	0.50
75-71-8	DICHLORODIFLUOROMETHANE*	ND	0.50
74-97-5	BROMOCHLOROMETHANE	ND	0.50
1634-04-4	METHYL TERTIARY BUTYL ETHER (MTBE)#*	ND	0.50

CAS#	ADDITIONAL UNREGULATED and/or NON-TARGET VOC CONTAMINANTS *(Report if analyzed or otherwise detected)*	Results µg/L	MDL µg/L
109-99-9	TETRAHYDROFURAN (THF)*		
75-65-0	TERT-BUTYL ALCOHOL (TBA)*		
994-05-8	TERT-AMYL METHYL ETHER (TAME)*		
637-92-3	ETHYL TERTIARY BUTYL ETHER (ETBE)		
108-20-3	DI-ISOPROPYL ETHER (DIPE)		
67-64-1	ACETONE*		
76-13-1	FREON 113*		
78-93-3	METHYL ETHYL KETONE (MEK)*		
108-10-1	METHYL-ISOBUTYL KETONE (MIBK)*		

☐ Check this box if attaching lab report to show additional VOC results/contaminants tested.

Required * DEP ORSG limit established.

Surrogate Name	% Recovery (70 – 130%)
1,2-Dichlorobenzene-d4	102
4-Bromofluorobenzene	93

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wackons

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **IOC**

Inorganic Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information *Please note all samples are considered representative of finished water if there is no treatment applied		Date Collected	Collected By
	Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Contaminant	Result (mg/L)	MCL (mg/L)	MDL (mg/L)	Lab Method	Date Analyzed	Analysis Lab MA Cert #	Analysis Lab Name	Lab Sample ID#
ANTIMONY	ND	0.006	0.0020	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
ARSENIC	ND	0.010	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
BARIUM	0.0056	2	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
BERYLLIUM	ND	0.004	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
CADMIUM	ND	0.005	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
CHROMIUM	ND	0.1	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
CYANIDE	ND	0.2	0.005	4500CN-CE	11/23/2016	M-MA086	Alpha Analytical	L1637776-01
FLUORIDE[1]	ND	4.0	0.20	4500F-C	11/22/2016	M-MA086	Alpha Analytical	L1637776-01
MERCURY[2]	ND	0.002	0.0002	245.1	11/26/2016	M-MA086	Alpha Analytical	L1637776-01
NICKEL	0.0026	*0.1**	0.0020	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
SELENIUM	ND	0.05	0.0050	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
SODIUM	12.2	*20**	2.00	200.7	11/21/2016	M-MA086	Alpha Analytical	L1637776-01
THALLIUM	ND	0.002	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-01

[1]Fluoride also has a secondary MCL of 2.0 mg/L. Community water systems which exceed this limit must provide public notice pursuant to 310 CMR 22.16.
[2]Please note that if method 245.1 is used for mercury, only method revision 3.0 will be accepted by MA DEP.
*No current MCL, however DEP Office of Research and Standards has established a guideline (ORSG) limit for this contaminant.

Was this Sample composited by the Lab?	COMPOSITE SAMPLE NOTES List the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources per sample.
Yes ☐	

LAB SAMPLE NOTES

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L. Watkins

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **IOC**

Inorganic Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information *Please note all samples are considered representative of finished water if there is no treatment applied		Date Collected	Collected By
	Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Contaminant	Result (mg/L)	MCL (mg/L)	MDL (mg/L)	Lab Method	Date Analyzed	Analysis Lab MA Cert #	Analysis Lab Name	Lab Sample ID#
ANTIMONY	ND	0.006	0.0020	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
ARSENIC	ND	0.010	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
BARIUM	0.0146	2	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
BERYLLIUM	ND	0.004	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
CADMIUM	ND	0.005	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
CHROMIUM	ND	0.1	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
CYANIDE	ND	0.2	0.005	4500CN-CE	11/23/2016	M-MA086	Alpha Analytical	L1637776-02
FLUORIDE[1]	ND	4.0	0.20	4500F-C	11/22/2016	M-MA086	Alpha Analytical	L1637776-02
MERCURY[2]	ND	0.002	0.0002	245.1	11/25/2016	M-MA086	Alpha Analytical	L1637776-02
NICKEL	ND	*0.1**	0.0020	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
SELENIUM	ND	0.05	0.0050	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
SODIUM	16.5	*20**	2.00	200.7	11/21/2016	M-MA086	Alpha Analytical	L1637776-02
THALLIUM	ND	0.002	0.0010	200.8	11/21/2016	M-MA086	Alpha Analytical	L1637776-02

[1]Fluoride also has a secondary MCL of 2.0 mg/L. Community water systems which exceed this limit must provide public notice pursuant to 310 CMR 22.16.
[2]Please note that if method 245.1 is used for mercury, only method revision 3.0 will be accepted by MA DEP.
*No current MCL, however DEP Office of Research and Standards has established a guideline (ORSG) limit for this contaminant.

Was this Sample composited by the Lab?	COMPOSITE SAMPLE NOTES List the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources per sample.
Yes ☐	

LAB SAMPLE NOTES

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wrackens

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved			

Massachusetts Department of Environmental Protection - Drinking Water Program **Sec**

Secondary Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

	DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
A		Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews
B			☐ (M)ultiple ☐ (S)ingle	☐ (R)aw ☐ (F)inished		

	Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
A	☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
B	☐ RS ☐ SS	☐ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

	SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).
A	
B	

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

Compound	Results A	Results B	SMCL	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
IRON (mg/L)	ND		0.3	0.050	200.7	11/22/2016	L1637776-01
MANGANESE (mg/L)	0.109		0.05*	0.010	200.7	11/22/2016	L1637776-01
ALKALINITY (mg/L as CaCO3)	79.0		None	2.00	2320B	11/21/2016	L1637776-01
CALCIUM (mg/L)	42.0		None	0.100	200.7	11/22/2016	L1637776-01
MAGNESIUM (mg/L)	12		None	0.10	200.7	11/22/2016	L1637776-01
HARDNESS (mg/L as CaCO3)	156		None	0.660	200.7	11/22/2016	L1637776-01
POTASSIUM (mg/L)	ND		None	2.50	200.7	11/22/2016	L1637776-01
TURBIDITY (NTU)	1.5		None	0.20	180.1	11/19/2016	L1637776-01
ALUMINUM (mg/L)	ND		0.2	0.100	200.7	11/22/2016	L1637776-01
CHLORIDE (mg/L)	87.1		250	2.50	300.0	11/22/2016	L1637776-01
COLOR (C.U.)	ND		15	5.0	2120B	11/19/2016	L1637776-01
COPPER (mg/L)	ND		1	0.0010	200.8	11/22/2016	L1637776-01
ODOR (T.O.N)	ND		3	1	2150B	11/19/2016	L1637776-01
pH	6.8		6.5-8.5		4500H+-B	11/19/2016	L1637776-01
SILVER (mg/L)	ND		0.10	0.0010	200.8	11/22/2016	L1637776-01
SULFATE (mg/L)	9.59		250	5.00	300.0	11/22/2016	L1637776-01
TDS (mg/L)	260		500	10	2540C	11/23/2016	L1637776-01
ZINC (mg/L)	ND		5	0.0050	200.8	11/22/2016	L1637776-01

* EPA has established a lifetime Health Advisory (HA) for manganese at 0.3 mg/L and an acute HA at 1.0 mg/L.

	LAB SAMPLE NOTES
A	Chloride and Sulfate dilution 5x
B	

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wrabon

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **Sec**

Secondary Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

	DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
A		Pw-2	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews
B			☐ (M)ultiple ☐ (S)ingle	☐ (R)aw ☐ (F)inished		

	Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
A	☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
B	☐ RS ☐ SS	☐ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

	SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).
A	
B	

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

Compound	Results A	Results B	SMCL	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
IRON (mg/L)	0.339		0.3	0.050	200.7	11/22/2016	L1637776-02
MANGANESE (mg/L)	1.40		0.05*	0.010	200.7	11/22/2016	L1637776-02
ALKALINITY (mg/L as CaCO3)	79.0		None	2.00	2320B	11/21/2016	L1637776-02
CALCIUM (mg/L)	54.1		None	0.100	200.7	11/22/2016	L1637776-02
MAGNESIUM (mg/L)	15		None	0.10	200.7	11/22/2016	L1637399-02
HARDNESS (mg/L as CaCO3)	198		None	0.660	200.7	11/22/2016	L1637399-02
POTASSIUM (mg/L)	3.30		None	2.50	200.7	11/22/2016	L1637399-02
TURBIDITY (NTU)	1.5		None	0.20	180.1	11/19/2016	L1637399-02
ALUMINUM (mg/L)	ND		0.2	0.100	200.7	11/22/2016	L1637399-02
CHLORIDE (mg/L)	87.1		250	2.50	300.0	11/22/2016	L1637399-02
COLOR (C.U.)	ND		15	5.0	2120B	11/19/2016	L1637399-02
COPPER (mg/L)	ND		1	0.0010	200.8	11/22/2016	L1637399-02
ODOR (T.O.N)	ND		3	1	2150B	11/19/2016	L1637399-02
pH	6.8		6.5-8.5		4500H+-B	11/19/2016	L1637399-02
SILVER (mg/L)	ND		0.10	0.0010	200.8	11/22/2016	L1637399-02
SULFATE (mg/L)	9.59		250	5.00	300.0	11/22/2016	L1637399-02
TDS (mg/L)	260		500	10	2540C	11/23/2016	L1637399-02
ZINC (mg/L)	0.734		5	0.0050	200.8	11/22/2016	L1637399-02

* EPA has established a lifetime Health Advisory (HA) for manganese at 0.3 mg/L and an acute HA at 1.0 mg/L.

	LAB SAMPLE NOTES
A	Chloride and sulfate dilution 5x
B	

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wickens

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **LCR-C**

Lead and Copper Analysis Report

I. PWS INFORMATION: Please refer to your DEP Lead & Copper sampling plan for approved sampling locations.

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

Routine or Special Samples	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:	
		(1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 **Primary Lab Name:** Alpha Analytical **Subcontracted? (Y/N)** N

Analyte	Action Level (mg/L)	Lab Method	MDL (mg/L)	Analysis Lab MA Cert.#	Analysis Lab Name
Lead:	0.015	200.8	0.0010	M-MA086	Alpha Analytical
Copper:	1.3	200.7	0.010	M-MA086	Alpha Analytical

LAB SAMPLE NOTES

	DEP Approved Sample Location (See DEP approved LCR plan for sampling locations)	Collection Date	LEAD		COPPER		Lab Sample ID#
			Result (mg/L)	Date Analyzed	Result (mg/L)	Date Analyzed	
1	Pw-1	11/19/2016	ND	11/22/2016	ND	11/22/2016	L1637776-01
2	Pw-2	11/19/2016	ND	11/22/2016	ND	11/22/2016	L1637776-02
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Report SCHOOL RESULTS collected in accordance with 310 CMR 22.06B (7)(a)9 below. Do not use these school results in 90th percentile calculations.							
1							
2							
3							
4							

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wachtow

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

COM & NTNC Public Water Suppliers must submit Forms **LCR-D or LCR-E** with this form to the appropriate DEP Regional Office.

DEP REVIEW STATUS (Initial & Date)	Review Comments
☐ Accepted _____ ☐ Disapproved _____	

Massachusetts Department of Environmental Protection - Drinking Water Program **LCR-D**

Lead and Copper - 90th PERCENTILE COMPLIANCE Report

(For Systems Required to Collect More Than 5 Samples)

I. PWS INFORMATION: Please refer to your DEP Lead & Copper sampling plan for approved sampling locations.

PWS ID #: _____ **City / Town:** _____

PWS Name: _____ **PWS Class:** COM ☐ NTNC ☐

Sampling Frequency: (choose one)		
	☐ FIRST SEMI-ANNUAL SAMPLING PERIOD	☐ REDUCED - EVERY THREE YEARS
	☐ SECOND SEMI-ANNUAL SAMPLING PERIOD	☐ LEAD SERVICE LINE (LSL) REPLACEMENT PROGRAM
	☐ REDUCED – ANNUAL	☐ DEMONSTRATION

Step 1: Place *lead* results in ascending order (from lowest to highest value) with lowest value at # 1, in the table below. Repeat for *copper* results. Please report results that are ND or less than (<) the laboratory's reported detection limit (MDL) as zero. Results at or above the laboratory's detection limit (MDL) but below 0.005 mg/L for lead or 0.05 mg/L for copper shall be reported as measured or may be reported as 0.0025 mg/L for lead or 0.025 mg/L for copper.

Step 2: Multiply the total number of samples collected by 0.9 (this is your 90th percentile sample number). Round to the nearest whole number, if necessary.

Step 3: Compare the sample result at the 90th percentile sample number against the corresponding action level. If the 90th percentile value is higher than the action level, then you have an exceedance and are required to contact MassDEP as soon as possible for information on compliance actions.

Note: Do not include school results on this form unless the PWS is a school.

LEAD RESULTS (mg/L)

#	Results	#	Results	#	Results	#	Results
1*		16		31		46	
2		17		32		47	
3		18		33		48	
4		19		34		49	
5		20		35		50	
6		21		36		51	
7		22		37		52	
8		23		38		53	
9		24		39		54	
10		25		40		55	
11		26		41		56	
12		27		42		57	
13		28		43		58	
14		29		44		59	
15		30		45		60	

COPPER RESULTS (mg/L)

#	Results	#	Results	#	Results	#	Results
1*		16		31		46	
2		17		32		47	
3		18		33		48	
4		19		34		49	
5		20		35		50	
6		21		36		51	
7		22		37		52	
8		23		38		53	
9		24		39		54	
10		25		40		55	
11		26		41		56	
12		27		42		57	
13		28		43		58	
14		29		44		59	
15		30		45		60	

***Lowest Value**

My system was required to collect: _____ lead and copper samples. My system collected: _____ lead and copper samples.

Total # of samples collected: _____ x 0.9 = _____ This number is my system's 90th percentile sample #.

Circle the 90th percentile sample # for both lead and copper in the table above, and enter the results in the appropriate spaces below.

_____ (Lead result at 90th percentile sample#)	Compared to **0.015 mg/L** (The lead action level)	_____ (Copper result at 90th percentile sample#)	Compared to **1.3 mg/L** (The copper action level)

II. CERTIFICATION:

Check and complete the correct statement for lead as determined by the above results. If you have an exceedance and you are a community system you must comply with the Consumer Confidence Rule (CCR) reporting requirements in accordance with 310 CMR 22.16A(4)(i)6.

☐ My system was **at or below** the lead action level.

☐ My system **exceeded** the lead action level and _____ sampling sites **exceeded** the lead action level.
(Insert # of samples)

Check and complete the correct statement for copper as determined from the above results. If you have an exceedance and you are a community system you must comply with the Consumer Confidence Rule (CCR) reporting requirements in accordance with 310 CMR 22.16A(4)(i)6.

☐ My system was **at or below** the copper action level.

☐ My system **exceeded** the copper action level and _____ sampling sites **exceeded** the copper action level.
(Insert # of samples)

My signature below indicates that all sampling sites on this report have been previously approved in writing by the DEP and that I have complied with 310 CMR 22.06B(7). I have also notified the owner of each sampling site of their sites individual results. I certify under penalty of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

_____ Title _____ Signature of PWS or Owner's Representative _____ Date

Please submit Form LCR-C along with this form.

Massachusetts Department of Environmental Protection - Drinking Water Program **LCR-E**

Lead and Copper - 90th PERCENTILE COMPLIANCE Report

(For Systems Required to Collect 5 Samples)

I. PWS INFORMATION: Please refer to your DEP Lead & Copper sampling plan for approved sampling locations.

PWS ID #: _____ **City / Town:** _____

PWS Name: _____ **PWS Class:** COM ☐ NTNC ☐

Sampling Frequency: (choose one)		
	☐ FIRST SEMI-ANNUAL SAMPLING PERIOD	☐ REDUCED - EVERY THREE YEARS
	☐ SECOND SEMI-ANNUAL SAMPLING PERIOD	☐ LEAD SERVICE LINE (LSL) REPLACEMENT PROGRAM
	☐ REDUCED – ANNUAL	☐ DEMONSTRATION

Step 1: Place *lead* results in ascending order (from lowest to highest value) with lowest value at # 1, in the table below. Repeat for copper results. Please report results that are ND or less than (<) the laboratory's reported detection limit (MDL) as zero. Results at or above the laboratory's detection limit (MDL) but below 0.005 mg/L for lead or 0.05 mg/L for copper shall be reported as measured or may be reported as 0.0025 mg/L for lead or 0.025 mg/L for copper.

Step 2: Take the average of the 4th and 5th highest sample results. This is your 90th percentile sample value.

Step 3: Compare the 90th percentile value against the corresponding action level. If the 90th percentile value is higher than the action level, then you have an exceedance and are required to contact MassDEP as soon as possible for information on compliance actions.

Note: If you collected more than 5 samples you must use the 90th Percentile Compliance Report form for more than 5 samples (Form LCR-D).

LEAD RESULTS (mg/L)	
#	All results for sampling period
1*	
2	
3	
4	
5	

COPPER RESULTS (mg/L)	
#	All results for sampling period
1*	
2	
3	
4	
5	

***Lowest Value**

My system was required to collect **five** lead and copper samples. My system collected _____ lead and copper samples.

Circle 4th and 5th highest sample results above, then average the 4th and 5th highest sample results as follows:

$$\frac{\text{(Value of 4th highest result + Value of the 5th highest result)}}{2} = \text{90th Percentile Value}$$

_____ (Lead 90th percentile value)	Compared to **0.015 mg/L** (The lead action level)	_____ (Copper 90th percentile value)	Compared to **1.3 mg/L** (The copper action level)

II. CERTIFICATION:

Check and complete the correct statement for lead as determined by the above results. If you have an exceedance and you are a community system you must comply with the Consumer Confidence Rule (CCR) reporting requirements in accordance with 310 CMR 22.16A(4)(i)6.

☐ My system was **at or below** the lead action level.

☐ My system **exceeded** the lead action level _____ sampling sites **exceeded** the lead action level.
(Insert # of samples)

Check and complete the correct statement for copper as determined from the above results. If you have an exceedance and you are a community system you must comply with the Consumer Confidence Rule (CCR) reporting requirements in accordance with 310 CMR 22.16A(4)(i)6.

☐ My system was **at or below** the copper action level.

☐ My system **exceeded** the copper action level and _____ sampling sites **exceeded** the copper action level.
(Insert # of samples)

My signature below indicates that all sampling sites on this report have been previously approved in writing by the DEP and that I have complied with 310 CMR 22.06B(7). I have also notified the owner of each sampling site of their sites' individual results. I certify under penalty of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

_____ Title

_____ Signature of PWS or Owner's Representative

_____ Date

Please submit Form LCR-C along with this form.

Massachusetts Department of Environmental Protection - Drinking Water Program **Ni**

Nitrite Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

	DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
A		Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews
B		Pw-2	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews
C			☐ (M)ultiple ☐ (S)ingle	☐ (R)aw ☐ (F)inished		
D			☐ (M)ultiple ☐ (S)ingle	☐ (R)aw ☐ (F)inished		

	Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
A	☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
B	☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
C	☐ RS ☐ SS	☐ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
D	☐ RS ☐ SS	☐ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

	SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).
A	
B	
C	
D	

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

	NITRITE Result (mg/L)	MCL (mg/L)	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
A	ND	1	0.050	353.2	11/19/2016	L1637776-01
B	ND	1	0.050	353.2	11/19/2016	L1637776-02
C		1				
D		1				

Finished water results equal to or exceeding ½ of the MCL (0.5 mg/L) triggers quarterly monitoring.
Finished water results exceeding the MCL of 1 mg/L requires confirmation sampling within 24 hours.
Notify MassDEP of any MCL exceedances.

	LAB SAMPLE NOTES
A	
B	
C	
D	

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wachens

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved_____			

Massachusetts Department of Environmental Protection - Drinking Water Program **N**

Nitrate Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

	DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Sample Acidified?	Date Collected	Collected By
A		Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	Yes ☐	11/19/2016	C. Matthews
B		Pw-2	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	Yes ☐	11/19/2016	C. Matthews
C			☐ (M)ultiple ☐ (S)ingle	☐ (R)aw ☐ (F)inished	Yes ☐		
D			☐ (M)ultiple ☐ (S)ingle	☐ (R)aw ☐ (F)inished	Yes ☐		

	Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
A	☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
B	☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
C	☐ RS ☐ SS	☐ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	
D	☐ RS ☐ SS	☐ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

	SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).
A	
B	
C	
D	

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

	NITRATE Result (mg/L)	MCL (mg/L)	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
A	0.15	10	0.10	353.2	11/19/2016	L1637776-01
B	ND	10	0.10	353.2	11/19/2016	L1637776-02
C		10				
D		10				

Finished water results equal to or exceeding ½ of the MCL (5 mg/L) triggers quarterly monitoring.
Finished water results exceeding the MCL of 10 mg/L requires confirmation sampling within 24 hours.
Notify MassDEP of any MCL exceedances.

	LAB SAMPLE NOTES
A	
B	
C	
D	

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Watkins

Date: 11/29/2016

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **ClO_4**

Perchlorate Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	Pw-1	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during collection).

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

CONTAMINANT	Result	UOM	MCL	MDL	MRL	Lab Method	Date Analyzed	Lab Sample ID#
PERCHLORATE	ND	µg/L	2.0	0.050	0.050	332.0	11/24/2016	L1637776-01
CONDUCTIVITY		umhos/cm	---					

Perchlorate analysis requires the use of a Massachusetts DEP approved laboratory.

Perchlorate concentrations between the Minimum Detection Limit (MDL) and the Minimum Reporting Level (MRL) must be reported as estimated (J) values (i.e. perchlorate is positively present but tentatively quantified).

All field samples analyzed with either EPA Method 314.0 or EPA Method 314.1 with measured native perchlorate concentrations between 0.8 µg/L and 2.0 µg/L must be retested with and without a perchlorate spike approximately equal to the native perchlorate concentration.

LAB SAMPLE NOTES

Reanalysis and Spike Recovery (required for results between 0.8 µg/L and 2.0 µg/L or samples subject to pretreatment in method EPA 314.0)

Compound	Result (µg/L)	MDL (µg/L)	MRL (µg/L)	Spike Concentration (µg/L)	Spike Recovery (%)	Lab Method	Date Analyzed
Perchlorate (reanalysis)							
Perchlorate (spike)							

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Weakens

Date: 11/29/2016

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **ClO_4**

Perchlorate Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	Pw-2	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during collection).

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** N

Analysis Lab MA Cert. #: M-MA086 | **Analysis Lab Name:** Alpha Analytical

CONTAMINANT	Result	UOM	MCL	MDL	MRL	Lab Method	Date Analyzed	Lab Sample ID#
PERCHLORATE	ND	µg/L	2.0	0.050	0.050	332.0	11/24/2016	L1637776-02
CONDUCTIVITY		umhos/cm	---					

Perchlorate analysis requires the use of a Massachusetts DEP approved laboratory.

Perchlorate concentrations between the Minimum Detection Limit (MDL) and the Minimum Reporting Level (MRL) must be reported as estimated (J) values (i.e. perchlorate is positively present but tentatively quantified).

All field samples analyzed with either EPA Method 314.0 or EPA Method 314.1 with measured native perchlorate concentrations between 0.8 µg/L and 2.0 µg/L must be retested with and without a perchlorate spike approximately equal to the native perchlorate concentration.

LAB SAMPLE NOTES

Reanalysis and Spike Recovery (required for results between 0.8 µg/L and 2.0 µg/L or samples subject to pretreatment in method EPA 314.0)

Compound	Result (µg/L)	MDL (µg/L)	MRL (µg/L)	Spike Concentration (µg/L)	Spike Recovery (%)	Lab Method	Date Analyzed
Perchlorate (reanalysis)							
Perchlorate (spike)							

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Joseph L Wickens

Date: 11/29/2016

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program

B

BACTERIOLOGICAL REPORT

I. PWS INFORMATION: Refer to your MassDEP Coliform Sampling Plan to help complete the PWS Information and MassDEP Approved Sample Site Information sections below.

PWS ID #: | **PWS Name:** REGENCY AT BOXBOROUGH | **City/Town:** BOXBOROUG | **Class:** COM ☒ NTNC ☐ TNC ☐

II. ANALYTICAL INFORMATION: Refer to your MassDEP state lab certificate for proper Lab MA Cert. # and certified methods.

Primary Lab MA Cert.#: M-MA086 **Primary Lab Name:** Alpha Analytical **Subcontracted? (Y/N):** N

Analysis Lab MA Cert.#: M-MA086 **Analysis Lab Name:** Alpha Analytical

☒ Original Report ☐ Resubmitted Report ☐ Confirmation Report **(1) Reason for Resubmission:** ☐ Resample ☐ Reanalysis ☐ Report Correction **(2) Collection Date of Original Sample:**

Total Coliform (TC) Method	*E.coli* (EC) Method	Enterococci (ET) Method	Fecal Coliform (FC) Method[2B]	HPC Method
9223B	9223B			

Lab Sample Notes

MassDEP Approved Sample Site Information[1]			TC [4,5] Result	EC [4,5] Result	ET [4,5] Result	FC [2B,4] Result	Chlorine Result[2A] mg/L	HPC Result[2A] #cfu/mL	COLLECTION		ANALYSIS		COLLECTED BY	LAB SAMPLE ID #
Sample Type[1,3]	Location Code #[1]	Approved SAMPLE LOCATION[1]							DATE	TIME	DATE	TIME		
		PW-1	A	A					11/19/2016	11:10	11/19/2016	15:10	C. Matthews	L1637776-01
		PW-2	A	A					11/19/2016	10:20	11/19/2016	15:10	C. Matthews	L1637776-02

[1] Sample Type, Location Code#, and Approved Sample Location must correspond to the sample information on your MassDEP Coliform Sampling Plan.
[2A] SWTR systems: HPC samples shall be taken at the same distribution sites and at the same time as total coliform, whenever chlorine residual is not detected at the sample site. [2B]Fecal reporting is for unfiltered SWTR sources only.
[3] Sample Type: RS-Routine Distribution Sample, RO-Original Site Repeat, UR-Upstream Repeat, DR-Downstream Repeat, AR-Additional Repeat, RW-Raw Water, PT-Plant Tap, SS-Special Sample
[4] Report as #/100mL, P (present), A (absent), or Too Numerous To Count: TNTC-I (invalid) or TNTC-P (present). Notify MassDEP of any *E.coli* or enterococci positive results by the end of the business day.
[5] Collect appropriate number of repeat samples within 24 hours of laboratory notification for total coliform-positive or invalid samples and *E.coli* or enterococci-positive raw water samples.

In accordance with 310 CMR 22.15(2), if mailing paper reports, TWO copies of this report must be received by your MassDEP Regional Office no later than 10 days after the end of the month in which the results are received or no later than 10 days after the end of the monitoring period, whichever is sooner. Please note: Electronic reporting (eDEP) deadline is the same as above.

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Laboratory Authorized Signature and Date: Joseph Watkins 11/29/16

MassDEP Review Status: ☐ Accepted ☐ Disapproved Review Comments:

Massachusetts Department of Environmental Protection - Drinking Water Program **R**

Radionuclide Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** Boxborough

Town Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
PW-1	Regency at Boxborough	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:	
		(1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – Site Exam Pump Test

New Source Approval

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 **Primary Lab Name:** Alpha Analytical, Inc. **Subcontracted? (Y/N)** Y

Was this sample composited by the Lab?	COMPOSITE SAMPLE NOTES List the composited source by DEP Source Code (XXXXXXX-XXX) and dates collected, up to four consecutive quarterly samples per single entry point.
☐	

LAB SAMPLE NOTES **Radon sample received past holding time.**

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID#	Analysis Lab MA Cert#	Analysis Lab Name
GROSS ALPHA (pCi/L)	5.8	2.5		1.1	SM 7110B	12/20/2016	K276/16-1	CO00008	Hazen Research
URANIUM – *activity* (pCi/L)									
Report Uranium result and MDL in (pCi/L) as analyzed, otherwise use formula to calculate [Uranium µg/L x 0.67 = Uranium pCi/L]. Check this box if result is calculated ☐									
ADJUSTED GROSS ALPHA (pCi/L)		----		The MCL for *Adjusted Gross Alpha* (Gross Alpha minus Uranium) is 15 pCi/L. A gross alpha measurement may be substituted for the uranium analysis, if the gross alpha result is equal to or less than 15 pCi/L. If gross alpha exceeds 15 pCi/L, uranium must also be measured.						
URANIUM – *mass* (µg/L)									
Report Uranium result and MDL in (µg/L) as analyzed, otherwise use formula to calculate [Uranium pCi/L / 0.67 = Uranium µg/L]. Check this box if result is calculated ☐									
RADIUM-226 (pCi/L)	0.0	0.1		0.1	SM 7500-Ra B	12/09/2016	K276/16-1	CO00008	Hazen Research
RADIUM-228 (pCi/L)	0.0	0.6		0.7	EPA Ra-05	12/13/2016	K276/16-1	CO00008	Hazen Research
COMBINED RADIUM (pCi/L)	0.0	----		The MCL for *Combined Radium* (Radium-226 plus Radium-228) is 5 pCi/L. A gross alpha measurement may be substituted for the radium-226 analysis, if the gross alpha result is equal to or less than 5 pCi/L. If gross alpha exceeds 5 pCi/L, radium-226 must also be measured.						
GROSS BETA (pCi/L)	1.0	2.3	*	2.1	SM 7110B	12/20/2016	K276/16-1	CO00008	Hazen Research
*The MCL for gross beta is 4 mrem/year. If gross beta exceeds 50 pCi/L, analysis of the sample for Photon Activity shall be performed to identify the major radioactive constituents. Gross Beta testing is optional, unless specifically required by DEP.									
RADON (pCi/L)	3800	93	**	25.0	SM 7500-Rn B	11/23/2016	K276/16-1	CO00008	Hazen Research
**Radon testing is optional, unless specifically required by DEP. The MA guideline for Radon is 10,000 pCi/L. The EPA has proposed a radon MCL of 300 – 4000 pCi/L.									

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Lynnea Rockwell for Jess Axen, Hazen Research, Inc.

Date: 12/30/2016

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved _____			

Massachusetts Department of Environmental Protection - Drinking Water Program **R**

Radionuclide Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** Boxborough

Town Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
PW-2	Regency at Boxborough	☐ (M)ultiple ☒ (S)ingle	☐ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – Site Exam Pump Test

New Source Approval

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 **Primary Lab Name:** Alpha Analytical, Inc. **Subcontracted? (Y/N)** Y

Was this sample composited by the Lab?	COMPOSITE SAMPLE NOTES List the composited source by DEP Source Code (XXXXXXX-XXX) and dates collected, up to four consecutive quarterly samples per single entry point.
☐	

LAB SAMPLE NOTES Radon sample received past holding time.

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID#	Analysis Lab MA Cert#	Analysis Lab Name
GROSS ALPHA (pCi/L)	3.8	2.2		1.0	SM 7110B	12/20/2016	K276/16-2	CO00008	Hazen Research
URANIUM – *activity* (pCi/L)									
Report Uranium result and MDL in (pCi/L) as analyzed, otherwise use formula to calculate [Uranium µg/L x 0.67 = Uranium pCi/L]. Check this box if result is calculated ☐									
ADJUSTED GROSS ALPHA (pCi/L)		----		The MCL for *Adjusted Gross Alpha* (Gross Alpha minus Uranium) is 15 pCi/L. A gross alpha measurement may be substituted for the uranium analysis, if the gross alpha result is equal to or less than 15 pCi/L. If gross alpha exceeds 15 pCi/L, uranium must also be measured.					
URANIUM – *mass* (µg/L)									
Report Uranium result and MDL in (µg/L) as analyzed, otherwise use formula to calculate [Uranium pCi/L / 0.67 = Uranium µg/L]. Check this box if result is calculated ☐									
RADIUM-226 (pCi/L)	0.8	0.3		0.1	SM 7500-Ra B	12/09/2016	K276/16-2	CO00008	Hazen Research
RADIUM-228 (pCi/L)	0.0	0.6		0.7	EPA Ra-05	12/13/2016	K276/16-2	CO00008	Hazen Research
COMBINED RADIUM (pCi/L)	0.8	----		The MCL for *Combined Radium* (Radium-226 plus Radium-228) is 5 pCi/L. A gross alpha measurement may be substituted for the radium-226 analysis, if the gross alpha result is equal to or less than 5 pCi/L. If gross alpha exceeds 5 pCi/L, radium-226 must also be measured.					
GROSS BETA (pCi/L)	3.4	2.4	*	2.1	SM 7110B	12/20/2016	K276/16-2	CO00008	Hazen Research
*The MCL for gross beta is 4 mrem/year. If gross beta exceeds 50 pCi/L, analysis of the sample for Photon Activity shall be performed to identify the major radioactive constituents. Gross Beta testing is optional, unless specifically required by DEP.									
RADON (pCi/L)	3580	91	**	25.5	SM 7500-Rn B	11/23/2016	K276/16-2	CO00008	Hazen Research
**Radon testing is optional, unless specifically required by DEP. The MA guideline for Radon is 10,000 pCi/L. The EPA has proposed a radon MCL of 300 – 4000 pCi/L.									

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: Lynne Lockwell for Jess Axen, Hazen Research, Inc

Date: 12/30/2016

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date) ☐ Accepted _____ ☐ Disapproved _____	Review Comments		☐ WQTS Data Entered

Massachusetts Department of Environmental Protection - Drinking Water Program **SOC**

Synthetic Organic Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	Pw-1	☐ (M)ultiple ☒ (S)ingle	☒ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:	
		(1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).

Site Exam Pumping Test

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** Y

Analytical Methods (List All)	Date Extracted	Date Analyzed	Analysis Lab MA Cert#	Analysis Lab Name	Lab Sample ID#
EPA 504.1	12/1/2016	12/1/2016	M-NH003	Granite State Analytical	161121171
EPA 505	12/1/2016	12/1/2016	M-NH003	Granite State Analytical	161121171
EPA 515.3	11/30/2016	11/30/2016	M-NH003	Granite State Analytical	161121171
EPA 525.2	11/28/2016	11/30/2016	M-NH003	Granite State Analytical	161121171
EPA 531.1	12/2/2016	12/3/2016	M-NH003	Granite State Analytical	161121171

Was this Sample composited by the Lab?	**COMPOSITE SAMPLE NOTES -** Please list the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources.
☐	

LAB SAMPLE NOTES - Information on matrix spike/method blank sample information is on file at our office.

Alpha Job L1637826

CAS #	SOC Regulated Contaminants	Result µg/L	MCL µg/L	MDL µg/L	Analytical Method
1563-66-2	CARBOFURAN	ND	40	0.9	EPA 531.1
23135-22-0	OXAMYL (VYDATE)	ND	200	1	EPA 531.1
94-75-7	2,4-D	ND	70	1	EPA 515.3
93-72-1	2,4,5-TP (SILVEX)	ND	50	0.25	EPA 515.3
75-99-0	DALAPON	ND	200	1	EPA 515.3
88-85-7	DINOSEB	ND	7	0.5	EPA 515.3
1918-02-1	PICLORAM	ND	500	1.3	EPA 515.3
87-86-5	PENTACHLOROPHENOL	ND	1	0.1	EPA 515.3
15972-60-8	ALACHLOR	ND	2	0.1	EPA 525.2
1912-24-9	ATRAZINE	ND	3	0.1	EPA 525.2
72-20-80	ENDRIN	ND	2	0.1	EPA 525.2
76-44-8	HEPTACHLOR	ND	0.4	0.04	EPA 525.2
1024-57-3	HEPTACHLOR EPOXIDE	ND	0.2	0.06	EPA 525.2
58-89-9	LINDANE	ND	0.2	0.07	EPA 525.2
72-43-5	METHOXYCHLOR	ND	40	0.1	EPA 525.2
118-74-1	HEXACHLOROBENZENE	ND	1	0.1	EPA 525.2
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	50	0.1	EPA 525.2
122-34-9	SIMAZINE	ND	4	0.1	EPA 525.2
50-32-8	BENZO(A)PYRENE	ND	0.2	0.1	EPA 525.2
103-23-1	DI(2-ETHYLHEXYL)ADIPATE	ND	400	0.6	EPA 525.2
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	ND	6	3	EPA 525.2

Massachusetts Department of Environmental Protection - Drinking Water Program **SOC**

Synthetic Organic Contaminant Report

PWS ID#:

Lab Sample ID#: 161121171

CAS #	SOC Regulated Contaminants	Result µg/L	MCL µg/L	MDL µg/L	Analytical Method
57-74-9	CHLORDANE	ND	2	0.2	EPA 505
8001-35-2	TOXAPHENE	ND	3	1.0	EPA 505
12674-11-2	PCB AROCLOR 1016	ND	---	0.2	EPA 505
11104-28-2	PCB AROCLOR 1221	ND	---	0.2	EPA 505
11141-16-5	PCB AROCLOR 1232	ND	---	0.2	EPA 505
53469-21-9	PCB AROCLOR 1242	ND	---	0.2	EPA 505
12672-29-6	PCB AROCLOR 1248	ND	---	0.2	EPA 505
11097-69-1	PCB AROCLOR 1254	ND	---	0.2	EPA 505
11096-82-5	PCB AROCLOR 1260	ND	---	0.2	EPA 505
1336-36-3	PCBS (DECACHLOROBIPHENYL)		0.5		
Monitoring requirements for DBCP and EDB have been waived statewide for SURFACE WATER SOURCES ONLY. All groundwater sources must monitor for these two contaminants.					
96-12-8	DIBROMOCHLOROPROPANE (DBCP)	ND	0.2	0.02	EPA 504.1
106-93-4	ETHYLENEDIBROMIDE (EDB)	ND	0.02	0.02	EPA 504.1
Monitoring requirements for the following four contaminants have been waived statewide for both groundwater and surface water sources, however monitoring and reporting for Diquat is required for surface waters that have applied Diquat.					
85-00-7	DIQUAT		20		
145-73-3	ENDOTHALL		100		
1071-83-6	GLYPHOSATE		700		
1746-01-6	2,3,7,8-TCDD (DIOXIN)		3.0×10^{-5}		

CAS#	SOC Unregulated Contaminants	Result µg/L	ORSG µg/L	MDL µg/L	Analytical Method
116-06-3	ALDICARB	ND	3*	1	EPA 531.1
1646-88-4	ALDICARB SULFONE	ND	2*	1	EPA 531.1
1646-87-3	ALDICARB SULFOXIDE	ND	4*	1	EPA 531.1
63-25-2	CARBARYL	ND	---	1	EPA 531.1
16655-82-6	3-HYDROXYCARBOFURAN	ND	---	1	EPA 531.1
16752-77-5	METHOMYL	ND	---	1	EPA 531.1
1918-00-9	DICAMBA	ND	---	0.18	EPA 515.3
309-00-2	ALDRIN	ND	---	0.1	EPA 525.2
23184-66-9	BUTACHLOR	ND	---	0.1	EPA 525.2
60-57-1	DIELDRIN	ND	---	0.04	EPA 525.2
51218-45-2	METOLACHLOR	ND	---	0.1	EPA 525.2
21087-64-9	METRIBUZIN	ND	100*	0.1	EPA 525.2
1918-16-7	PROPACHLOR	ND	---	0.1	EPA 525.2

* No MCL, however the DEP Office of Research and Standards has established a guideline (ORSG) limit for this contaminant.

Method	Surrogate Name	% Recovery (70 – 130%)
EPA 515.3	2,4-Dichlorophenyl	112
	acetic acid	
EPA 525.2	1,3-Dimethyl-2-	89
	nitrobenzene	
EPA 525.2	Perylene-d12	90
EPA 525.2	Pyrene-d10	104

Method	Surrogate Name	% Recovery (70 – 130%)
EPA 525.2	Triphenylphosphate	107

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: _____

Date: _____

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved			

Massachusetts Department of Environmental Protection - Drinking Water Program **SOC**

Synthetic Organic Contaminant Report

I. PWS INFORMATION: Please refer to your DEP Water Quality Sampling Schedule (WQSS) to help complete this form

PWS ID #: | **City / Town:** BOXBOROUGH

PWS Name: Regency At Boxborough | **PWS Class:** COM ☒ NTNC ☐ TNC ☐

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	Pw-2	☐ (M)ultiple ☒ (S)ingle	☒ (R)aw ☐ (F)inished	11/19/2016	C. Matthews

Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below: (1) Reason for Resubmission	(2) Collection Date of Original Sample
☐ RS ☒ SS	☒ Original ☐ Resubmitted ☐ Confirmation	☐ Resample ☐ Reanalysis ☐ Report Correction	

SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).

Site Exam Pumping Test

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: M-MA086 | **Primary Lab Name:** Alpha Analytical | **Subcontracted? (Y/N)** Y

Analytical Methods (List All)	Date Extracted	Date Analyzed	Analysis Lab MA Cert#	Analysis Lab Name	Lab Sample ID#
EPA 504.1	12/1/2016	12/1/2016	M-NH003	Granite State Analytical	161121172
EPA 505	12/1/2016	12/1/2016	M-NH003	Granite State Analytical	161121172
EPA 515.3	11/30/2016	11/30/2016	M-NH003	Granite State Analytical	161121172
EPA 525.2	11/28/2016	11/30/2016	M-NH003	Granite State Analytical	161121172
EPA 531.1	12/2/2016	12/3/2016	M-NH003	Granite State Analytical	161121172

Was this Sample composited by the Lab?	COMPOSITE SAMPLE NOTES - Please list the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources.
☐	

LAB SAMPLE NOTES - Information on matrix spike/method blank sample information is on file at our office.

Alpha Job L1637826

CAS #	SOC Regulated Contaminants	Result µg/L	MCL µg/L	MDL µg/L	Analytical Method
1563-66-2	CARBOFURAN	ND	40	0.9	EPA 531.1
23135-22-0	OXAMYL (VYDATE)	ND	200	1	EPA 531.1
94-75-7	2,4-D	ND	70	1	EPA 515.3
93-72-1	2,4,5-TP (SILVEX)	ND	50	0.25	EPA 515.3
75-99-0	DALAPON	ND	200	1	EPA 515.3
88-85-7	DINOSEB	ND	7	0.5	EPA 515.3
1918-02-1	PICLORAM	ND	500	1.3	EPA 515.3
87-86-5	PENTACHLOROPHENOL	ND	1	0.1	EPA 515.3
15972-60-8	ALACHLOR	ND	2	0.1	EPA 525.2
1912-24-9	ATRAZINE	ND	3	0.1	EPA 525.2
72-20-80	ENDRIN	ND	2	0.1	EPA 525.2
76-44-8	HEPTACHLOR	ND	0.4	0.04	EPA 525.2
1024-57-3	HEPTACHLOR EPOXIDE	ND	0.2	0.06	EPA 525.2
58-89-9	LINDANE	ND	0.2	0.07	EPA 525.2
72-43-5	METHOXYCHLOR	ND	40	0.1	EPA 525.2
118-74-1	HEXACHLOROBENZENE	ND	1	0.1	EPA 525.2
77-47-4	HEXACHLOROCYCLOPENTADIENE	ND	50	0.1	EPA 525.2
122-34-9	SIMAZINE	ND	4	0.1	EPA 525.2
50-32-8	BENZO(A)PYRENE	ND	0.2	0.1	EPA 525.2
103-23-1	DI(2-ETHYLHEXYL)ADIPATE	ND	400	0.6	EPA 525.2
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE	ND	6	3	EPA 525.2

Massachusetts Department of Environmental Protection - Drinking Water Program **SOC**

Synthetic Organic Contaminant Report

PWS ID#:

Lab Sample ID#: 161121172

CAS #	SOC Regulated Contaminants	Result µg/L	MCL µg/L	MDL µg/L	Analytical Method
57-74-9	CHLORDANE	ND	2	0.2	EPA 505
8001-35-2	TOXAPHENE	ND	3	1.0	EPA 505
12674-11-2	PCB AROCLOR 1016	ND	---	0.2	EPA 505
11104-28-2	PCB AROCLOR 1221	ND	---	0.2	EPA 505
11141-16-5	PCB AROCLOR 1232	ND	---	0.2	EPA 505
53469-21-9	PCB AROCLOR 1242	ND	---	0.2	EPA 505
12672-29-6	PCB AROCLOR 1248	ND	---	0.2	EPA 505
11097-69-1	PCB AROCLOR 1254	ND	---	0.2	EPA 505
11096-82-5	PCB AROCLOR 1260	ND	---	0.2	EPA 505
1336-36-3	PCBS (DECACHLOROBIPHENYL)		0.5		
Monitoring requirements for DBCP and EDB have been waived statewide for SURFACE WATER SOURCES ONLY. All groundwater sources must monitor for these two contaminants.					
96-12-8	DIBROMOCHLOROPROPANE (DBCP)	ND	0.2	0.02	EPA 504.1
106-93-4	ETHYLENEDIBROMIDE (EDB)	ND	0.02	0.02	EPA 504.1
Monitoring requirements for the following four contaminants have been waived statewide for both groundwater and surface water sources, however monitoring and reporting for Diquat is required for surface waters that have applied Diquat.					
85-00-7	DIQUAT		20		
145-73-3	ENDOTHALL		100		
1071-83-6	GLYPHOSATE		700		
1746-01-6	2,3,7,8-TCDD (DIOXIN)		3.0×10^{-5}		

CAS#	SOC Unregulated Contaminants	Result µg/L	ORSG µg/L	MDL µg/L	Analytical Method
116-06-3	ALDICARB	ND	3*	1	EPA 531.1
1646-88-4	ALDICARB SULFONE	ND	2*	1	EPA 531.1
1646-87-3	ALDICARB SULFOXIDE	ND	4*	1	EPA 531.1
63-25-2	CARBARYL	ND	---	1	EPA 531.1
16655-82-6	3-HYDROXYCARBOFURAN	ND	---	1	EPA 531.1
16752-77-5	METHOMYL	ND	---	1	EPA 531.1
1918-00-9	DICAMBA	ND	---	0.18	EPA 515.3
309-00-2	ALDRIN	ND	---	0.1	EPA 525.2
23184-66-9	BUTACHLOR	ND	---	0.1	EPA 525.2
60-57-1	DIELDRIN	ND	---	0.04	EPA 525.2
51218-45-2	METOLACHLOR	ND	---	0.1	EPA 525.2
21087-64-9	METRIBUZIN	ND	100*	0.1	EPA 525.2
1918-16-7	PROPACHLOR	ND	---	0.1	EPA 525.2

* No MCL, however the DEP Office of Research and Standards has established a guideline (ORSG) limit for this contaminant.

Method	Surrogate Name	% Recovery (70 – 130%)
EPA 515.3	2,4-Dichlorophenyl	116
	acetic acid	
EPA 525.2	1,3-Dimethyl-2-	91
	nitrobenzene	
EPA 525.2	Perylene-d12	98
EPA 525.2	Pyrene-d10	106

Method	Surrogate Name	% Recovery (70 – 130%)
EPA 525.2	Triphenylphosphate	113

I certify under penalties of law that I am the person authorized to fill out this form and the information contained herein is true, accurate and complete to the best extent of my knowledge.

Primary Lab Director Signature: _____

Date: _____

If not submitting these results electronically, mail TWO copies of this report to your DEP Regional Office no later than 10 days after the end of the month in which you received this report or no later than 10 days after the end of the reporting period, whichever is sooner.

DEP REVIEW STATUS (Initial & Date)	Review Comments		☐ WQTS Data Entered
☐ Accepted _____ ☐ Disapproved			

Enclosure 4 - Correspondence

STAMSKI AND MCNARY, INC.
1000 Main Street
Acton, Massachusetts 01720
(978) 263-8585
FAX (978) 263-9883

JOSEPH MARCH, P.E., P.L.S.
GEORGE DIMAKARAKOS, P.E.

January 29, 2016

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Protection – Central Regional Office
627 Main Street Worcester, MA 01608

Re: Boxborough Town Center, LLC – Hayward Lane
MA DEP Pre-Application Sketch; (3 Sheets); dated January 29, 2016

Dear Mr. Boyer:

On behalf of our client, Boxborough Town Center, LLC, we hereby request a pre-application meeting with the Department to review our design parameters for three lots relative to water supply and sewage treatment permitting for the referenced project.

Over the last year, conceptual meetings have been conducted with the Planning Board relative to the primary component of this project which is the development of elderly housing (Lot 2). As a result of these meetings, density of the elderly dwelling units has been reduced from two-hundred eight units to only one-hundred units. In addition, our client has been requested to reserve land along Massachusetts Avenue for future mixed use consisting of residential and commercial components (Lot 1 & Lot 3). The Board also prefers that our client proceed with constructing Hayward Lane, a proposed cul-de-sac, originating from Massachusetts Avenue. Hayward Lane is an approved definitive subdivision road.

As you are aware, town water and town sewer is not available at this location within the Town of Boxborough. Our office submits the following design parameters for each lot for consideration and comment from the Department as follows:

Lot 1 – Mixed use consisting of a two-bedroom residential dwelling unit (220 gpd), and approximately 3,900 square feet of retail/office space (293 gpd). Facility design flow of 513± gpd would serve less than twenty-five people. Water Supply Well will be a source of groundwater to be approved for such use by the local Board of Health. Sanitary Sewage will be handled by a private On-site Subsurface Sewage Disposal System approved for such use by the local Board of Health, in accordance with 310 CMR 15.000 Title 5 and local BOH regulations.

Lot 1 meets the criteria for approval under Section 310 CMR 15.004:(1)(c) as a Facility which has obtained subdivision approval; dwellings will be constructed on all lots (Lot 1, Lot 2 & Lot 3) which will have a cumulative total design flow of greater than 10,000 gpd; additional design flow for mixed use office/retail to be included on Lot 1 and office/retail/restaurant on Lot 3 along Massachusetts Avenue per request of Town Planning Board; a disposal system construction permit to construct a system in compliance with 310 CMR 15.00 on subdivision Lot 1 and subdivision Lot 3 will need to be applied for separately and obtained; a groundwater discharge permit to construct a system in compliance with 314 CMR 5.00 on subdivision Lot 2 will need to be applied for and obtained; and such subdivision lots will be conveyed to independent owners.

Lot 2 – A proposed Condominium Association, under separate ownership from Lot 1 and Lot 3, will consist of one-hundred Housing units for the Elderly, (100 two-bedroom units x 150 gpd = 15,000 gpd), with associated amenities consisting of a private clubhouse with associated pool for the residents. A clubhouse guest membership allowance for 40 abutting elderly residents of Sheriff's Meadow and Tisbury Meadow is anticipated, (40 guests x 25 gpd = 1,000 gpd). Facility design flow >15,000+ gpd, will comply with requirements of 314 CMR 5.00: Ground Water Discharge Permit Program by obtaining a groundwater discharge permit. Additional design flow will need to be added to system should bedroom count exceed two bedrooms per unit.

Water Supply Wells on Lot 2 will be a source of groundwater to be approved for such use by the Department in accordance with 310 CMR 22.00: Drinking Water since well will serve greater than twenty-five people. Two proposed wells will be constructed a minimum of fifty-feet apart from each other. Each well with its own individual Zone I and IWPA. A Zone I Easement is proposed on Lot 3 for the benefit of the Lot 2 wells per 310 CMR 22.21(3)(b). A potential Zone I Easement is also reserved on Lot 2 for the potential benefit of the Lot 3 well per 310 CMR 22.21(3)(b).

Lot 3 – Mixed use consisting of a two-bedroom residential dwelling unit (220 gpd), 31-seat restaurant (1,085 gpd) and approximately 1,500 square feet of retail/office space (293 gpd). Facility design flow of 1,418± gpd would serve greater than twenty-five people. Water Supply Well to be a private source of groundwater to be approved for such use by the Department in accordance with 310 CMR 22.00: Drinking Water. A Zone I Easement is reserved on Lot 2 for the benefit of the Lot 3 well per 310 CMR 22.21(3)(b), if deemed necessary during permitting. Proposed well to be located within the proposed Zone I of the Lot 2 Water Supply Wells. Sanitary Sewage will be handled by a private On-site Subsurface Sewage Disposal System approved for such use by the local Board of Health, in accordance with 310 CMR 15.000 Title 5 and local BOH regulations.

Lot 3 meets the criteria for approval under Section 310 CMR 15.004:(1)(c) as a Facility which has obtained subdivision approval; dwellings will be constructed on all lots (Lot 1, Lot 2 & Lot 3) which will have a cumulative total design flow of greater than 10,000 gpd; additional design flow for mixed use office/retail to be included on Lot 1 and

office/retail/restaurant on Lot 3 along Massachusetts Avenue per request of Town Planning Board; a disposal system construction permit to construct a system in compliance with 310 CMR 15.00 on subdivision Lot 1 and subdivision Lot 3 will need to be applied for separately and obtained; a groundwater discharge permit to construct a system in compliance with 314 CMR 5.00 on subdivision Lot 2 will need to be applied for and obtained; and such subdivision lots will be conveyed to independent owners.

Thank you for your attention to this matter, we look forward to meeting with the Department regarding this project. Please do not hesitate to contact our office with any questions prior to our meeting.

Respectfully,
For: Stamski And McNary, Inc.

Richard J. Harrington, P.E.

George Dimakarakos, P.E.

Attachments:

Stamski and McNary, Inc., 1000 Main Street, Acton, MA 01720
Preliminary Site Plan in Boxborough, Massachusetts;
MA DEP Pre-Application Sketch:

Sheet 1 of 3: Scale 1"=120'; dated January 29, 2016.
Sheet 2 of 3: Scale 1"=60'; dated January 29, 2016.
Sheet 3 of 3: Scale 1"=60'; dated January 29, 2016.

Regency at Boxborough

Proposed Community Wells
Boxborough, MA 01719

Site Exam
and
Approval to Conduct Pump Test
Transmittal No. X270140

Prepared by
GeoHydroCycle, Inc.

Prepared for:
Boxborough Town Center, LLC

May 25, 2016

GeoHydroCycle, Inc.

Hazardous Waste
Water Supply

Assessment
Remediation
Analyses
Permitting
Modeling
Software

May 25, 2016

Ms. Susan Connors
MassDEP Drinking Water Program
Central Regional Office
8 New Bond Street
Worcester, Massachusetts 01606

re: Regency at Boxborough
Proposed Community Wells
Boxborough, MA 01719
Site Exam and Approval to Conduct Pump Test
Transmittal X270140
GHC #15005

Dear Ms. Connors:

GeoHydroCycle, Inc. (GHC) is providing hydrogeologic services to our Client, Boxborough Town Center, LLC to permit water supply wells for a proposed development located at the Town Center property in Boxborough, MA 01719 (the Site). Figure 1 presents features of the Site.

Introduction

Following our March 4, 2016 meeting in DEP's Worcester office, an adjoining parcel of land on the west side of the property was placed under agreement to allow the proposed wells to be moved further from site wetlands and keep the Zone Is within to be owned property. Figure 2 shows the added Parcel A and the relocated wells.

Currently, the Town Center property is undeveloped. Natural drainage is to the center of the property to a local wetland that drains to the northeast corner of the property. The proposed wells are located in the western portion of the property, and as Figure 2 shows, the new parcel provides sufficient area to encompass the Zone I circles.

Site wastewater from the development is proposed to be discharged to an onsite leach field, as shown in Figure 2. Moving the wells to new locations also increases the distance between the wells and the leach field from 406 to 805 feet.

151B California Street
Newton, Massachusetts
02458

(617) 527-8074 (v)
(617) 527-8668 (f)

GeoHydroCycle, Inc.

Proposed Water Usage and Well Site

Developement plans for the Site are for 30 three-bedroom units and 70 elderly units (30 x 330 gpd + 70 x 150 gpd), which, based on Title 5, will require a water supply capable of producing 20,400 gallons per day.

For the Zone I wellhead protection area, Massachusetts Drinking Water Regulations, 310 CMR 22.21(3)(b) require a public water supply to own or control an area around public water supply wells. Using the daily usage rate of 20,400 gallons per day and two wells set 52 feet apart, yields an average daily pumping rate of 10.8 gallons per minute, which would require a Zone I radius of 251 feet, as shown in Figure 2.

Also, the Massachusetts Drinking Water Regulations require an Interim Wellhead Protection Area around the well to provide additional protection for the well. Using the daily average rate of 7.1 gallons per day, the IWPA for each of the wells would be a circles with radii of 627 feet, which places the leach field outside the IWPA.

Site Geology

In September 2003, GeoHydroCycle, Inc. prepared the Hydrogeologic Evaluation for a leach field associated with a proposed development of the land. GHC was involved in the subsurface explorations, which included both the test pit excavations, well drilling, well slug testing, and grain size analyses. Based on that data, the overburden beneath the site can be characterized as a sandy till, consisting of primarily is a fine to coarse Sand with little Gravel and trace Silt. This soil description is consistent with the surficial geology from the MassGIS web site (Figure 3).

Based on MassGIS data, bedrock beneath the Site are predominantly metamorphic rocks (Figure 4). Based on MassDEP well records, 908 bedrock wells have been reported being drilled Boxborough, and they range in depth between 25 and 1,200 feet, with an average depth of 347 feet. Most of Boxborough's wells are domestic, with a small portion of the wells being industrial, irrigation, and public water supply.

Local Land Use

The property on which the development is proposed is zoned as Town Center (Figure 5). Most of the land surrounding the Site is zoned as Agricultura/Residential and consists of mostly residences. Properties along Massachusetts Avenue are zoned either Town Center, Business or Business 1. All residences within ½ mile of the proposed well location have private wells and septic systems.

Table 1 lists the five public wells within ½ mile of the proposed wells.

151B California Street
Newton, Massachusetts
02458

(617) 527-8074 (v)
(617) 527-8668 (f)

Table 1. Public Wells within ½ Mile of Proposed Wells.

PWS No.	Location	Type
2037006-01G	Centre Village Apartments	Community Well
2037009-01G	Carriage House Condominium	Community Well
2037027-01G	The Marketplace	Non-Transient, Non-Community
2037028-01G	United Church of Christ Day Care	Non-Transient, Non-Community
2037031-01G	Boxborough Common	Non-Community

Figure 6 shows the locations of the public wells.

MassGIS web site indicates that three former hazardous waste sites are within ½ mile of the proposed wells. Records show that clean-ups are complete at each of the sites, and no further action is required.

Land Ownership and Control

The land that will be used for the proposed new wells is either owned or under agreement by the applicant. Stamski & McNary, Inc. has conducted property line surveys for the Site, and prepared a Figure 7 showing the property line. Parcel A is to be purchased subject to obtaining all approvals.

Proposed Pump Test

Following the successful drilling of the two bedrock wells at the proposed locations, and DEP approval of the well site, GHC plans to conduct hydraulic and water quality testing of the new well. Well testing will consist of a step-test, a five-day (120-hour) pump test, and water quality sampling of the wells during the hydraulic test. Figure 8 shows a schematic layout of the test. Details of the proposed pump test include:

Table 2. Proposed Pump Test.

Test Item	Details
Step-Test	Pump wells at 50, 100, 150 and 200% of proposed rate, sustained for 1 hour each.
Pre and Post Test Monitoring	Using pressure transducers, for 10 days after step-test recovery, and for 5 days after the pump test. At a minimum, readings taken every minute for the first 10 minutes; every 10 minutes for the first hour, and every hour until shutdown.
Ambient Well	USGS PHW 16 Petersham, MA (Till)
Pump Test Duration	120 hours
Pump size	Two 5 horsepower, 10 gallons per minute
Groundwater recording	Pressure transducers in stilling tubes
Discharge recording	Direct reading, totalizing in-line meter
Groundwater sampling location	Sampling ports near the well heads

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02458

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(617) 527-8668 (f)

GeoHydroCycle, Inc.

Table 2. Proposed Pump Test.

Test Item	Details
Discharge location	Nearby upland area (314 and 317 feet) outside Zone I
Power source	Power from portable generators
Pumping rate	Minimum of 9.5 gpm
Sampling parameters	See Enclosure 2

Please call if you have any questions.

Sincerely,
GeoHydroCycle, Inc.

Stephen W. Smith, P.E., P.HGW.

Enclosures: 1 - Figures
2 - Water Quality Sampling Requirements
3 - Copies of Transmittal and BRP WS-13 Forms

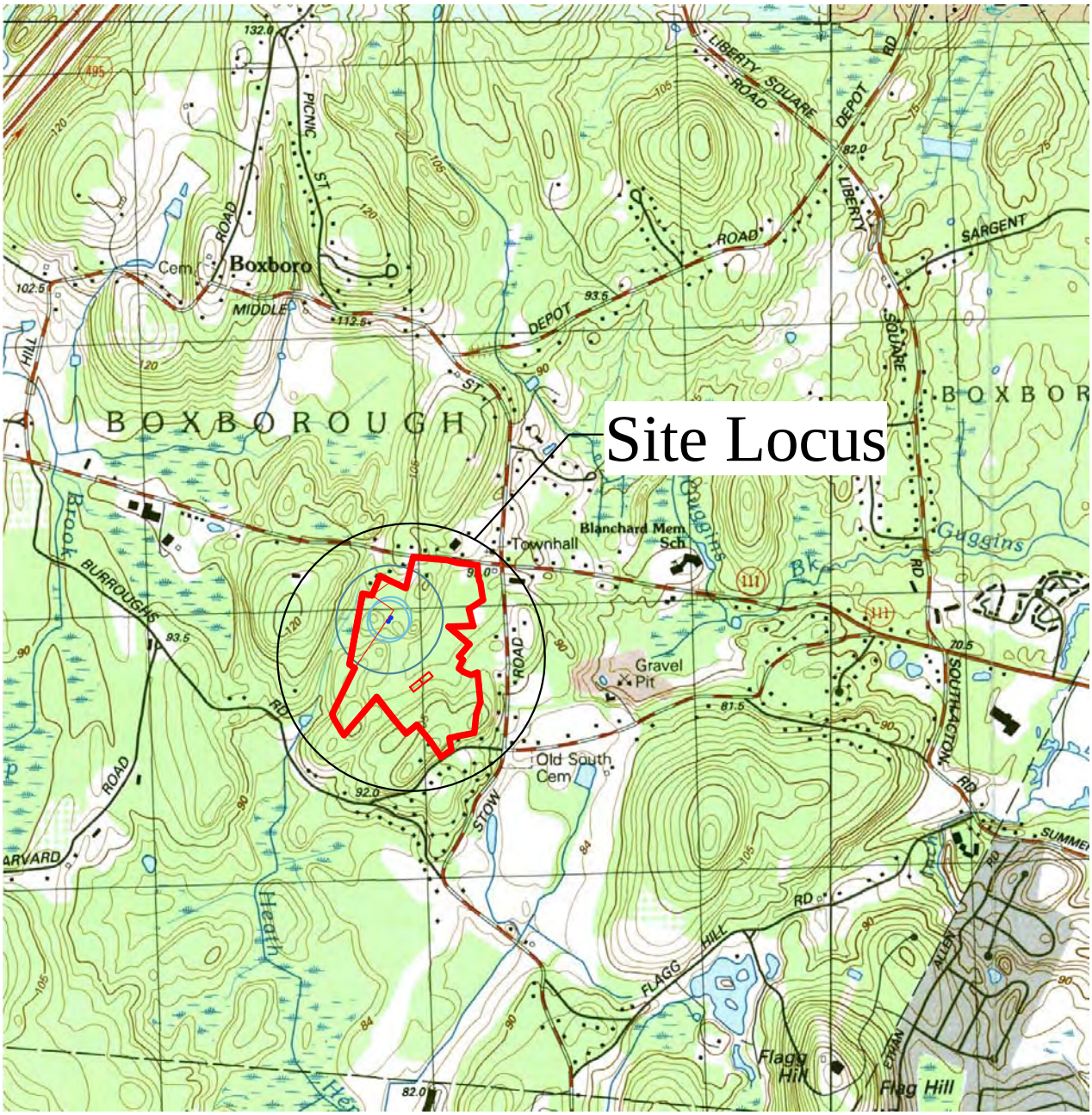
cc: Rich Harrington, Stamski & McNary, Inc.

Site Exam & PT Proposal.lwp

151B California Street
Newton, Massachusetts
02458

(617) 527-8074 (v)
(617) 527-8668 (f)

Enclosure 1 - Figures



0 2,000

Scale in feet

Base Map: MassGIS Quads q201910 & q201914.

GeoHydroCycle, Inc.

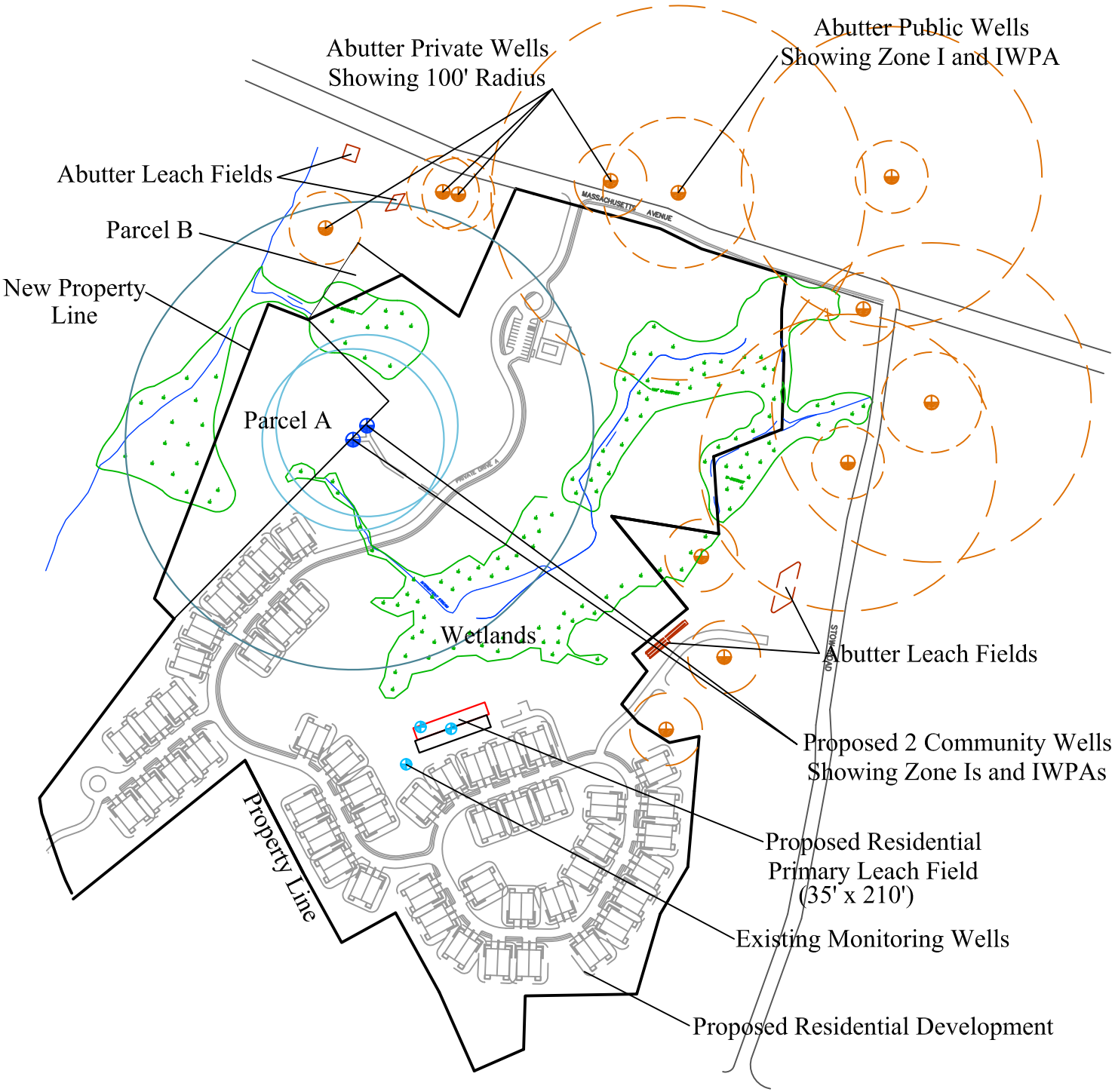
Figure 1. Site Locus.

Project No. GHC #15005

Drafted SWS Checked

Date 6/18/15 Rev 5/24/16

Regency at Boxborough
Massachusetts Avenue
Boxborough, MA



Regency at Boxborough
Massachusetts Avenue
Boxborough, MA

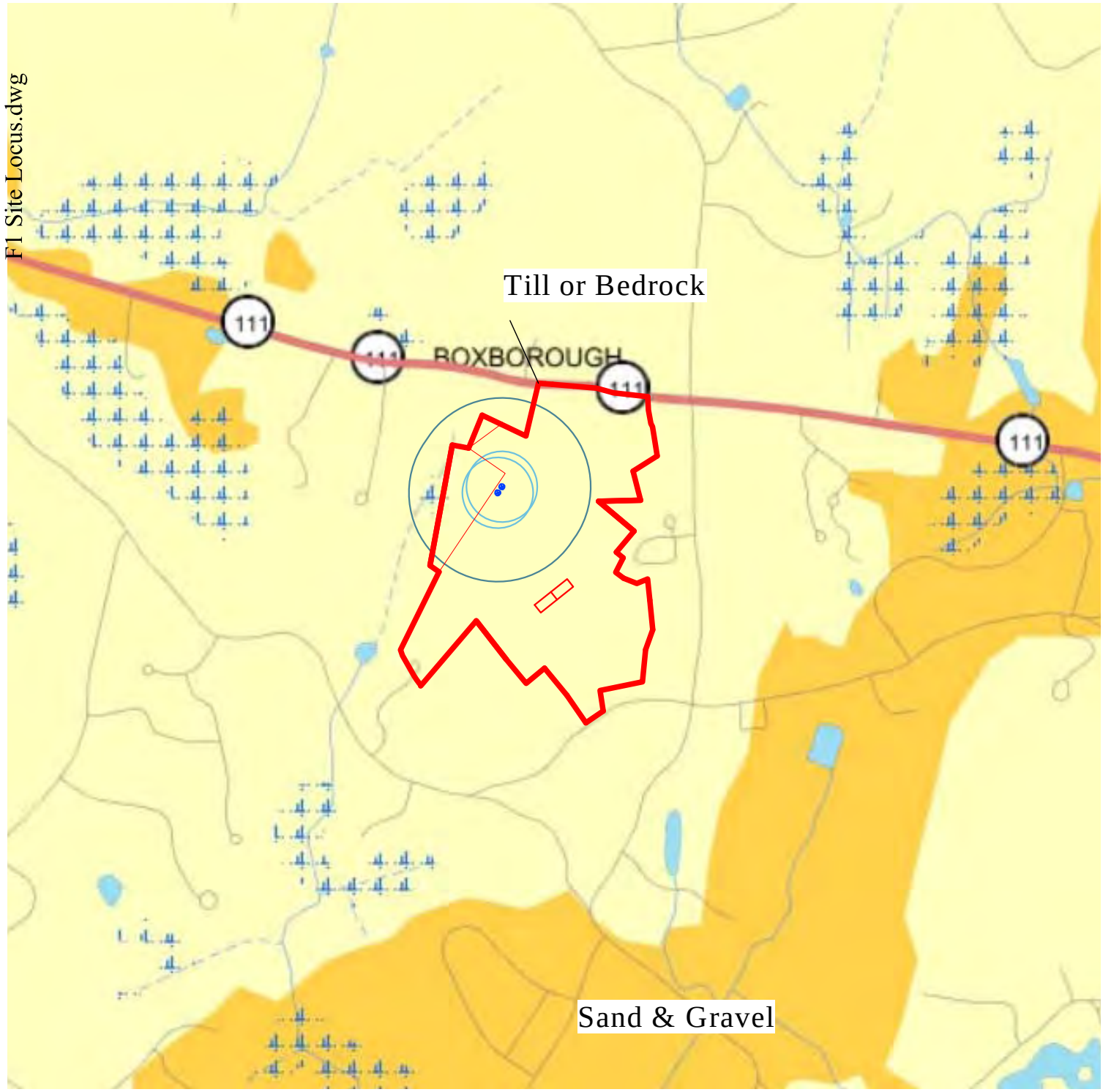
Figure 2. Site Features.

0 400

Scale in feet

Project No. GHC#15005
Drafted SWS Checked
Date 3/22/16 Rev 5/25/16
Base Map: CAD files obtained
from Stamski & McNary.

GeoHydroCycle, Inc.



0 1,000

Scale in feet

Base Map: MassGIS Web Site.

GeoHydroCycle, Inc.

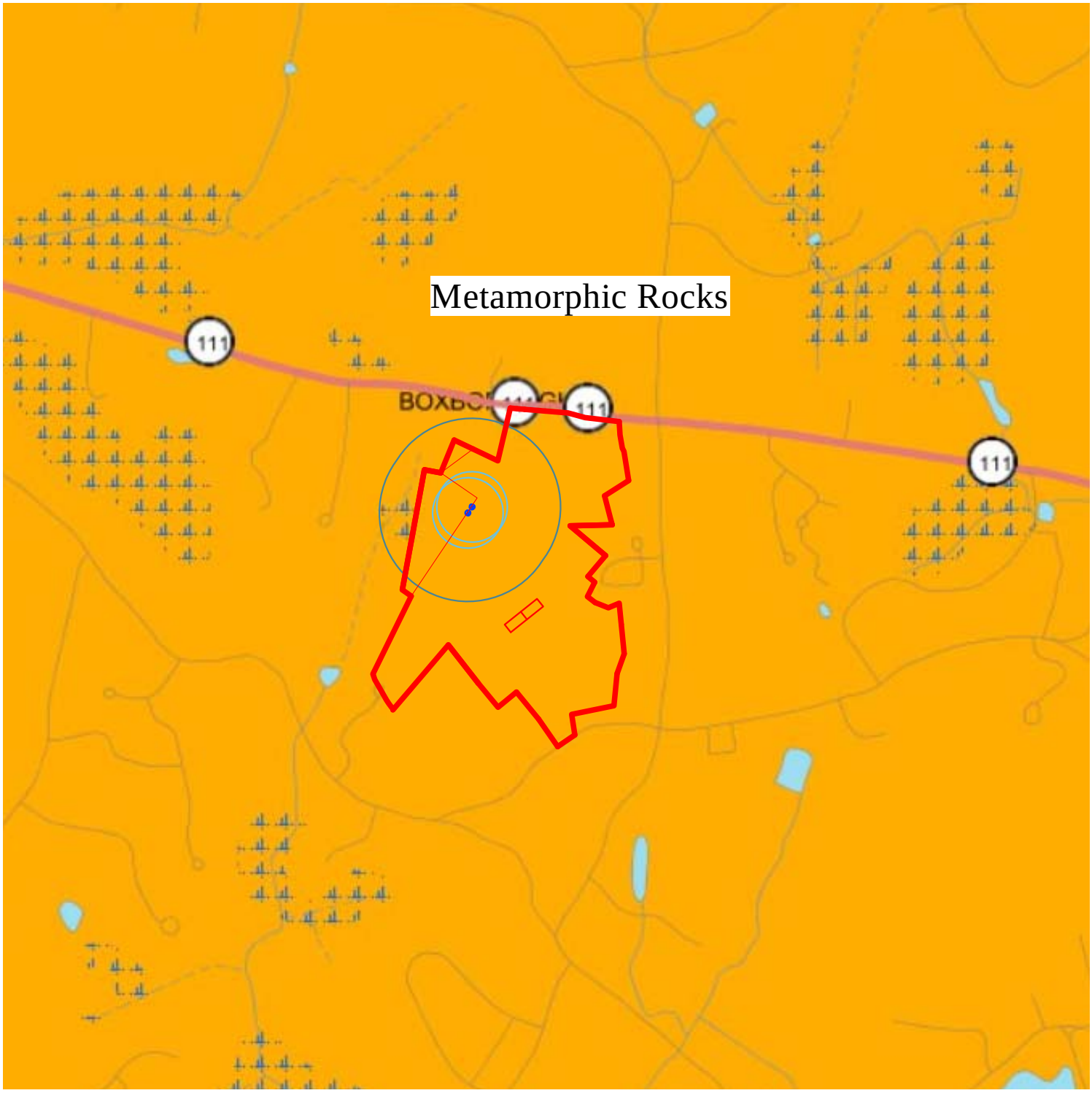
Figure 3. Surficial Geology.

Project No. GHC #15005

Drafted SWS Checked

Date 5/18/16 Rev

Regency at Boxborough
Massachusetts Avenue
Boxborough, MA



0 1,000

Scale in feet

Base Map: MassGIS Web Site.

GeoHydroCycle, Inc.

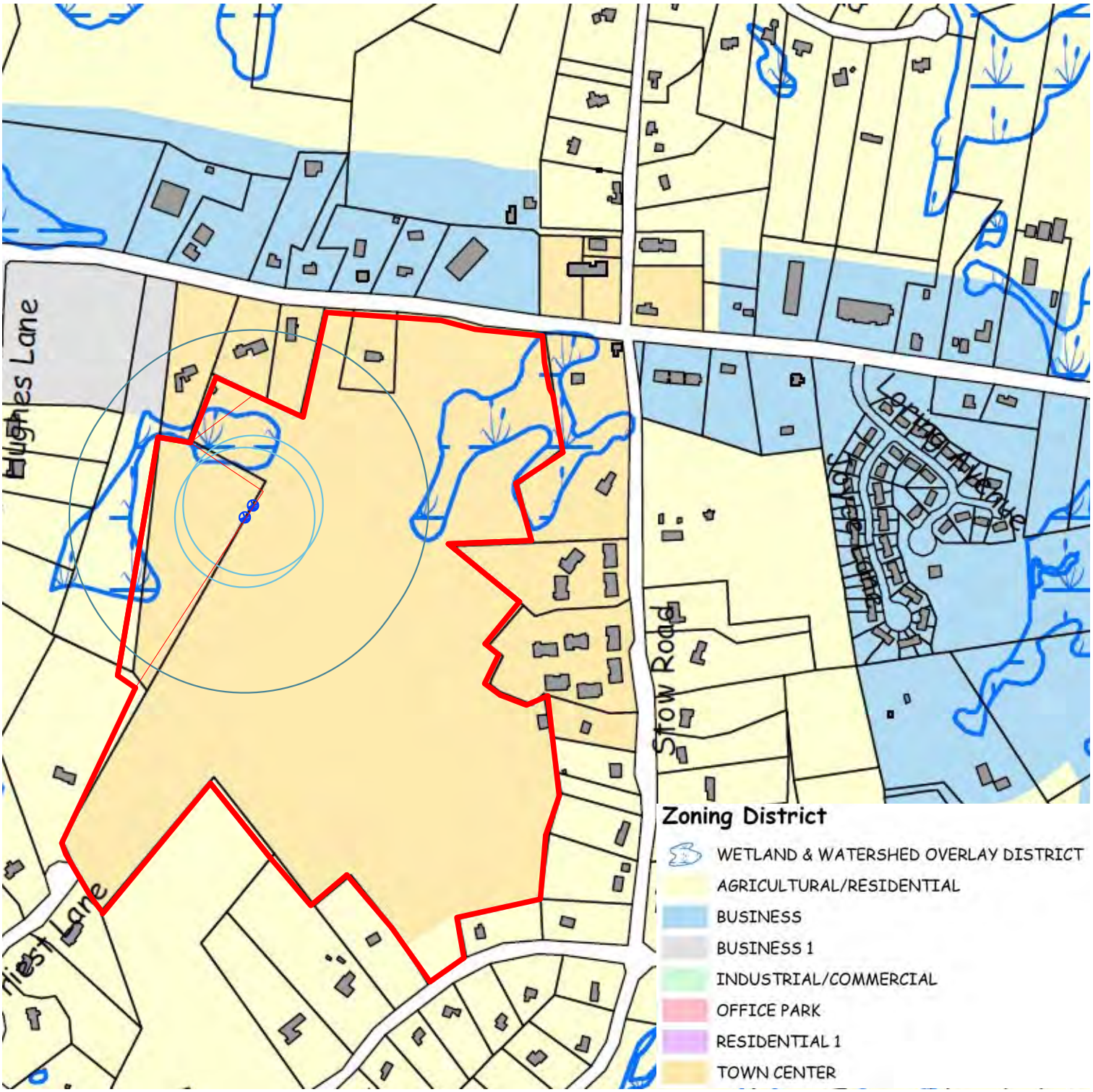
Figure 4. Bedrock Geology.

Project No. GHC #15005

Drafted SWS Checked

Date 5/18/16 Rev 5/24/16

Regency at Boxborough
Massachusetts Avenue
Boxborough, MA



0 500

Scale in feet

Base Map: Boxborough Web Site.

GeoHydroCycle, Inc.

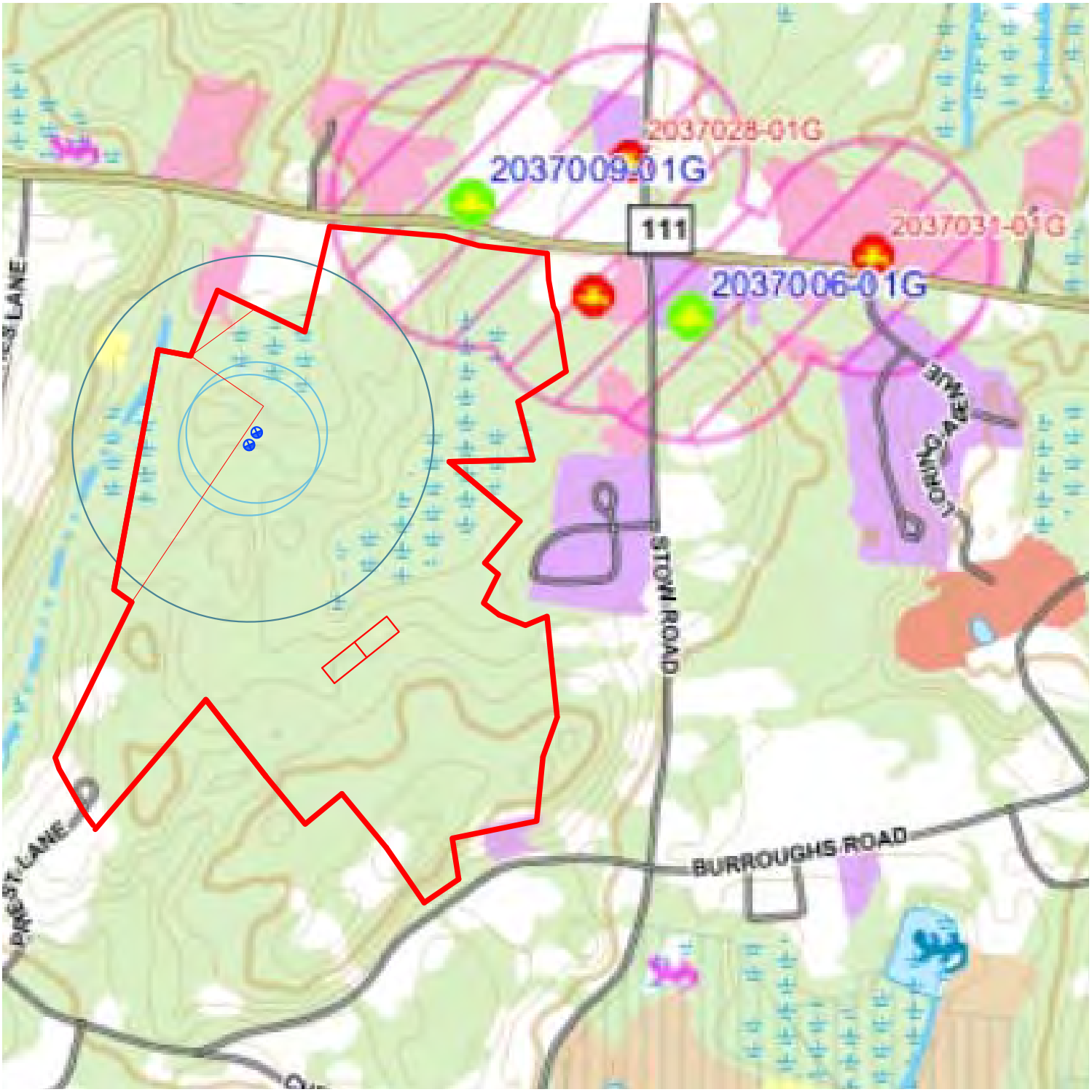
Figure 5. Boxborough Zoning.

Project No. GHC #15005

Drafted SWS Checked

Date 5/18/16 Rev 5/24/16

Regency at Boxborough
Massachusetts Avenue
Boxborough, MA



0 2,000

Scale in feet

Base Map: MassGIS Web Site.

GeoHydroCycle, Inc.

Figure 6. Nearby Public Wells.

Project No. GHC #15005

Drafted SWS Checked

Date 5/18/16 Rev 5/24/16

Regency at Boxborough
Massachusetts Avenue
Boxborough, MA

Figure 7. Site Survey.

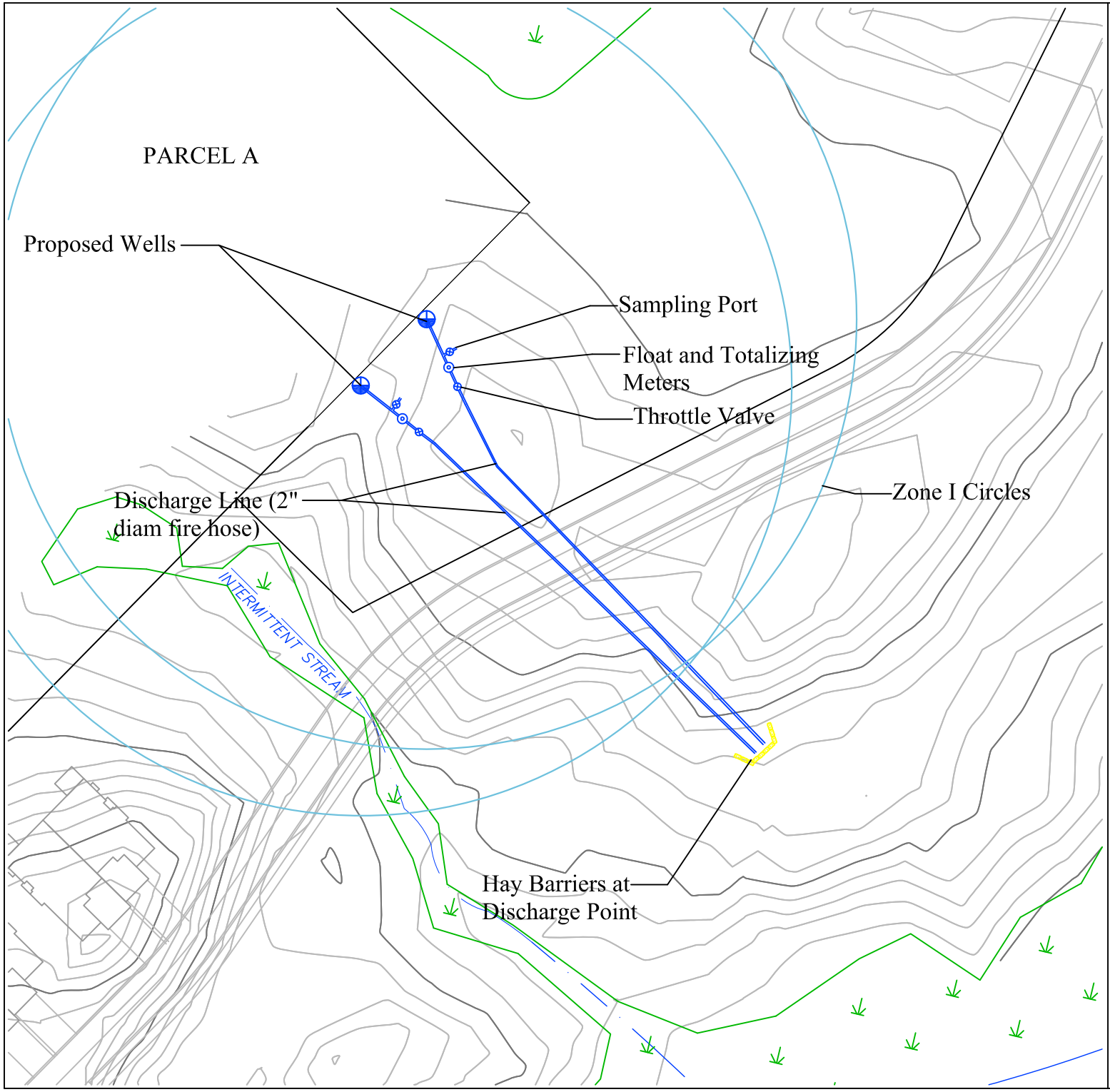
PRELIMINARY SITE PLAN
IN
BOXBOROUGH, MASSACHUSETTS

LAYOUT PLAN
FOR: BOXBOROUGH TOWN CENTER, LLC
SCALE: 1"=120' MARCH 14, 2016
REVISED: MAY 21, 2016

STAMSKI AND MCNARY, INC.
1000 MAIN STREET ACTON, MASSACHUSETTS
ENGINEERING – PLANNING – SURVEYING

0 60 120 240 360 480 FT

(2069 SITE3A.dwg) Sheet 1 of 3 SM-2069



Regency at Boxborough
Massachusetts Avenue
Boxborough, MA

Figure 8. Pump Test Layout.

0 80
Scale in feet

Project No. GHC#15005
Drafted SWS Checked
Date 3/22/16 Rev 5/24/16
Base Map: CAD files obtained from Stamski & McNary.

GeoHydroCycle, Inc.

Enclosure 2 - Water Quality Sampling Requirements

Table 1. Pump Test Sampling Schedule.

Field Testing (pH, odor, specific conductance, CO2, temperature)

1	@	After beginning of test.
2	@	24 hours into test.
3	@	72 hours into test.
4	@	120 hours into test.

Total Coliform

1	@	60 hours into test.
2	@	120 hours into test.

Radionuclides (Gross Alpha and Radium)

1	@	120 hours into test.

Inorganics (Attached Appendix A)

1	@	120 hours into test.

Secondary Contaminants (Attached Appendix A)

1	@	1 hour into test.
2	@	48 hours into test.
3	@	96 hours into test.
4	@	120 hours into test.

Appendix A
Water Quality Testing Requirements for Source Approval

All testing must be done in accordance with 310 CMR 22.00 (Massachusetts Drinking Water Regulations). Among these requirements are the use of a laboratory certified in the specific analyte, using approved methodology and reporting on MA Department forms (pursuant to 310 CMR 22.11A) as well as meeting all applicable method detection limits.

1. ***Coliform Bacteria****

2. ***Inorganic Compounds***

Arsenic	Mercury
Antimony	Nickel
Barium	Nitrate (N)
Beryllium	Nitrite
Cadmium	Perchlorate
Chromium	Selenium
Cyanide	Sodium
Fluoride	Sulfate
Lead	Thallium

3. ***Synthetic Organic Compounds (SOCs)***

All regulated and unregulated SOCs per 310 CMR 22.07A(1) and 22.07C(7) excluding:
- Diquat
- Endothall
- Glyphosate
- 2,3,7,8 -TCDD (Dioxin)

Surface water sources do not have to test for EDB and DBCP.

4. ***Volatile Organic Compounds (VOCs)***

All VOCs as per 22.07B(1), 22.07C(5)

***** If the result of any analysis is positive for total coliform, then the sample must be analyzed for enterococci (and/or coliphage at MassDEP's discretion).

****** If required by MassDEP

******* Testing for these parameter is only required if the gross beta particle activity is equal to or greater than 50 pCi/L.

5. ***Radionuclides***

Gross alpha activity
Radium-226 & 228
Beta particle activity******
Photon activity*******
Tritium*******
Strontium-90*******
Radon
Uranium********

6. ***Secondary Contaminants***

TDS
Color
Odor
pH
Alkalinity-Total ($CaCo_3$)
Hardness ($CaCO_3$)
Calcium (Ca)
Manganese (Mn)
Potassium (K)
Iron (Fe)
Magnesium (Mg)
Sulfate (SO_4)
Chloride (Cl)
Silver (Ag)
Turbidity
Aluminum (Al)
Zinc (Zn)
Copper (Cu)

7. ***Other***
Carbon dioxide
Nitrogen (Ammonia)
Specific conductance
Temperature

******** Testing for this parameter is only required if the gross alpha activity is greater than 15 pCi/L.

Encosure 3 - Copies of Transmittal and BRP WS-13 Forms

Enter your transmittal number → X270140
Transmittal Number

Your unique Transmittal Number can be accessed online: http://mass.gov/dep/service/online/trasmfrm.shtml

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

BRP WS-13
1. Permit Code: 7 or 8 character code from permit instructions

New Source Approval
2. Name of Permit Category

Request Site Exam and Propose Pump Test
3. Type of Project or Activity

B. Applicant Information – Firm or Individual

Boxborough Town Center, LLC
1. Name of Firm - Or, if party needing this approval is an individual enter name below:

2. **Last Name** of Individual
3. **First Name** of Individual
4. MI

PO Box 985
5. Street Address

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Acton	MA	01720	(978) 266-9751	

James Fenton
11. Contact Person

fentonandson@msn.com
12. e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

Regency at Boxborough
1. Name of Facility, Site Or Individual

700 & 800 Massachusetts Avenue
2. Street Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Boxborough	MA	01719		

8. DEP Facility Number (if Known)
9. Federal I.D. Number (if Known)
10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

GeoHydroCycle, Inc.
1. Name of Firm Or Individual

151B California Street
2. Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Newton	MA	02458	(617) 527-8074	

Stephen W. Smith, P.E., P.HGW
8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☒ yes ☐ no
   If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. ☐ **Fee** Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).
   There are no fee exemptions for BWSC permits, regardless of applicant status.
2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. ☐ Homeowner (according to 310 CMR 4.02).

Check Number	Dollar Amount	Date
3424	$1,380.00	May 18, 2016

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Drinking Water Program

BRP WS Application

For Drinking Water Program (Water Supply) Permits or Approvals

X270140
Transmittal Number

Facility ID# (if known)

A. Application

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Is this application for ☒ an Original or ☐ a Resubmittal?

2. Applicant:

Name			Address	
Boxborough Town Center, LLC			PO Box 985	
City	**State**	**Zip**	**Contact**	**Telephone**
Acton	MA	01720	James Fenton	(978) 266-9751

3. Consultant:

Name			Address	
GeoHydroCycle, Inc.			151B California Street	
City	**State**	**Zip**	**Contact**	**Telephone**
Newton	MA	02458	Stephen W. Smith, P.E., P.HGW	(617) 527-8074

B. Permit

Please check the permit or approval for which you are applying:

Zone II Determination for Existing Sources
- ☐ BRP WS 07 Approval to Conduct Pump Test for Zone II Delineation
- ☐ BRP WS 08 Approval of Zone II Delineation

New Technology
- ☐ BRP WS 11 Minor New Technology Approval; where no field test required
  - ☐ Drinking Water Additive
  - ☐ Cross Connection Device
  - ☐ Water Vending Machine
  - ☐ Other (specify):
- ☐ BRP WS 12 Major New Technology Approval: where field testing is required
- ☐ BRP WS 27 New Technology with Third-party Approval
- ☐ BRP WS 28 Vending Site/Source Prototype
- ☐ BRP WS 31 Vending and POU/POE Devices with Third-party Approval

New Source Approvals <70 gpm
- ☒ BRP WS 13 Exploratory Phase, Site Examination, Land Use Survey and Approval to Conduct Pumping Test
- ☐ BRP WS 15 Pumping Test Report Approval and Approval to Construct Source
- ☐ BRP WS 37 Approval of Transient Non-Community Source Less than 7 Gallons per Minute (combines BRP WS 13 and BRP WS 15 submittals)

New Source Approvals = or > 70 gpm
- ☐ BRP WS 17 Exploratory Phase, Site Examination, Land Use Survey, and Conduct Pumping Test
- ☐ BRP WS 19 Pumping Test Report Approval
- ☐ BRP WS 20 To Construct Source

Water Treatment Approvals
- ☐ BRP WS 21A To Conduct Pilot Study < 40,000 gpd
- ☐ BRP WS 21B To Conduct Pilot Study = or > 40,000 gpd and < 200,000 gpd
- ☐ BRP WS 21C To Conduct Pilot Study = or > 200,000 gpd and < 1 mgd
- ☐ BRP WS 21D To Conduct Pilot Study = or > 1 mgd
- ☐ BRP WS 22A Pilot Study Report < 40,000 gpd
- ☐ BRP WS 22B Pilot Study Report = or > 40,000 gpd and < 200,000 gpd
- ☐ BRP WS 22C Pilot Study Report = or > 200,000 gpd and < 1 mgd
- ☐ BRP WS 22D Pilot Study Report = or > 1 mgd
- ☐ BRP WS 23A To Construct Facility <40,000 gpd
- ☐ BRP WS 23B To Construct Facility = or > 40,000 gpd and < 200,000 gpd
- ☐ BRP WS 23C To Construct Facility = or > 200,000 gpd and < 1 mgd
- ☐ BRP WS 24 To Construct Facility = or > 1 mgd
- ☐ BRP WS 25 Treatment Facility Modification
- ☐ BRP WS 29 Water Treatment: Chemical Addition Retrofits of Water Systems > 3,300 people
- ☐ BRP WS 30A Vending Installation Approval
- ☐ BRP WS 30B POU/POE Installation Approval
- ☐ BRP WS 34 Water Treatment: Chemical Addition Retrofits of Water Systems = or < 3,300 people
- ☐ BRP WS 35A Multiple Vending Installation Approval
- ☐ BRP WS 35B Multiple POU/POE Installation Approval

Water Quality Assurance
- ☐ BRP WS 26 Sale or Acquisition of Land for Water Source
- ☐ BRP WS 36 Abandonment of Water Source

Distribution System Modifications
- ☐ BRP WS 32 Systems > 3,300 people
- ☐ BRP WS 33 Systems = or < 3,300 people

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Drinking Water Program

BRP WS Application

For Drinking Water Program (Water Supply) Permits or Approvals

X270140
Transmittal Number

Facility ID# (if known)

C. Certification

"I certify, under penalty of law, that this application and all attachments were prepared under my supervision, in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted in this application, the information submitted is, to the best of my knowledge and belief, true, accurate and complete."

Stephen W. Smith — 5/25/16

Authorized Signature — Date

Stephen W. Smith, P.E., P.HGW — President, GeoHydroCycle, Inc.

Print Name — Position/Title

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Central Regional Office • 8 New Bond Street, Worcester MA 01606 • 508-792-7650

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

June 30, 2016

Boxborough Town Center, LLC
Attn: James Fenton
P.O. Box 985
Acton, MA 01720

Town: Boxborough
Facility: Regency at Boxborough
PWS ID: TBD RO: 575982
Permit: WS13
MassDEP Transmittal: X270140
Action: **Approved**

Dear Mr. Fenton,

The Central Regional Office of the Massachusetts Department of Environmental Protection received your permit application, WS13, Site Examination and Approval to Conduct Pumping Test on sources less than 70 gallons per minute for the proposed new wells to serve the proposed Regency at Boxborough Community Public Water System on May 27, 2016. The submittal includes:

BRP WS13, MassDEP Transmittal X270140
Report: "Regency at Boxborough, Proposed Community Wells, Boxborough, MA 01719"
Dated: May 25, 2016
Prepared by: GeoHydroCycle, Inc.
Contact: Stephen W. Smith
Start Date of Application: May 31, 2016

Project Description and Background

Boxborough Town Center LLC is proposing to develop the site at 700 Massachusetts Avenue in Boxborough as an age restricted (55 and older) residential development. The development is proposed to be thirty (30) three-bedroom units and seventy (70) two-bedroom units. The Title 5 design flow is 20,400 gallons per day (gpd) [30 x 330 gpd + 70 x 150 gpd]. A clubhouse is also proposed, but the design flow is suggested by the Applicant to be considered as part of the unit flow. If additional flow is required as part of the wastewater approval, then the water supply approved rate can be adjusted to include the flow, as long as the pumping test is conducted to accommodate the additional flow and the Zone I areas can be enlarged.

This information is available in alternate format. Call Michelle Waters-Ekanem, Diversity Director, at 617-292-5751. TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

Site Description

Two new PWS wells are proposed with an average daily pumping volume of 10,200 gpd each. Each well will have a Zone I radius of 251 feet and an Interim Wellhead Protection Area (IWPA) of 627 feet. A site visit was conducted on June 24, 2016, and was attended by Susan Connors of MassDEP, Stephen Smith of GeoHydroCycle, Inc. and Richard Harrington of Stamski and McNary, Inc. The proposed Zone I area is forest and wetland resource area. The Zone I area currently extends onto an abutting parcel not owned by Boxborough Town Center LLC. The owner of that parcel where the Zone I extends has indicated to the Applicant, that they will sell a portion of the parcel that contains the Zone I radius to Boxborough Town Center LLC. The transfer will take place once all permits necessary to start construction have been issued. It is proposed that all of the land will then be transferred to a builder who will complete the project, and eventually transfer all of the land and the public water system to a condominium association.

According to a search of MassGIS data, there are no certified vernal pools, areas designated as Priority Habitat for Rare Species, Areas of Critical Environmental Concern, groundwater discharges, NPDES surface water discharges, or solid waste facilities within a one-half mile radius of the proposed wells. The groundwater discharge for the facility will be located outside of the IWPA.

There are five (5) public water supply sources within a one half mile radius of the proposed wells, but all are outside of the IWPA. The well for Carriage House Condominium is approximately 1,500 feet away from the proposed wells. Through a request to MassDEP, Carriage House Condominium requested that their well be monitored prior to, during, and after the pumping test. According to the Applicant two additional private wells abutting the project have also asked to have their wells monitored.

There are four (4) hazardous waste sites within a one-half mile radius of the proposed wells (RTN 2-0011582, 2-0013332, 2-0015550, and 2-0010209). All of the sites are outside of the IWPA and are classified as Response Action Outcome where response actions were sufficient to achieve a level of no significant risk, or to at least ensure that all substantial hazards were eliminated.

There are portions of four developed private properties within the proposed IWPA and likely all or most of the water supply wells and septic systems for those properties are within the IWPA. Surface waters within a one-half mile radius include Heath Hen Meadow Brook and wetland resource areas. A Notice of Intent was filed with the Boxborough Conservation Commission as MassDEP File Number 113-532. An Order of Conditions was recorded on June 9, 2016. The area of wetlands resource delineation was approved by the Boxborough Conservation Commission. The proposed location for the water supply wells and access to the wells is outside of the buffer zone. The discharge from the pumping test will be located outside of the Zone I area and not to the wetland resource area.

Review and Approval

This permit application complies with the requirements at 310 CMR 22.00 Drinking Water Program Regulations and MassDEP's Guidelines and Policies for Public Water Systems. MassDEP reviewed the permit application and supporting documentation, and hereby issues the permit/approval. In the event this permit conflicts with all or parts of prior approvals or permits, the terms and conditions of this permit shall supersede the conflicting provisions of prior permits and/or approvals. This permit does not convey property rights of any sort or any exclusive privilege. Pursuant to MassDEP's authority under 310 CMR 22.04(7) to require that each supplier of water operate and maintain its system in a manner that ensures the delivery of safe drinking water to consumers, this permit is made subject to the conditions set forth below.

General Permit Conditions

1. Compliance with Permit Approvals – The Applicant shall conduct activities in accordance with the approved plans, reports, and other submissions, except as may be modified by the conditions set forth in the General Permit Conditions and Special Permit Conditions. No material changes in the design or activities described in the approved documents shall be performed without prior written MassDEP approval.

2. Compliance with Other Approvals – The activities at this Public Water System shall be performed in compliance with all other applicable local, state and federal laws and regulations. This approval does not relieve the owner or operator of this Public Water System from complying with all other applicable local, state and federal requirements, licenses and permits.

3. Duty to Mitigate – The Applicant shall remedy and shall act to prevent all potential and actual adverse impacts to public health or the environment resulting from noncompliance with the terms or conditions of the permit or approval.

4. Duty to Provide Information – The Applicant shall furnish to MassDEP, within a reasonable time, any information MassDEP may request, and which is deemed by MassDEP to be relevant in determining compliance with permits, regulations, guidelines and policies.

Specific Permit Conditions

1. Pumping Test Design – In order to insure that an adequate volume of water is available to supply potable water for residential use, the prolonged pumping test shall be conducted as a five-day pumping test, and shall meet the stabilization criteria set forth in MassDEP's Guidelines and Policies. The pumping test shall be conducted as described in the WS13 application and with the following conditions:
   - Water level data shall be collected during the step-drawdown test in the opposite well at the same frequency as the pumping well. It is recommended that the data be submitted to MassDEP for review and discussion prior to initiating the prolonged pumping test.

- Manual water level measurements should be collected during the prolonged pumping test in addition to the electronic data in order to safeguard against a failed transducer.
- The minimum pumping rate of 9.5 gpm suggested in the permit may not be sufficient for additional flow for the clubhouse. Submit to MassDEP the results of the step tests and a proposed prolonged pumping rate prior to starting the five-day pumping test.
- Water level monitoring in the public water supply well for Carriage House Condominiums, and any other private wells who requested monitoring, is required before, during and after the pumping test. A temporary transducer shall be installed to record baseline water level trends in each well, ten days prior to initiating the prolonged pumping test, during the prolonged pumping test, and for one week after shutdown of the pumping test. The frequency of transducer readings should be at least hourly and even more frequent if possible.

2. Water Quality Sampling – All water quality sampling shall be conducted as stated in the WS13 application and in accordance with the requirements of 310 CMR 22.00 and MassDEP's Guidelines and Policies including Appendix A and with the following additions:
   - Sampling for perchlorate, all regulated and unregulated Volatile Organic Compounds, and all regulated and unregulated Synthetic Organic Chemicals shall be conducted at the end of the pumping test.
   - Radionuclide sampling at the end of the pumping test shall include gross alpha, uranium, radium-226, radium-228, and radon.
   - In lieu of proposed 48-hour and 96-hour samples for secondary contaminants, a single mid-point sample coordinated with the total coliform sampling is authorized. Alternatively, the proposed schedule for four samples is also approved.

3. Water Quality Analysis – All water quality analyses must be conducted by a Massachusetts certified laboratory, using approved methods and achieving the required method detection limits. All water quality analytical data shall be reported on MassDEP Forms.

4. MEPA – An Environmental Notification Form is required to be submitted to the Massachusetts Environmental Policy Act Office. No additional water supply permits will be issued until the MEPA process is complete.

5. Zone I Radius Ownership and Control – The Drinking Water Program Regulations at 310 CMR 22.21(3)(b) require that the Public Water System must have the ownership or control of the area within the Zone I radius of each of the proposed groundwater source wells to protect the water from contamination. The Applicant shall submit to MassDEP as part of the WS 15 Permit application, a surveyed plot plan of the Zone I area, clearly delineating the limits of Zone I property ownership. Furthermore, current and future land uses within the Zone I shall be limited to those land uses directly related to the provision of public water system.

6. Pumping Test Report and Construction of Source – The Applicant shall submit to MassDEP for review and approval, a completed Pumping Test Report and Construction of Source permit application (WS 15) in accordance with the requirements of MassDEP's Guidelines and Policies within two years of the date of this permit. The Reports and Plans shall include, but not be limited to, a summary of the results of the pumping test and water quality analyses and draft design plans for the water supply appurtenances.

7. Water Treatment – If the water samples collected during the pumping test exhibit the need for treatment (e.g. violations of MCLs), then the appropriate permit application for Approval to Construct a Treatment Facility shall be submitted concurrent with the pumping test.

8. Financial Capacity/Assurance – MassDEP Regulations 310 CMR 22.04(1)(a)3 require that the public water system shall demonstrate to MassDEP's satisfaction that it has the technical, managerial, and financial capacity to operate and maintain the public water system in compliance with 310 CMR 22.00 and each National Primary Drinking Water Regulation in effect at the time of MassDEP's determination of the public water system's capacity and in effect in the foreseeable future. Prior to transfer of the public water system to the condo association, the builder is required to provide an escrow agreement to demonstrate the ability to finance the operation, maintenance, repair, and replacement in the event of an emergency and on a long term basis. Provide prior to the final inspection, an itemized cost estimate of construction and operation and maintenance of the public water system components to provide the basis for escrow agreements for repair and maintenance, and the capital reserve account. This accounting will provide the basis for the escrow agreement. To aid in this requirement, an Excel spreadsheet, "Asset Management Worksheet", is available under the heading "Capacity Development: Asset Management" on MassDEP's web page at http://www.mass.gov/eea/agencies/massdep/water/drinking/water-systems-ops.html#3. An electronic copy is also available upon request.

If you have any questions regarding this permit, please contact Susan Connors of the Drinking Water Program at 508-767-2701 or by email at Susan.Connors@state.ma.us.

Sincerely,

Robert A. Bostwick

Robert A. Bostwick, Section Chief
Drinking Water Program

Cc: Stephen Smith, GeoHydroCycle, Inc., 151B California Street, Newton, MA 02458
Richard Harrington, Stamski and McNary, Inc. (via email)
Boxborough Board of Health, 29 Middle Road, Boxborough, MA 01719

Enclosure 5 - Laboratory Reports

ANALYTICAL REPORT

Lab Number:	L1637399
Client:	GeoHydroCycle, Inc. 151B California Street Newton, MA 02458
ATTN:	Stephen Smith
Phone:	(617) 527-8074
Project Name:	REGENCY AT BOXBOROUGH
Project Number:	15005
Report Date:	11/28/16

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637399
Report Date: 11/28/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1637399-01	PW-1	DW	BOXBOROUGH, MA	11/16/16 22:40	11/17/16
L1637399-02	PW-2	DW	BOXBOROUGH, MA	11/16/16 22:55	11/17/16

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637399
Project Number: 15005 **Report Date:** 11/28/16

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.

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: Michelle M. Morris

Title: Technical Director/Representative Date: 11/28/16

METALS

Project Name:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637399
Project Number:	15005	**Report Date:**	11/28/16

SAMPLE RESULTS

Lab ID:	L1637399-01	Date Collected:	11/16/16 22:40
Client ID:	PW-1	Date Received:	11/17/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw		

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	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS
Calcium, Total	48.3		mg/l	0.100	--	1	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS
Copper, Total	0.0318		mg/l	0.0010	--	1	11/18/16 06:40	11/18/16 11:48	EPA 3005A	3,200.8	AM
Iron, Total	ND		mg/l	0.050	--	1	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS
Magnesium, Total	14		mg/l	0.10	--	1	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS
Manganese, Total	0.159		mg/l	0.010	--	1	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS
Potassium, Total	2.62		mg/l	2.50	--	1	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS
Silver, Total	ND		mg/l	0.0010	--	1	11/18/16 06:40	11/18/16 11:48	EPA 3005A	3,200.8	AM
Zinc, Total	0.0209		mg/l	0.0050	--	1	11/18/16 06:40	11/18/16 11:48	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	180		mg/l	0.660	NA	1	11/18/16 06:40	11/18/16 19:43	EPA 3005A	19,200.7	PS

Project Name:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637399
Project Number:	15005	**Report Date:**	11/28/16

SAMPLE RESULTS

Lab ID:	L1637399-02	Date Collected:	11/16/16 22:55
Client ID:	PW-2	Date Received:	11/17/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw		

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	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS
Calcium, Total	57.0		mg/l	0.100	--	1	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS
Copper, Total	0.0014		mg/l	0.0010	--	1	11/18/16 06:40	11/18/16 12:13	EPA 3005A	3,200.8	AM
Iron, Total	0.470		mg/l	0.050	--	1	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS
Magnesium, Total	16		mg/l	0.10	--	1	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS
Manganese, Total	1.39		mg/l	0.010	--	1	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS
Potassium, Total	3.23		mg/l	2.50	--	1	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS
Silver, Total	ND		mg/l	0.0010	--	1	11/18/16 06:40	11/18/16 12:13	EPA 3005A	3,200.8	AM
Zinc, Total	0.5486		mg/l	0.0050	--	1	11/18/16 06:40	11/18/16 12:13	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	210		mg/l	0.660	NA	1	11/18/16 06:40	11/19/16 00:00	EPA 3005A	19,200.7	PS

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637399

Project Number: 15005 **Report Date:** 11/28/16

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): 01-02 Batch: WG953600-1										
Aluminum, Total	ND		mg/l	0.100	--	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS
Calcium, Total	ND		mg/l	0.100	--	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS
Magnesium, Total	ND		mg/l	0.10	--	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS
Potassium, Total	ND		mg/l	2.50	--	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS

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): 01-02 Batch: WG953600-1										
Hardness	ND		mg/l	0.660	NA	1	11/18/16 06:40	11/18/16 19:34	19,200.7	PS

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): 01-02 Batch: WG953602-1										
Copper, Total	ND		mg/l	0.0010	--	1	11/18/16 06:40	11/18/16 11:36	3,200.8	AM
Silver, Total	ND		mg/l	0.0010	--	1	11/18/16 06:40	11/18/16 11:36	3,200.8	AM
Zinc, Total	ND		mg/l	0.0050	--	1	11/18/16 06:40	11/18/16 11:36	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH

Project Number: 15005

Lab Number: L1637399

Report Date: 11/28/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG953600-2								
Aluminum, Total	100		-		85-115	-		
Calcium, Total	99		-		85-115	-		
Iron, Total	97		-		85-115	-		
Magnesium, Total	100		-		85-115	-		
Manganese, Total	99		-		85-115	-		
Potassium, Total	102		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG953600-2								
Hardness	102		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG953602-2								
Copper, Total	104		-		85-115	-		
Silver, Total	106		-		85-115	-		
Zinc, Total	110		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637399
Report Date: 11/28/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG953600-3 QC Sample: L1637399-01 Client ID: PW-1												
Aluminum, Total	ND	2	2.04	102		-	-		75-125	-		20
Calcium, Total	48.3	10	58.8	105		-	-		75-125	-		20
Iron, Total	ND	1	0.994	99		-	-		75-125	-		20
Magnesium, Total	14	10	25	110		-	-		75-125	-		20
Manganese, Total	0.159	0.5	0.651	98		-	-		75-125	-		20
Potassium, Total	2.62	10	13.0	104		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG953600-3 QC Sample: L1637399-01 Client ID: PW-1												
Hardness	180	66.2	248	103		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG953602-3 QC Sample: L1637399-01 Client ID: PW-1												
Copper, Total	0.0318	0.25	0.2876	102		-	-		70-130	-		20
Silver, Total	ND	0.05	0.0520	104		-	-		70-130	-		20
Zinc, Total	0.0209	0.5	0.5334	102		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637399
Report Date: 11/28/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG953600-4 QC Sample: L1637399-01 Client ID: PW-1						
Aluminum, Total	ND	ND	mg/l	NC		20
Calcium, Total	48.3	49.0	mg/l	1		20
Iron, Total	ND	ND	mg/l	NC		20
Magnesium, Total	14	15	mg/l	7		20
Manganese, Total	0.159	0.160	mg/l	1		20
Potassium, Total	2.62	2.66	mg/l	2		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG953600-4 QC Sample: L1637399-01 Client ID: PW-1						
Hardness	180	183	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG953602-4 QC Sample: L1637399-01 Client ID: PW-1						
Copper, Total	0.0318	0.0315	mg/l	1		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.0209	0.0204	mg/l	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637399
Report Date: 11/28/16

SAMPLE RESULTS

Lab ID: L1637399-01
Client ID: PW-1
Sample Location: BOXBOROUGH, MA
Matrix: Dw

Date Collected: 11/16/16 22:40
Date Received: 11/17/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.34		NTU	0.20	--	1	-	11/17/16 20:54	44,180.1	AS
Odor @ 60 C	NO ODOR		TON	1	--	1	-	11/17/16 18:00	30,2150B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	11/17/16 18:20	121,2120B	AS
Alkalinity, Total	81.3		mg CaCO3/L	2.00	NA	1	-	11/18/16 10:15	121,2320B	BR
Solids, Total Dissolved	290		mg/l	10	--	1	-	11/18/16 13:15	121,2540C	DW
pH (H)	7.1		SU	-	NA	1	-	11/17/16 18:24	121,4500H+-B	AS
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	11/17/16 16:05	121,9223B	TP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	11/17/16 16:05	121,9223B	TP
Anions by Ion Chromatography - Westborough Lab										
Chloride	93.4		mg/l	2.50	--	5	-	11/17/16 23:09	44,300.0	AU
Sulfate	8.73		mg/l	1.00	--	1	-	11/17/16 20:20	44,300.0	AU

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637399
Report Date: 11/28/16

SAMPLE RESULTS

Lab ID: L1637399-02
Client ID: PW-2
Sample Location: BOXBOROUGH, MA
Matrix: Dw

Date Collected: 11/16/16 22:55
Date Received: 11/17/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	4.8		NTU	0.20	--	1	-	11/17/16 20:54	44,180.1	AS
Odor @ 60 C	NO ODOR		TON	1	--	1	-	11/17/16 18:00	30,2150B	AS
Color, Apparent	6.0		A.P.C.U.	5.0	--	1	-	11/17/16 18:20	121,2120B	AS
Alkalinity, Total	96.1		mg CaCO3/L	2.00	NA	1	-	11/18/16 10:15	121,2320B	BR
Solids, Total Dissolved	290		mg/l	10	--	1	-	11/18/16 13:15	121,2540C	DW
pH (H)	6.9		SU	-	NA	1	-	11/17/16 18:24	121,4500H+-B	AS
Bacteria in Water - Westborough Lab										
Coliform, Total	Positive		col/100ml	-	NA	1	-	11/17/16 16:05	121,9223B	TP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	11/17/16 16:05	121,9223B	TP
Anions by Ion Chromatography - Westborough Lab										
Chloride	107.		mg/l	2.50	--	5	-	11/17/16 23:21	44,300.0	AU
Sulfate	11.4		mg/l	1.00	--	1	-	11/17/16 20:32	44,300.0	AU

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637399

Project Number: 15005 **Report Date:** 11/28/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Bacteria in Water - Westborough Lab for sample(s): 01-02 Batch: WG953427-1										
Coliform, Total	Negative		col/100ml	-	NA	1	-	11/17/16 16:05	121,9223B	TP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	11/17/16 16:05	121,9223B	TP
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG953486-1										
Odor	NO ODOR		TON	1	--	1	-	11/17/16 18:00	30,2150B	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG953513-1										
Turbidity	ND		NTU	0.20	--	1	-	11/17/16 20:54	44,180.1	AS
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG953615-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	11/18/16 13:15	121,2540C	DW
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG953715-5										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	11/18/16 10:15	121,2320B	BR
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG953907-1										
Chloride	ND		mg/l	0.500	--	1	-	11/17/16 17:20	44,300.0	AU
Sulfate	ND		mg/l	1.00	--	1	-	11/17/16 17:20	44,300.0	AU

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637399
Report Date: 11/28/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG953479-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG953513-2								
Turbidity	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG953615-2								
Solids, Total Dissolved	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG953715-6								
Alkalinity, Total	101		-		90-110	-		10
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG953907-2								
Chloride	100		-		90-110	-		
Sulfate	102		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637399
Report Date: 11/28/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953715-8 QC Sample: L1637519-03 Client ID: MS Sample												
Alkalinity, Total	299	100	400	101		-	-		86-116	-		10
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953907-3 QC Sample: L1637219-01 Client ID: MS Sample												
Chloride	99.4	20	121	106		-	-		40-151	-		18
Sulfate	33.6	40	76.1	106		-	-		60-140	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637399
Report Date: 11/28/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953479-2 QC Sample: L1637439-01 Client ID: DUP Sample						
pH	6.4	6.4	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953486-2 QC Sample: L1637399-02 Client ID: PW-2						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953487-1 QC Sample: L1637439-01 Client ID: DUP Sample						
Color, Apparent	ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953513-3 QC Sample: L1637439-01 Client ID: DUP Sample						
Turbidity	0.40	0.42	NTU	5		13
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953615-3 QC Sample: L1637399-01 Client ID: PW-1						
Solids, Total Dissolved	290	270	mg/l	7		17
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953715-7 QC Sample: L1637519-03 Client ID: DUP Sample						
Alkalinity, Total	299	299	mg CaCO3/L	0		10
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953907-4 QC Sample: L1637219-01 Client ID: DUP Sample						
Chloride	99.4	99.4	mg/l	0		18
Sulfate	33.6	35.4	mg/l	5		20

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637399
Report Date: 11/28/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information	Custody Seal
Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1637399-01A	Bacteria Cup Na2S2O3 preserved	A	N/A	4.2	Y	Absent	T-COLI-C(1.25)
L1637399-01B	Bacteria Cup Na2S2O3 preserved	A	N/A	4.2	Y	Absent	T-COLI-C(1.25)
L1637399-01C	Plastic 250ml unpreserved w/No H	A	N/A	4.2	Y	Absent	ALK-T-2320(14)
L1637399-01D	Plastic 250ml HNO3 preserved	A	<2	4.2	Y	Absent	CA-UI(180),K-UI(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),MG-UI(180),AG-2008T(180),AL-UI(180),MN-UI(180)
L1637399-01E	Plastic 500ml unpreserved	A	7	4.2	Y	Absent	SO4-300(28),CL-300(28),TURB-180(2),PH-4500(.01),TDS-2540(7)
L1637399-01F	Amber 1000ml unpreserved	A	7	4.2	Y	Absent	COLOR-A-2120(2),ODOR-2150(1)
L1637399-02A	Bacteria Cup Na2S2O3 preserved	A	N/A	4.2	Y	Absent	T-COLI-C(1.25)
L1637399-02B	Bacteria Cup Na2S2O3 preserved	A	N/A	4.2	Y	Absent	T-COLI-C(1.25)
L1637399-02C	Plastic 250ml unpreserved w/No H	A	N/A	4.2	Y	Absent	ALK-T-2320(14)
L1637399-02D	Plastic 250ml HNO3 preserved	A	<2	4.2	Y	Absent	CA-UI(180),K-UI(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),MG-UI(180),AG-2008T(180),AL-UI(180),MN-UI(180)
L1637399-02E	Plastic 500ml unpreserved	A	7	4.2	Y	Absent	SO4-300(28),CL-300(28),TURB-180(2),PH-4500(.01),TDS-2540(7)
L1637399-02F	Amber 1000ml unpreserved	A	7	4.2	Y	Absent	COLOR-A-2120(2),ODOR-2150(1)

*Values in parentheses indicate holding time in days

Project Name:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637399
Project Number:	15005	**Report Date:**	11/28/16

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

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.

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.

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 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

Project Name:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637399
Project Number:	15005	**Report Date:**	11/28/16

Data Qualifiers

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:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637399
Project Number:	15005	**Report Date:**	11/28/16

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

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: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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, SM4500Cl-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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **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, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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.

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: 11/17/16

ALPHA Job #: L1607399

Client Information

Client: GeoHydroCycle, INC
Address: 151B California St.
Newton, MA 02458
Phone: 617.527.8074
Email: swsmith@geohydrocycle.com

Additional Project Information:

Project Information

Project Name: Regency at Boxborough
Project Location: Boxborough, MA
Project #: 15005
Project Manager: Steve Smith
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 #: 15005

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 MA DW STDS Criteria Reporting forms *MADEP DW

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

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	Total Coliform	pH, TDS, TURB, SO_4, Cl⁻	Color, Odor	Alkalinity, Hardness	Ca, Mn, K, Fe, Mg, Ag, Al, Zn, Cu	Sample Comments	Total # Bottles
37399-01	PW-1	11/16/16	22:40	DW		✓	✓	✓	✓	✓		6
	PW-2	11/16/16	22:55	DW		✓	✓	✓	✓	✓		6
	Container Type					B	P	A	P	P		
	Preservative					H				C		

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
C.V.P. Matthew	11/17/16 8:10	[signature]	11/17/16 8:10

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1637776
Client:	GeoHydroCycle, Inc. 151B California Street Newton, MA 02458
ATTN:	Stephen Smith
Phone:	(617) 527-8074
Project Name:	REGENCY AT BOXBOROUGH
Project Number:	15005
Report Date:	11/29/16

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1637776-01	PW-1	DW	BOXBOROUGH, MA	11/19/16 11:10	11/19/16
L1637776-02	PW-2	DW	BOXBOROUGH, MA	11/19/16 10:20	11/19/16
L1637776-03	TRIP BLANK	WATER	BOXBOROUGH, MA	11/14/16 00:00	11/19/16

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776
Project Number: 15005 **Report Date:** 11/29/16

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.

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: Cristin Walker

Title: Technical Director/Representative Date: 11/29/16

ORGANICS

VOLATILES

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID:	L1637776-01	Date Collected:	11/19/16 11:10
Client ID:	PW-1	Date Received:	11/19/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw		
Analytical Method:	16,524.2		
Analytical Date:	11/21/16 13:02		
Analyst:	GT		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	ND		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID: L1637776-01 Date Collected: 11/19/16 11:10

Client ID: PW-1 Date Received: 11/19/16

Sample Location: BOXBOROUGH, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total[1]	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	104		80-120
4-Bromofluorobenzene	99		80-120

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID:	L1637776-02	Date Collected:	11/19/16 10:20
Client ID:	PW-2	Date Received:	11/19/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw		
Analytical Method:	16,524.2		
Analytical Date:	11/21/16 13:37		
Analyst:	GT		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Dichlorodifluoromethane	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	0.50	--	1
Bromomethane	ND		ug/l	0.50	--	1
Chloroethane	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	0.50	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
Methylene chloride	ND		ug/l	0.50	--	1
Methyl tert butyl ether	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.50	--	1
1,1-Dichloroethane	ND		ug/l	0.50	--	1
2,2-Dichloropropane	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Chloroform	ND		ug/l	0.50	--	1
Bromochloromethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	0.50	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.50	--	1
1,3-Dichloropropane	ND		ug/l	0.50	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID: L1637776-02 Date Collected: 11/19/16 10:20

Client ID: PW-2 Date Received: 11/19/16

Sample Location: BOXBOROUGH, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Dibromochloromethane	ND		ug/l	0.50	--	1
1,2-Dibromoethane	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
p/m-Xylene	ND		ug/l	0.50	--	1
o-Xylene	ND		ug/l	0.50	--	1
Styrene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
Bromoform	ND		ug/l	0.50	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
1,2,3-Trichloropropane	ND		ug/l	0.50	--	1
Xylenes, Total[1]	ND		ug/l	0.50	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	0.50	--	1
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--	1
o-Chlorotoluene	ND		ug/l	0.50	--	1
p-Chlorotoluene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	0.50	--	1
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
1,3-Dichlorobenzene	ND		ug/l	0.50	--	1
1,4-Dichlorobenzene	ND		ug/l	0.50	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	0.50	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--	1
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	102		80-120
4-Bromofluorobenzene	93		80-120

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 16,524.2
Analytical Date: 11/21/16 10:43
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG953825-10					
Dichlorodifluoromethane	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	0.50	--
Bromomethane	ND		ug/l	0.50	--
Chloroethane	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	0.50	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Methylene chloride	ND		ug/l	0.50	--
Methyl tert butyl ether	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.50	--
1,1-Dichloroethane	ND		ug/l	0.50	--
2,2-Dichloropropane	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromochloromethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	0.50	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.50	--
1,3-Dichloropropane	ND		ug/l	0.50	--

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 16,524.2
Analytical Date: 11/21/16 10:43
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG953825-10					
Tetrachloroethene	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
1,2-Dibromoethane	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Ethylbenzene	ND		ug/l	0.50	--
p/m-Xylene	ND		ug/l	0.50	--
o-Xylene	ND		ug/l	0.50	--
Styrene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
1,2,3-Trichloropropane	ND		ug/l	0.50	--
Xylenes, Total[1]	ND		ug/l	0.50	--
n-Propylbenzene	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	0.50	--
1,3,5-Trimethylbenzene	ND		ug/l	0.50	--
o-Chlorotoluene	ND		ug/l	0.50	--
p-Chlorotoluene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	0.50	--
1,2,4-Trimethylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
1,3-Dichlorobenzene	ND		ug/l	0.50	--
1,4-Dichlorobenzene	ND		ug/l	0.50	--
n-Butylbenzene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	0.50	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.50	--
1,2,4-Trichlorobenzene	ND		ug/l	0.50	--

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 16,524.2
Analytical Date: 11/21/16 10:43
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG953825-10					
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		80-120
4-Bromofluorobenzene	95		80-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG953825-9								
Dichlorodifluoromethane	90		-		70-130	-		20
Chloromethane	90		-		70-130	-		20
Vinyl chloride	92		-		70-130	-		20
Bromomethane	85		-		70-130	-		20
Chloroethane	92		-		70-130	-		20
Trichlorofluoromethane	98		-		70-130	-		20
1,1-Dichloroethene	95		-		70-130	-		20
Methylene chloride	92		-		70-130	-		20
Methyl tert butyl ether	100		-		70-130	-		20
trans-1,2-Dichloroethene	95		-		70-130	-		20
1,1-Dichloroethane	95		-		70-130	-		20
2,2-Dichloropropane	98		-		70-130	-		20
cis-1,2-Dichloroethene	95		-		70-130	-		20
Chloroform	100		-		70-130	-		20
Bromochloromethane	95		-		70-130	-		20
1,1,1-Trichloroethane	100		-		70-130	-		20
1,1-Dichloropropene	95		-		70-130	-		20
Carbon tetrachloride	98		-		70-130	-		20
1,2-Dichloroethane	100		-		70-130	-		20
Benzene	98		-		70-130	-		20
Trichloroethene	92		-		70-130	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG953825-9								
1,2-Dichloropropane	95		-		70-130	-		20
Bromodichloromethane	98		-		70-130	-		20
Dibromomethane	98		-		70-130	-		20
cis-1,3-Dichloropropene	92		-		70-130	-		20
Toluene	95		-		70-130	-		20
trans-1,3-Dichloropropene	98		-		70-130	-		20
1,1,2-Trichloroethane	100		-		70-130	-		20
1,3-Dichloropropane	100		-		70-130	-		20
Tetrachloroethene	95		-		70-130	-		20
Dibromochloromethane	95		-		70-130	-		20
1,2-Dibromoethane	100		-		70-130	-		20
Chlorobenzene	100		-		70-130	-		20
1,1,1,2-Tetrachloroethane	102		-		70-130	-		20
Ethylbenzene	100		-		70-130	-		20
p/m-Xylene	101		-		70-130	-		20
o-Xylene	100		-		70-130	-		20
Styrene	100		-		70-130	-		20
Isopropylbenzene	102		-		70-130	-		20
Bromoform	102		-		70-130	-		20
1,1,2,2-Tetrachloroethane	108		-		70-130	-		20
1,2,3-Trichloropropane	112		-		70-130	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG953825-9								
n-Propylbenzene	100		-		70-130	-		20
Bromobenzene	105		-		70-130	-		20
1,3,5-Trimethylbenzene	102		-		70-130	-		20
o-Chlorotoluene	105		-		70-130	-		20
p-Chlorotoluene	98		-		70-130	-		20
tert-Butylbenzene	102		-		70-130	-		20
1,2,4-Trimethylbenzene	102		-		70-130	-		20
sec-Butylbenzene	105		-		70-130	-		20
p-Isopropyltoluene	102		-		70-130	-		20
1,3-Dichlorobenzene	100		-		70-130	-		20
1,4-Dichlorobenzene	100		-		70-130	-		20
n-Butylbenzene	98		-		70-130	-		20
1,2-Dichlorobenzene	102		-		70-130	-		20
1,2-Dibromo-3-chloropropane	122		-		70-130	-		20
1,2,4-Trichlorobenzene	98		-		70-130	-		20
Hexachlorobutadiene	100		-		70-130	-		20
Naphthalene	102		-		70-130	-		20
1,2,3-Trichlorobenzene	102		-		70-130	-		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH

Project Number: 15005

Lab Number: L1637776

Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG953825-9								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	101				80-120
4-Bromofluorobenzene	101				80-120

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-6 QC Sample: L1637370-02 Client ID: MS Sample												
Dichlorodifluoromethane	ND	4	4.8	120		-	-		70-130	-		20
Chloromethane	ND	4	4.3	108		-	-		70-130	-		20
Vinyl chloride	ND	4	4.4	110		-	-		70-130	-		20
Bromomethane	ND	4	3.4	85		-	-		70-130	-		20
Chloroethane	ND	4	4.4	110		-	-		70-130	-		20
Trichlorofluoromethane	ND	4	4.7	118		-	-		70-130	-		20
1,1-Dichloroethene	ND	4	4.6	115		-	-		70-130	-		20
Methylene chloride	ND	4	4.2	105		-	-		70-130	-		20
Methyl tert butyl ether	ND	4	4.5	113		-	-		70-130	-		20
trans-1,2-Dichloroethene	ND	4	4.4	110		-	-		70-130	-		20
1,1-Dichloroethane	ND	4	4.4	110		-	-		70-130	-		20
2,2-Dichloropropane	ND	4	3.9	98		-	-		70-130	-		20
cis-1,2-Dichloroethene	ND	4	4.5	113		-	-		70-130	-		20
Chloroform	ND	4	4.4	110		-	-		70-130	-		20
Bromochloromethane	ND	4	4.5	113		-	-		70-130	-		20
1,1,1-Trichloroethane	ND	4	4.5	113		-	-		70-130	-		20
1,1-Dichloropropene	ND	4	4.5	113		-	-		70-130	-		20
Carbon tetrachloride	ND	4	4.5	113		-	-		70-130	-		20
1,2-Dichloroethane	ND	4	4.5	113		-	-		70-130	-		20
Benzene	ND	4	4.4	110		-	-		70-130	-		20
Trichloroethene	ND	4	4.6	115		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-6 QC Sample: L1637370-02 Client ID: MS Sample												
1,2-Dichloropropane	ND	4	4.3	108		-	-		70-130	-		20
Bromodichloromethane	ND	4	4.2	105		-	-		70-130	-		20
Dibromomethane	ND	4	4.4	110		-	-		70-130	-		20
cis-1,3-Dichloropropene	ND	4	3.9	98		-	-		70-130	-		20
Toluene	ND	4	4.4	110		-	-		70-130	-		20
trans-1,3-Dichloropropene	ND	4	3.8	95		-	-		70-130	-		20
1,1,2-Trichloroethane	ND	4	4.5	113		-	-		70-130	-		20
1,3-Dichloropropane	ND	4	4.4	110		-	-		70-130	-		20
Tetrachloroethene	ND	4	4.4	110		-	-		70-130	-		20
Dibromochloromethane	ND	4	4.0	100		-	-		70-130	-		20
1,2-Dibromoethane	ND	4	4.3	108		-	-		70-130	-		20
Chlorobenzene	ND	4	4.6	115		-	-		70-130	-		20
1,1,1,2-Tetrachloroethane	ND	4	4.4	110		-	-		70-130	-		20
Ethylbenzene	ND	4	4.5	113		-	-		70-130	-		20
p/m-Xylene	ND	8	9.1	114		-	-		70-130	-		20
o-Xylene	ND	4	4.5	113		-	-		70-130	-		20
Styrene	ND	4	4.5	113		-	-		70-130	-		20
Isopropylbenzene	ND	4	4.6	115		-	-		70-130	-		20
Bromoform	ND	4	4.2	105		-	-		70-130	-		20
1,1,2,2-Tetrachloroethane	ND	4	4.9	123		-	-		70-130	-		20
1,2,3-Trichloropropane	ND	4	4.8	120		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-6 QC Sample: L1637370-02 Client ID: MS Sample												
n-Propylbenzene	ND	4	4.5	113		-	-		70-130	-		20
Bromobenzene	ND	4	4.5	113		-	-		70-130	-		20
1,3,5-Trimethylbenzene	ND	4	4.6	115		-	-		70-130	-		20
o-Chlorotoluene	ND	4	4.5	113		-	-		70-130	-		20
p-Chlorotoluene	ND	4	4.3	108		-	-		70-130	-		20
tert-Butylbenzene	ND	4	4.6	115		-	-		70-130	-		20
1,2,4-Trimethylbenzene	ND	4	4.6	115		-	-		70-130	-		20
sec-Butylbenzene	ND	4	4.7	118		-	-		70-130	-		20
p-Isopropyltoluene	ND	4	4.7	118		-	-		70-130	-		20
1,3-Dichlorobenzene	ND	4	4.4	110		-	-		70-130	-		20
1,4-Dichlorobenzene	ND	4	4.4	110		-	-		70-130	-		20
n-Butylbenzene	ND	4	4.5	113		-	-		70-130	-		20
1,2-Dichlorobenzene	ND	4	4.5	113		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	4	4.9	123		-	-		70-130	-		20
1,2,4-Trichlorobenzene	ND	4	4.4	110		-	-		70-130	-		20
Hexachlorobutadiene	ND	4	4.6	115		-	-		70-130	-		20
Naphthalene	ND	4	4.5	113		-	-		70-130	-		20
1,2,3-Trichlorobenzene	ND	4	4.4	110		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-6 QC Sample: L1637370-02 Client ID: MS Sample												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	104				80-120
4-Bromofluorobenzene	105				80-120

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-5 QC Sample: L1637370-01 Client ID: DUP Sample						
Dichlorodifluoromethane	ND	ND	ug/l	NC		20
Chloromethane	ND	ND	ug/l	NC		20
Vinyl chloride	ND	ND	ug/l	NC		20
Bromomethane	ND	ND	ug/l	NC		20
Chloroethane	ND	ND	ug/l	NC		20
Trichlorofluoromethane	ND	ND	ug/l	NC		20
1,1-Dichloroethene	ND	ND	ug/l	NC		20
Methylene chloride	ND	ND	ug/l	NC		20
Methyl tert butyl ether	ND	ND	ug/l	NC		20
trans-1,2-Dichloroethene	ND	ND	ug/l	NC		20
1,1-Dichloroethane	ND	ND	ug/l	NC		20
2,2-Dichloropropane	ND	ND	ug/l	NC		20
cis-1,2-Dichloroethene	ND	ND	ug/l	NC		20
Chloroform	ND	ND	ug/l	NC		20
Bromochloromethane	ND	ND	ug/l	NC		20
1,1,1-Trichloroethane	ND	ND	ug/l	NC		20
1,1-Dichloropropene	ND	ND	ug/l	NC		20
Carbon tetrachloride	ND	ND	ug/l	NC		20
1,2-Dichloroethane	ND	ND	ug/l	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-5 QC Sample: L1637370-01 Client ID: DUP Sample					
Benzene	ND	ND	ug/l	NC	20
Trichloroethene	ND	ND	ug/l	NC	20
1,2-Dichloropropane	ND	ND	ug/l	NC	20
Bromodichloromethane	ND	ND	ug/l	NC	20
Dibromomethane	ND	ND	ug/l	NC	20
cis-1,3-Dichloropropene	ND	ND	ug/l	NC	20
Toluene	ND	ND	ug/l	NC	20
trans-1,3-Dichloropropene	ND	ND	ug/l	NC	20
1,1,2-Trichloroethane	ND	ND	ug/l	NC	20
1,3-Dichloropropane	ND	ND	ug/l	NC	20
Tetrachloroethene	ND	ND	ug/l	NC	20
Dibromochloromethane	ND	ND	ug/l	NC	20
1,2-Dibromoethane	ND	ND	ug/l	NC	20
Chlorobenzene	ND	ND	ug/l	NC	20
1,1,1,2-Tetrachloroethane	ND	ND	ug/l	NC	20
Ethylbenzene	ND	ND	ug/l	NC	20
p/m-Xylene	ND	ND	ug/l	NC	20
o-Xylene	ND	ND	ug/l	NC	20
Styrene	ND	ND	ug/l	NC	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-5 QC Sample: L1637370-01 Client ID: DUP Sample					
Isopropylbenzene	ND	ND	ug/l	NC	20
Bromoform	ND	ND	ug/l	NC	20
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC	20
1,2,3-Trichloropropane	ND	ND	ug/l	NC	20
n-Propylbenzene	ND	ND	ug/l	NC	20
Xylene (Total)[1]	ND	ND	ug/l	NC	20
Bromobenzene	ND	ND	ug/l	NC	20
1,3,5-Trimethylbenzene	ND	ND	ug/l	NC	20
Trihalomethanes, Total	ND	ND	ug/l	NC	20
o-Chlorotoluene	ND	ND	ug/l	NC	20
p-Chlorotoluene	ND	ND	ug/l	NC	20
tert-Butylbenzene	ND	ND	ug/l	NC	20
1,2,4-Trimethylbenzene	ND	ND	ug/l	NC	20
sec-Butylbenzene	ND	ND	ug/l	NC	20
p-Isopropyltoluene	ND	ND	ug/l	NC	20
1,3-Dichlorobenzene	ND	ND	ug/l	NC	20
1,4-Dichlorobenzene	ND	ND	ug/l	NC	20
n-Butylbenzene	ND	ND	ug/l	NC	20
1,2-Dichlorobenzene	ND	ND	ug/l	NC	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG953825-5 QC Sample: L1637370-01 Client ID: DUP Sample					
1,2-Dibromo-3-chloropropane	ND	ND	ug/l	NC	20
1,2,4-Trichlorobenzene	ND	ND	ug/l	NC	20
Hexachlorobutadiene	ND	ND	ug/l	NC	20
Naphthalene	ND	ND	ug/l	NC	20
1,2,3-Trichlorobenzene	ND	ND	ug/l	NC	20

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		108		80-120
4-Bromofluorobenzene	99		100		80-120

SEMIVOLATILES

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID:	L1637776-01	Date Collected:	11/19/16 11:10
Client ID:	PW-1	Date Received:	11/19/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw	Extraction Method:	EPA 522
Analytical Method:	120,522	Extraction Date:	11/22/16 08:00
Analytical Date:	11/24/16 07:49		
Analyst:	WR		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.156	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	122		70-130

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID:	L1637776-02	Date Collected:	11/19/16 10:20
Client ID:	PW-2	Date Received:	11/19/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw	Extraction Method:	EPA 522
Analytical Method:	120,522	Extraction Date:	11/22/16 08:00
Analytical Date:	11/24/16 08:19		
Analyst:	WR		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.156	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	120		70-130

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 11/23/16 22:30
Analyst: WR

Extraction Method: EPA 522
Extraction Date: 11/22/16 08:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 522 - Mansfield Lab for sample(s): 01-02 Batch: WG954761-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH

Project Number: 15005

Lab Number: L1637776

Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 522 - Mansfield Lab Associated sample(s): 01-02 Batch: WG954761-2 WG954761-3								
1,4-Dioxane	81		87		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	122		106		70-130

METALS

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

SAMPLE RESULTS

Lab ID: L1637776-01 Date Collected: 11/19/16 11:10

Client ID: PW-1 Date Received: 11/19/16

Sample Location: BOXBOROUGH, MA Field Prep: Not Specified

Matrix: Dw

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	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Antimony, Total	ND		mg/l	0.0020	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Arsenic, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Barium, Total	0.0056		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Beryllium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Cadmium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Calcium, Total	42.0		mg/l	0.100	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Chromium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Copper, Total	ND		mg/l	0.010	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Magnesium, Total	12		mg/l	0.10	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Manganese, Total	0.109		mg/l	0.010	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Mercury, Total	ND		mg/l	0.00020	--	1	11/25/16 12:10	11/26/16 18:41	EPA 245.1	3,245.1	BV
Nickel, Total	0.0026		mg/l	0.0020	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Potassium, Total	ND		mg/l	2.50	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Selenium, Total	ND		mg/l	0.0050	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Silver, Total	ND		mg/l	0.007	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Sodium, Total	12.2		mg/l	2.00	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Thallium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:57	EPA 3005A	3,200.8	TT
Zinc, Total	ND		mg/l	0.050	--	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	156		mg/l	0.660	NA	1	11/21/16 11:40	11/22/16 13:34	EPA 3005A	19,200.7	PS

Project Name:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637776
Project Number:	15005	**Report Date:**	11/29/16

SAMPLE RESULTS

Lab ID:	L1637776-02	Date Collected:	11/19/16 10:20
Client ID:	PW-2	Date Received:	11/19/16
Sample Location:	BOXBOROUGH, MA	Field Prep:	Not Specified
Matrix:	Dw		

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	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Antimony, Total	ND		mg/l	0.0020	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Arsenic, Total	ND		mg/l	0.00100	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Barium, Total	0.0146		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Beryllium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Cadmium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Calcium, Total	54.1		mg/l	0.100	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Chromium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Copper, Total	ND		mg/l	0.010	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Iron, Total	0.339		mg/l	0.050	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Magnesium, Total	15		mg/l	0.10	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Manganese, Total	1.40		mg/l	0.010	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Mercury, Total	ND		mg/l	0.0002	--	1	11/25/16 12:10	11/26/16 18:43	EPA 245.1	3,245.1	BV
Nickel, Total	ND		mg/l	0.0020	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Potassium, Total	3.30		mg/l	2.50	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Selenium, Total	ND		mg/l	0.0050	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Silver, Total	ND		mg/l	0.007	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Sodium, Total	16.5		mg/l	2.00	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Thallium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 18:08	EPA 3005A	3,200.8	TT
Zinc, Total	0.734		mg/l	0.050	--	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	198		mg/l	0.660	NA	1	11/21/16 11:40	11/22/16 14:34	EPA 3005A	19,200.7	PS

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

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): 01-02 Batch: WG954370-1										
Aluminum, Total	ND		mg/l	0.100	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Calcium, Total	ND		mg/l	0.100	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Copper, Total	ND		mg/l	0.010	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Magnesium, Total	ND		mg/l	0.10	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Potassium, Total	ND		mg/l	2.50	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Silver, Total	ND		mg/l	0.007	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Sodium, Total	ND		mg/l	2.00	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS
Zinc, Total	ND		mg/l	0.050	--	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS

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): 01-02 Batch: WG954370-1										
Hardness	ND		mg/l	0.660	NA	1	11/21/16 11:40	11/22/16 13:16	19,200.7	PS

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): 01-02 Batch: WG954372-1										
Antimony, Total	ND		mg/l	0.002	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Arsenic, Total	ND		mg/l	0.001	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Barium, Total	ND		mg/l	0.001	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Beryllium, Total	ND		mg/l	0.001	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Cadmium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Chromium, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Lead, Total	ND		mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

Method Blank Analysis
Batch Quality Control

Nickel, Total	ND	mg/l	0.0020	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Selenium, Total	ND	mg/l	0.0050	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT
Thallium, Total	ND	mg/l	0.0010	--	1	11/21/16 11:40	11/21/16 16:52	3,200.8	TT

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): 01-02 Batch: WG955575-1										
Mercury, Total	ND		mg/l	0.00020	--	1	11/25/16 12:10	11/26/16 18:18	3,245.1	BV

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG954370-2								
Aluminum, Total	96		-		85-115	-		
Calcium, Total	92		-		85-115	-		
Copper, Total	104		-		85-115	-		
Iron, Total	96		-		85-115	-		
Magnesium, Total	95		-		85-115	-		
Manganese, Total	90		-		85-115	-		
Potassium, Total	96		-		85-115	-		
Silver, Total	99		-		85-115	-		
Sodium, Total	100		-		85-115	-		
Zinc, Total	95		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG954370-2								
Hardness	94		-		85-115	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG954372-2					
Antimony, Total	92	-	85-115	-	
Arsenic, Total	108	-	85-115	-	
Barium, Total	98	-	85-115	-	
Beryllium, Total	98	-	85-115	-	
Cadmium, Total	104	-	85-115	-	
Chromium, Total	99	-	85-115	-	
Lead, Total	103	-	85-115	-	
Nickel, Total	100	-	85-115	-	
Selenium, Total	107	-	85-115	-	
Thallium, Total	96	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG955575-2					
Mercury, Total	109	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG954370-3 QC Sample: L1637776-01 Client ID: PW-1												
Aluminum, Total	ND	2	1.89	94		-	-		75-125	-		20
Calcium, Total	42.0	10	51.5	95		-	-		75-125	-		20
Copper, Total	ND	0.25	0.269	108		-	-		75-125	-		20
Iron, Total	ND	1	0.882	88		-	-		75-125	-		20
Magnesium, Total	12	10	22	100		-	-		75-125	-		20
Manganese, Total	0.109	0.5	0.552	89		-	-		75-125	-		20
Potassium, Total	ND	10	12.0	120		-	-		75-125	-		20
Silver, Total	ND	0.05	0.049	99		-	-		75-125	-		20
Sodium, Total	12.2	10	22.4	102		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.470	94		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG954370-3 QC Sample: L1637776-01 Client ID: PW-1												
Hardness	156	66.2	218	94		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG954372-3 QC Sample: L1637776-01 Client ID: PW-1									
Antimony, Total	ND	0.5	0.4393	88	-	-	70-130	-	20
Arsenic, Total	ND	0.12	0.1212	101	-	-	70-130	-	20
Barium, Total	0.0056	2	1.844	92	-	-	70-130	-	20
Beryllium, Total	ND	0.05	0.0471	94	-	-	70-130	-	20
Cadmium, Total	ND	0.051	0.0494	97	-	-	70-130	-	20
Chromium, Total	ND	0.2	0.1879	94	-	-	70-130	-	20
Lead, Total	ND	0.51	0.4878	96	-	-	70-130	-	20
Nickel, Total	0.0026	0.5	0.4557	91	-	-	70-130	-	20
Selenium, Total	ND	0.12	0.1087	90	-	-	70-130	-	20
Thallium, Total	ND	0.12	0.1084	90	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG955575-3 QC Sample: L1637439-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00491	98	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG954370-4 QC Sample: L1637776-01 Client ID: PW-1						
Aluminum, Total	ND	ND	mg/l	NC		20
Calcium, Total	42.0	42.5	mg/l	1		20
Copper, Total	ND	ND	mg/l	NC		20
Iron, Total	ND	ND	mg/l	NC		20
Magnesium, Total	12	12	mg/l	0		20
Manganese, Total	0.109	0.110	mg/l	1		20
Potassium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Sodium, Total	12.2	12.4	mg/l	2		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG954370-4 QC Sample: L1637776-01 Client ID: PW-1						
Hardness	156	158	mg/l	1		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG954372-4 QC Sample: L1637776-01 Client ID: PW-1					
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	ND	ND	mg/l	NC	20
Barium, Total	0.0056	0.0055	mg/l	0	20
Beryllium, Total	ND	ND	mg/l	NC	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	ND	ND	mg/l	NC	20
Lead, Total	ND	ND	mg/l	NC	20
Nickel, Total	0.0026	0.0030	mg/l	13	20
Selenium, Total	ND	ND	mg/l	NC	20
Thallium, Total	ND	ND	mg/l	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG955575-4 QC Sample: L1637439-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

SAMPLE RESULTS

Lab ID: L1637776-01
Client ID: PW-1
Sample Location: BOXBOROUGH, MA
Matrix: Dw

Date Collected: 11/19/16 11:10
Date Received: 11/19/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Perchlorate by IC-MS-MS - Westborough Lab										
Perchlorate	ND		ug/l	0.050	--	1	-	11/24/16 12:14	71,332.0	BT
General Chemistry - Westborough Lab										
Turbidity	1.5		NTU	0.20	--	1	-	11/19/16 17:08	44,180.1	JC
Odor @ 60 C	NO ODOR		TON	1	--	1	-	11/19/16 18:05	30,2150B	MR
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	11/19/16 16:46	121,2120B	JC
Alkalinity, Total	79.0		mg CaCO3/L	2.00	NA	1	-	11/21/16 10:34	121,2320B	BR
Solids, Total Dissolved	260		mg/l	10	--	1	-	11/23/16 14:05	121,2540C	SD
Cyanide, Total	ND		mg/l	0.005	--	1	11/22/16 15:25	11/23/16 12:59	121,4500CN-CE	JO
Fluoride	ND		mg/l	0.20	--	1	-	11/22/16 21:45	121,4500F-C	SB
pH (H)	6.8		SU	-	NA	1	-	11/19/16 16:46	121,4500H+-B	JC
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	11/19/16 15:06	44,353.2	MR
Nitrogen, Nitrate	0.15		mg/l	0.10	--	1	-	11/19/16 15:06	44,353.2	MR
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	11/19/16 15:10	121,9223B	RP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	11/19/16 15:10	121,9223B	RP
Anions by Ion Chromatography - Westborough Lab										
Chloride	87.1		mg/l	2.50	--	5	-	11/22/16 21:28	44,300.0	AU
Sulfate	9.59		mg/l	5.00	--	5	-	11/22/16 21:28	44,300.0	AU

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

SAMPLE RESULTS

Lab ID: L1637776-02
Client ID: PW-2
Sample Location: BOXBOROUGH, MA
Matrix: Dw

Date Collected: 11/19/16 10:20
Date Received: 11/19/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Perchlorate by IC-MS-MS - Westborough Lab										
Perchlorate	ND		ug/l	0.050	--	1	-	11/24/16 12:42	71,332.0	BT
General Chemistry - Westborough Lab										
Turbidity	1.2		NTU	0.20	--	1	-	11/19/16 17:08	44,180.1	JC
Odor @ 60 C	NO ODOR		TON	1	--	1	-	11/19/16 18:05	30,2150B	MR
Color, Apparent	8.0		A.P.C.U.	5.0	--	1	-	11/19/16 16:46	121,2120B	JC
Alkalinity, Total	94.8		mg CaCO3/L	2.00	NA	1	-	11/21/16 10:34	121,2320B	BR
Solids, Total Dissolved	370		mg/l	10	--	1	-	11/23/16 14:05	121,2540C	SD
Cyanide, Total	ND		mg/l	0.005	--	1	11/22/16 15:25	11/23/16 13:02	121,4500CN-CE	JO
Fluoride	ND		mg/l	0.20	--	1	-	11/22/16 21:45	121,4500F-C	SB
pH (H)	6.6		SU	-	NA	1	-	11/19/16 16:46	121,4500H+-B	JC
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	11/19/16 15:07	44,353.2	MR
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	11/19/16 15:07	44,353.2	MR
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	11/19/16 15:10	121,9223B	RP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	11/19/16 15:10	121,9223B	RP
Anions by Ion Chromatography - Westborough Lab										
Chloride	108.		mg/l	2.50	--	5	-	11/22/16 21:40	44,300.0	AU
Sulfate	12.5		mg/l	5.00	--	5	-	11/22/16 21:40	44,300.0	AU

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

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): 01-02 Batch: WG954009-1										
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	11/19/16 09:30	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG954010-1										
Nitrogen, Nitrite	ND		mg/l	0.050	--	1	-	11/19/16 09:33	44,353.2	MR
Bacteria in Water - Westborough Lab for sample(s): 01-02 Batch: WG954098-1										
Coliform, Total	Negative		col/100ml	-	NA	1	-	11/19/16 15:10	121,9223B	RP
Escherichia Coli	Negative		col/100ml	-	NA	1	-	11/19/16 15:10	121,9223B	RP
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG954109-1										
Odor	NO ODOR		TON	1	--	1	-	11/19/16 18:05	30,2150B	MR
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG954115-1										
Turbidity	ND		NTU	0.20	--	1	-	11/19/16 17:08	44,180.1	JC
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG954380-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	11/21/16 10:34	121,2320B	BR
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG954881-1										
Cyanide, Total	ND		mg/l	0.005	--	1	11/22/16 15:25	11/23/16 12:54	121,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG954974-1										
Fluoride	ND		mg/l	0.20	--	1	-	11/22/16 21:45	121,4500F-C	SB
Perchlorate by IC-MS-MS - Westborough Lab for sample(s): 01-02 Batch: WG955035-1										
Perchlorate	ND		ug/l	0.050	--	1	-	11/24/16 08:29	71,332.0	BT
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG955068-1										
Sulfate	ND		mg/l	1.00	--	1	-	11/22/16 18:28	44,300.0	AU
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG955068-1										
Chloride	ND		mg/l	0.500	--	1	-	11/22/16 18:28	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG955245-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	11/23/16 14:05	121,2540C	SD

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954009-2								
Nitrogen, Nitrate	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954010-2								
Nitrogen, Nitrite	104		-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954110-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954115-2								
Turbidity	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954380-2								
Alkalinity, Total	105		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954881-2								
Cyanide, Total	103		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG954974-2								
Fluoride	101		-		78-115	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01-02 Batch: WG955035-2					
Perchlorate	100	-	80-120	-	20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG955068-2					
Chloride	100	-	90-110	-	
Sulfate	105	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG955245-2					
Solids, Total Dissolved	96	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005
Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954009-4 QC Sample: L1637621-01 Client ID: MS Sample												
Nitrogen, Nitrate	20	4	24	100		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954010-4 QC Sample: L1637621-01 Client ID: MS Sample												
Nitrogen, Nitrite	ND	4	4.1	102		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954380-4 QC Sample: L1637664-02 Client ID: MS Sample												
Alkalinity, Total	8.10	100	111	103		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954881-4 QC Sample: L1637776-02 Client ID: PW-2												
Cyanide, Total	ND	0.2	0.200	100		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954974-4 QC Sample: L1637776-01 Client ID: PW-1												
Fluoride	ND	1	1.2	118		-	-		69-124	-		13
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG955035-3 QC Sample: L1637463-01 Client ID: MS Sample												
Perchlorate	ND	1	1.00	100		-	-		80-120	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG955068-3 QC Sample: L1638024-01 Client ID: MS Sample												
Chloride	91.7	100	204	112		-	-		40-151	-		18
Sulfate	17.3	8	24.6	99		-	-		60-140	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954009-3 QC Sample: L1637621-01 Client ID: DUP Sample						
Nitrogen, Nitrate	20	20	mg/l	0		6
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954010-3 QC Sample: L1637621-01 Client ID: DUP Sample						
Nitrogen, Nitrite	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954109-2 QC Sample: L1637776-02 Client ID: PW-2						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954110-2 QC Sample: L1637776-02 Client ID: PW-2						
pH (H)	6.6	6.6	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954111-1 QC Sample: L1637776-02 Client ID: PW-2						
Color, Apparent	8.0	8.0	A.P.C.U.	0		
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954115-3 QC Sample: L1637776-02 Client ID: PW-2						
Turbidity	1.2	1.2	NTU	0		13
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954380-3 QC Sample: L1637664-02 Client ID: DUP Sample						
Alkalinity, Total	8.10	8.00	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954881-3 QC Sample: L1637776-01 Client ID: PW-1						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG954974-3 QC Sample: L1637776-01 Client ID: PW-1						
Fluoride	ND	ND	mg/l	NC		13

Lab Duplicate Analysis
Batch Quality Control

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Perchlorate by IC-MS-MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG955035-4 QC Sample: L1637463-01 Client ID: DUP Sample					
Perchlorate	ND	ND	ug/l	NC	20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG955068-4 QC Sample: L1638024-01 Client ID: DUP Sample					
Sulfate	17.3	17.3	mg/l	4	20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG955068-4 QC Sample: L1638024-01 Client ID: DUP Sample					
Chloride	91.7	91.8	mg/l	0	18
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG955245-3 QC Sample: L1637663-01 Client ID: DUP Sample					
Solids, Total Dissolved	9100	9100	mg/l	0	17

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1637776-01A	Vial Ascorbic Acid/HCl preserved	A	N/A	4.3	Y	Absent	524.2(14)
L1637776-01B	Vial Ascorbic Acid/HCl preserved	A	N/A	4.3	Y	Absent	524.2(14)
L1637776-01C	Bacteria Cup unpreserved	A	N/A	4.3	Y	Absent	PERC-332(28)
L1637776-01D	Bacteria Cup Na2S2O3 preserved	A	N/A	4.3	Y	Absent	T-COLI-C(1.25)
L1637776-01E	Bacteria Cup Na2S2O3 preserved	A	N/A	4.3	Y	Absent	T-COLI-C(1.25)
L1637776-01F	Plastic 250ml unpreserved w/No H	A	N/A	4.3	Y	Absent	ALK-T-2320(14)
L1637776-01G	Plastic 250ml NaOH preserved	A	>12	4.3	Y	Absent	TCN-4500(14)
L1637776-01H	Plastic 250ml HNO3 preserved	A	<2	4.3	Y	Absent	CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L1637776-01I	Plastic 250ml HNO3 preserved	A	<2	4.3	Y	Absent	CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L1637776-01J	Plastic 500ml unpreserved	A	8	4.3	Y	Absent	F-4500(28),SO4-300(28),CL-300(28),NO2-353(2),TURB-180(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L1637776-01K	Plastic 500ml unpreserved	A	8	4.3	Y	Absent	F-4500(28),SO4-300(28),CL-300(28),NO2-353(2),TURB-180(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L1637776-01L	Amber 500ml Na Sulfite/NaHSO3 pr	A	3	4.3	Y	Absent	A2-14DIOXANE-522(28)
L1637776-01L1	Amber 500ml Na Sulfite/NaHSO3 pr	A	3	4.3	Y	Absent	A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1637776-01M	Amber 500ml Na Sulfite/NaHSO3 pr	A	3	4.3	Y	Absent	A2-14DIOXANE-522(28)
L1637776-01M1	Amber 500ml Na Sulfite/NaHSO3 pr	A	3	4.3	Y	Absent	A2-14DIOXANE-522(28)
L1637776-01N	Amber 1000ml unpreserved	A	8	4.3	Y	Absent	COLOR-A-2120(2),ODOR-2150(1)
L1637776-01O	Plastic 950ml HNO3 preserved	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01O1	Plastic 950ml HNO3 preserved	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01O2	Plastic 950ml HNO3 preserved	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01O3	Plastic 950ml HNO3 preserved	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01O4	Plastic 950ml HNO3 preserved	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01P	Amber 1000ml Na Sulfite/HCL pres	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01P1	Amber 1000ml Na Sulfite/HCL pres	A	<2	4.3	Y	Absent	HOLD-SUB(0)
L1637776-01Q	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01Q1	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01Q2	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01R	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01S	Vial unpreserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01S1	Vial unpreserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01T	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01T1	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-01T2	Vial Na2S2O3 preserved	A	N/A	4.3	Y	Absent	HOLD-SUB()
L1637776-02A	Vial Ascorbic Acid/HCl preserved	B	N/A	3.9	Y	Absent	524.2(14)
L1637776-02B	Vial Ascorbic Acid/HCl preserved	B	N/A	3.9	Y	Absent	524.2(14)
L1637776-02C	Bacteria Cup unpreserved	B	N/A	3.9	Y	Absent	PERC-332(28)
L1637776-02D	Bacteria Cup Na2S2O3 preserved	B	N/A	3.9	Y	Absent	T-COLI-C(1.25)
L1637776-02E	Bacteria Cup Na2S2O3 preserved	B	N/A	3.9	Y	Absent	T-COLI-C(1.25)
L1637776-02F	Plastic 250ml unpreserved w/No H	B	N/A	3.9	Y	Absent	ALK-T-2320(14)
L1637776-02G	Plastic 250ml NaOH preserved	B	>12	3.9	Y	Absent	TCN-4500(14)
L1637776-02H	Plastic 250ml HNO3 preserved	B	<2	3.9	Y	Absent	CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)

*Values in parentheses indicate holding time in days

Project Name: REGENCY AT BOXBOROUGH
Project Number: 15005

Lab Number: L1637776
Report Date: 11/29/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1637776-02I	Plastic 250ml HNO3 preserved	B	<2	3.9	Y	Absent	CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),PB-2008T(180),SB-2008T(180),TL-2008T(180)
L1637776-02J	Plastic 500ml unpreserved	B	8	3.9	Y	Absent	F-4500(28),SO4-300(28),CL-300(28),NO2-353(2),TURB-180(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L1637776-02K	Plastic 500ml unpreserved	B	8	3.9	Y	Absent	F-4500(28),SO4-300(28),CL-300(28),NO2-353(2),TURB-180(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L1637776-02L	Amber 500ml Na Sulfite/NaHSO3 pr	B	3	3.9	Y	Absent	A2-14DIOXANE-522(28)
L1637776-02M	Amber 500ml Na Sulfite/NaHSO3 pr	B	3	3.9	Y	Absent	A2-14DIOXANE-522(28)
L1637776-02N	Amber 1000ml unpreserved	B	8	3.9	Y	Absent	COLOR-A-2120(2),ODOR-2150(1)
L1637776-02O	Plastic 950ml HNO3 preserved	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02O1	Plastic 950ml HNO3 preserved	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02O2	Plastic 950ml HNO3 preserved	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02O3	Plastic 950ml HNO3 preserved	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02O4	Plastic 950ml HNO3 preserved	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02P	Amber 1000ml Na Sulfite/HCL pres	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02P1	Amber 1000ml Na Sulfite/HCL pres	B	<2	3.9	Y	Absent	HOLD-SUB(0)
L1637776-02Q	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02Q1	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02Q2	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02R	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02S	Vial unpreserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02S1	Vial unpreserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02T	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02T1	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-02T2	Vial Na2S2O3 preserved	B	N/A	3.9	Y	Absent	HOLD-SUB()
L1637776-03A	Vial Ascorbic Acid/HCl preserved	A	N/A	4.3	Y	Absent	HOLD-524.2(14)
L1637776-03B	Vial Ascorbic Acid/HCl preserved	A	N/A	4.3	Y	Absent	HOLD-524.2(14)

*Values in parentheses indicate holding time in days

Project Name:	REGENCY AT BOXBOROUGH	**Lab Number:**	L1637776
Project Number:	15005	**Report Date:**	11/29/16

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

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.

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.

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 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

Project Name: REGENCY AT BOXBOROUGH **Lab Number:** L1637776

Project Number: 15005 **Report Date:** 11/29/16

Data Qualifiers

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: REGENCY AT BOXBOROUGH **Lab Number:** L1637776
Project Number: 15005 **Report Date:** 11/29/16

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

16 Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

71 Determination of Perchlorate in Drinking Water by Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry. EPA Method 332.0, EPA/600/R-05/049. Revision 1.0, March 2005.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

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: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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, SM4500Cl-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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **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, SM9222D-MF**.

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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.

CHAIN OF CUSTODY

PAGE 1 OF 2

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: 11/19/16

ALPHA Job #: L1637776

Client Information

Client: GeoHydroCycle
Address: 157B California St.
Newton, MA 02458
Phone: 617.527.8074
Email: swsmith@geohydrocycle.com

Project Information

Project Name: Regency at Boxborough
Project Location: Boxborough, MA
Project #: 15005
Project Manager: Steve Smith
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 #: 15005

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 MASS DW STDS Criteria * MADEP DW REPORTING FORMS

Additional Project Information:

* SEE ATTACHED 'APPENDIX A' for list of metals & other details

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☑ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ~~☐ PCB ☐ PEST~~ 1,4 DIOXANE; TPH: ☐ Quant Only ☐ Fingerprint; TOTAL COLIFORM; pH, TDS, TURB, Cl⁻; SO4 NO3 F⁻ NO2; COLOR ODOR; ALKALINITY HARDNESS; CN⁻

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	METALS	METALS	EPH	VPH	PCB/PEST	TPH	1,4 Dioxane	Total Coliform	pH, TDS, Turb, Cl⁻	SO4 NO3 F⁻ NO2	Color Odor	Alkalinity Hardness	CN⁻	Sample Comments	Total # Bottles
37776-01	PW-1	11/19/16	11:10	DW		✓		*				✓		✓	✓	✓	✓	✓	✓			13
-02	PW-2	11/19/16	10:20			✓		✓				✓		✓	✓	✓	✓	✓	✓			15

	VOC	SVOC	METALS	METALS	EPH	VPH	PCB/PEST	TPH	1,4 Dioxane	Total Coliform	pH, TDS, Turb, Cl⁻	SO4 NO3 F⁻ NO2	Color Odor	Alkalinity Hardness	CN⁻
Container Type	AV		P				A		B	P	P	A	P	P	
Preservative	1B		C				HO		H	A	A	A	A	E	

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
C.V.P. Matthews	11/19/16 / 0100	[illegible]	11/19/16 0100

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 2 OF 2

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: 11/19/16

ALPHA Job #: L1637776

Project Information

Project Name: REGENCY at BOXBOROUGH
Project Location:
Project #: 15005
Project Manager: STEVE SMITH
ALPHA Quote #:

Client Information

Client: GEOHYDROCYCLE
Address:
Phone:
Email: swsmith@geohydrocycle.com

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL *

Billing Information

☑ Same as Client info PO #: 15005

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 Inorga)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targe
☐ Yes ☐ No NPDES RGP
☑ Other State / ~~Fed~~ Program MASS DW STDs Criteria * MADEP DW REPORTING FORMS

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

SEE PAGE 1 Attachment (Appx. A)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PERCHLORATE	ALPHA, RA 228, RA 226	RADON	504.1, 505, 515.3	531.1	525.2	Sample Comments	TOTAL # BOTTLES
37726-01	PW-1	11/19/16	11:10	DW										✓	✓	✓	✓	✓	✓		17
-02	PW-2		10:20											✓	✓	✓	✓	✓	✓		17

SAMPLE INFO
Sterile
Filtration
☑ Field
☐ Lab to do
(PERCHLORATE)
Preservation
☐ Lab to do

	PERCHLORATE	ALPHA, RA 228, RA 226	RADON	504.1, 505, 515.3	531.1	525.2
Container Type	B	P	AV	V	V	A
Preservative	A	C	A	H	HO	HB

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
C.V.P. Matthews	11/19/16 0100	[illegible]	11/19/16 0100

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

DW-

Appendix A
Water Quality Testing Requirements for Source Approval

All testing must be done in accordance with 310 CMR 22.00 (Massachusetts Drinking Water Regulations). Among these requirements are the use of a laboratory certified in the specific analyte, using approved methodology and reporting on MA Department forms (pursuant to 310 CMR 22.11A) as well as meeting all applicable method detection limits.

1. ***Coliform Bacteria****

2. ***Inorganic Compounds***

Arsenic	Mercury
Antimony	Nickel
Barium	Nitrate (N)
Beryllium	Nitrite
Cadmium	Perchlorate
Chromium	Selenium
Cyanide	Sodium
Fluoride	Sulfate
Lead	Thallium

3. ***Synthetic Organic Compounds (SOCs)***

All regulated and unregulated SOCs per 310 CMR 22.07A(1) and 22.07C(7) excluding:

- Diquat
- Endothall
- Glyphosate
- 2,3,7,8 -TCDD (Dioxin)

Surface water sources do not have to test for EDB and DBCP.

4. ***Volatile Organic Compounds (VOCs)***

All VOCs as per 22.07B(1), 22.07C(5)

* If the result of any analysis is positive for total coliform, then the sample must be analyzed for enterococci (and/or coliphage at MassDEP's discretion).

** If required by MassDEP

*** Testing for these parameter is only required if the gross beta particle activity is equal to or greater than 50 pCi/L.

5. ***Radionuclides***

Gross alpha activity
Radium-226 & 228
Beta particle activity**
Photon activity***
Tritium***
Strontium-90***
Radon
Uranium****

6. ***Secondary Contaminants***

- TDS
- Color
- Odor
- pH
- Alkalinity-Total ($CaCo_3$)
- Hardness ($CaCO_3$)
- Calcium (Ca)
- Manganese (Mn)
- Potassium (K)
- Iron (Fe)
- Magnesium (Mg)
- Sulfate (SO_4)
- Chloride (Cl)
- Silver (Ag)
- Turbidity
- Aluminum (Al)
- Zinc (Zn)
- Copper (Cu)

7. ***Other***

Carbon dioxide
Nitrogen (Ammonia)
Specific conductance
Temperature

**** Testing for this parameter is only required if the gross alpha activity is greater than 15 pCi/L.

Serial_No:11291611:38

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

DATE	December 22, 2016
HRI PROJECT	009-458
HRI SERIES NO.	K276/16
DATE REC'D.	11/23/2016
CUST. P.O.#	L1637824

Alpha Analytical, Inc.
Dave Sanford
Eight Walkup Drive
Westborough, MA 01581-1019

REPORT OF ANALYSIS

SAMPLE NO. K276/16-1

SAMPLE IDENTIFICATION: L1637824-01 - PW-1 - sampled on 11/19/2016 @ 1110 by CM

PARAMETER	RESULT	DETECTION LIMIT	METHOD	ANALYSIS DATE	ANALYST
Gross Alpha (+-Precision*), pCi/l (T)	5.8(+-2.5)	1.1	SM 7110 B	12/20/2016 @ 0755	LD
Gross Beta (+-Precision*), pCi/l (T)	1.0(+-2.3)	2.1	SM 7110 B	12/20/2016 @ 0755	LD
Radium-226 (+-Precision*), pCi/l (T)	0.0(+-0.1)	0.1	SM 7500-Ra B	12/9/2016 @ 1230	LD
Radium-228 (+-Precision*), pCi/l (T)	0.0(+-0.6)	0.7	EPA Ra-05	12/13/2016 @ 0950	JR
Radon (+-Precision*), pCi/l (T)	3800(+-93)	25.0	SM 7500-Rn B	11/23/2016 @ 1425	BRS

Certification ID's: CO/EPA CO00008; CT PH-0152; KS E-10265; NJ CO008; NYSELAP (NELAC Certified) 11417; RI LAO00284; WI 998376610, TX T104704256-15-6

*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma.

By: Jessica Axen
Jessica Axen
Analytical Laboratories Manager

Report may only be copied in its entirety.
Results reported herein relate only to discrete samples submitted by the client. Hazen Research, Inc. does not warrant that the results are representative of anything other than the samples that were received in the laboratory.

CODES: (T) = Total (D) = Dissolved (S) = Suspended (R) = Total Recoverable
(PD) = Potentially Dissolved < = Less Than

Sample received past hold time. Radon results may be biased low.

An Employee-Owned Company

Hazen Research, Inc.
4601 Indiana Street
Golden, CO 80403 USA
Tel: (303) 279-4501
Fax: (303) 278-1528

DATE	December 22, 2016
HRI PROJECT	009-458
HRI SERIES NO.	K276/16
DATE REC'D.	11/23/2016
CUST. P.O.#	L1637824

Alpha Analytical, Inc.
Dave Sanford
Eight Walkup Drive
Westborough, MA 01581-1019

REPORT OF ANALYSIS

SAMPLE NO. K276/16-2

SAMPLE IDENTIFICATION: L1637824-02 - PW-2 - sampled on 11/19/2016 @ 1020 by CM

PARAMETER	RESULT	DETECTION LIMIT	METHOD	ANALYSIS DATE	ANALYST
Gross Alpha (+-Precision*), pCi/l (T)	3.8(+-2.2)	1.0	SM 7110 B	12/20/2016 @ 0800	LD
Gross Beta (+-Precision*), pCi/l (T)	3.4(+-2.4)	2.1	SM 7110 B	12/20/2016 @ 0800	LD
Radium-226 (+-Precision*), pCi/l (T)	0.8(+-0.3)	0.1	SM 7500-Ra B	12/9/2016 @ 1233	LD
Radium-228 (+-Precision*), pCi/l (T)	0.0(+-0.6)	0.7	EPA Ra-05	12/13/2016 @ 0953	JR
Radon (+-Precision*), pCi/l (T)	3580(+-91)	25.5	SM 7500-Rn B	11/23/2016 @ 1427	BRS

Certification ID's: CO/EPA CO00008; CT PH-0152; KS E-10265; NJ CO008; NYSELAP (NELAC Certified) 11417; RI LAO00284; WI 998376610, TX T104704256-15-6

*Variability of the radioactive decay process (counting error) at the 95% confidence level, 1.96 sigma.

By: Jessica Axen
Analytical Laboratories Manager

Report may only be copied in its entirety.
Results reported herein relate only to discrete samples submitted by the client. Hazen Research, Inc. does not warrant that the results are representative of anything other than the samples that were received in the laboratory.

CODES: (T) = Total (D) = Dissolved (S) = Suspended (R) = Total Recoverable
(PD) = Potentially Dissolved < = Less Than

Sample received past hold time. Radon results may be biased low.

An Employee-Owned Company

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 12/22/2016

Batch QC Evaluation Form-Gross Alpha

Analyte: Gross Alpha

Control Standard/LFB: ID: C11 pCi/ml: 57.4 (use 1.0 ml diluted)

Spike Solution: ID: C11 pCi/ml: 57.4 (use 1.0 ml)

Spike Recovery Calculation: Sample: TAP

Calculation: $\frac{(53.4 \times 1.0) - (0.7 \times 0.2)}{57.4} \times 100 = 93$ %

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/-- 30 %	✓		
Spike Recovery	70 - 130 %	✓		
Blank	< or = 2 x MDL	✓		
Duplicate 1	95% confidence interval overlap		✓	
Duplicate 2 *	95% confidence interval overlap		✓	

* Required for batch size greater than 10 samples.

Conclusions:

✓ Batch Passes
____ Batch Fails
____ Batch Passes, with exceptions:

Reruns Required: _____

Narrative: Both duplicates in the batch were over range of the calibration, results were not obtainable. Report as is

Batch Listing by Lab Control Number:

L84/16	K270/16
L147/16	K272/16
K276/16	K273/16
K282/16	K274/16
	K296/16
K263/16	L3/16
	L9/16
K269/16	L10/16

Evaluator: Lynnea Rockwell

12/22/16
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 12/22/2016

Batch QC Evaluation Form-Gross Beta

Analyte: Gross Beta

Control Standard/LFB: ID: C11 pCi/ml: 44.0 (use 1.0 ml diluted)

Spike Solution: ID: C11 pCi/ml: 44.0 (use 1.0 ml)

Spike Recovery Calculation: Sample: TAP

Calculation: $\frac{(37.8 \times 1.0) - (0.0 \times 0.2)}{44.0}$ X 100 = 86 %

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/-- 20 %	/		
Spike Recovery	80 - 120 %	/		
Blank	< or = 2 x MDL	/		
Duplicate 1	95% confidence interval overlap		/	
Duplicate 2 *	95% confidence interval overlap		/	

* Required for batch size greater than 10 samples.

Conclusions:

____Batch Passes
____Batch Fails
__/__Batch Passes, with exceptions:

Reruns Required: _____

Narrative: Both duplicates in the batch were over range of the calibration, results were not obtainable. Report as is.

Batch Listing by Lab Control Number:

L84/16	K270/16
L147/16	K272/16
K276/16	K273/16
K252/16	K274/16
	K296/16
K263/16	L3/16
	L9/16
K269/16	L10/16

Evaluator: Lynnea Rockwell

12/22/16
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 12/15/2016

Batch QC Evaluation Form

Analyte: Ra-226

Control Standard/LFB: ID: NBL 6A pCi/ml: 23.0 (use 2 ml diluted)

Spike Solution: ID: NBL 6A pCi/ml: 23.0 (use 2 ml)

Spike Recovery Calculation: Sample: K265-3C

Calculation: $\frac{(41.2 \times 1.0) - (0.1 \times 0.9)}{46.0} \times 100 =$ 89 %

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/-- 20 %	✓		
Spike Recovery	80 - 120 %	✓		
Blank	< or = 2 x MDL	✓		
Duplicate 1	95% confidence interval overlap	✓		
Duplicate 2 *	95% confidence interval overlap	✓		

* Required for batch size greater than 10 samples.

Conclusions:

✓ Batch Passes
____ Batch Fails
____ Batch Passes, with exceptions:

Reruns Required: _____

Narrative: _____

Batch Listing by Lab Control Number:

K265/16	K252/16
K138/16	K229/16
L35/16	K241/16
K235/16	K276/16
K232/16	K251/16
K247/16	K269/16

Evaluator: Lynneas Rockwell

12/15/16
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 12/13/2016

Batch QC Evaluation Form

Analyte: Ra-228

Control Standard/LFB: ID: NBL 7A pCi/ml: 12.8 (use 2 ml diluted)

Spike Solution: ID: NBL 7A pCi/ml: 12.8 (use 2 ml)

Spike Recovery Calculation: Sample: K229-1

Calculation: $\frac{(21.7 \times 1.0) - (0.0 \times 1.0)}{25.6} \times 100 = 85$ %

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/-- 20 %	✓		
Spike Recovery	80 - 120 %	✓		
Blank	< or = 2 x MDL	✓		
Duplicate 1	95% confidence interval overlap	✓		
Duplicate 2 *	95% confidence interval overlap			✓

* Required for batch size greater than 10 samples.

Conclusions:

✓ Batch Passes
____ Batch Fails
____ Batch Passes, with exceptions:

Reruns Required: _____

Narrative: _____

Batch Listing by Lab Control Number:

L35/16
K229/16
K241/16
K276/16

Evaluator: Lynnea Rockwell

12/20/16
Date

HAZEN RESEARCH, INC.
RADIOCHEMISTRY LABORATORY

Date: 11/23/2016

Batch QC Evaluation Form

Analyte: Rn-222

Control Standard/LFB: ID: NBL 6A pCi/L: 2000 (use _ ml diluted)

Spike Solution: ID: _____ pCi/ml: _____ (use ____ ml)

Spike Recovery Calculation: Sample: _____

Calculation: _____ X 100 = _____ %

Batch QC Evaluation:

Parameter	Criteria	Pass	Fail	N/A
Control Std./LFB	+/-- 20 %	✓		
Spike Recovery	80 - 120 %			✓
Blank	< or = 2 x MDL	✓		
Duplicate 1	95% confidence interval overlap		✓	
Duplicate 2 *	95% confidence interval overlap	✓		

* Required for batch size greater than 10 samples.

Conclusions:

____ Batch Passes
____ Batch Fails
✓ Batch Passes, with exceptions:

Reruns Required: _____

Narrative: Report higher results for K268/16-1

Batch Listing by Lab Control Number:

K268/16
K276/16

Evaluator: Lynnea Rockwell
11/28/16
Date

Date	December 28, 2016
HRI Project	009-458
HRI Series NO	K276/16
Date Rec'd	11/23/2016

Alpha Analytical, Inc.
Dave Sanford
Eight Walkup Drive
Westborogh, MA 01581-1019

Case Narrative

Samples L1637824-01 and -02 were received November 23, 2016 with three containers opened during shipment pictured below.

The samples were pulled out of the cooler, wiped down and remaining un-opened bottles were verified that the lids were sealed. Only after the samples were cleaned were they opened to verify the proper pH of <2 to eliminate cross contamination from the leakage.

The sample containers received for the radon analysis were intact but were received outside of the 96 hour holding time. They were prepared and analysis started within a few hours after sample receipt.

All analysis proceeded as normal with the exception of the gross alpha/beta analysis which had the sample batch replicates outside of calibration range. Both sets of duplicates were outside of the calibration millgrams and further analysis of these samples would damage the instrumentation. As all other quality control parameters (control standard recovery, spike sample recovery and method blanks) were within control limits, the analysis was reported with no adverse effects to individual sample results.

By: Lynnea Rockwell
Lynnea Rockwell
QA Manager, Analytical Services

SUB-UPS: Hazen, CO

K276/16

MASSDEP DRINKING WATER CHAIN OF CUSTODY

ALPHA ANALYTICAL

Page 1 of

Date Rec'd in Lab:

ALPHA Job # L1637824

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
508-822-3288

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, MA
Phone: 508-898-9220
Fax: 508-898-9193
Email: subreports@alphalab.com

Project Information

Project Name: Regency at Boxborough
PWS Name: Regency at Boxborough
Project Location: Boxborough, MA
Project PWS ID#
Project Manager: Dave Sanford
ALPHA Quote #:

Turn-Around Time

Standard ☑ Due Date:
Rush (only if pre approved) ☐ Time:

Report Information

☐ FAX ☑ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info
PO #

Please Indicate PWS Class Below

☑ COM
☐ NTNC
☐ TNC

SUBJECT TO MCL REPORTING

These samples have been previously analyzed by Alpha ☐

Other Project Specific Requirements/ Comments/Detection Limits

Please include @alphalab.com in emailed report. Please reference Alpha Job # L1637824 on Report

ANALYSIS

Sample Filtration

☐ Done
☐ Lab to do

Preservation

☐ Lab to do

(Please Check Below)

ALPHA Lab ID (Lab Use Only)	DEP Location Code	DEP Location Name	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RA-226	RA-228	ALPHA/BETA	RADON					Source(1) Multiple	Source(1) Single	Type Raw	Type Finished	Sample(2) Routine	Sample(2) Special	Total Bottles
L1637824-01		PW-1 (3L)	11/19/16	11:10 AM	DW	CM	x	x	x	x						x				x	7
-02		PW-2 (4L)	11/19/16	10:20 AM	DW	CM	x	x	x	x						x				x	7
		#1 2 LITERS LOST IN SHIPPING																			
		#2 1 LITER LOST IN SHIPPING																			
						11/23/2010															
					Container Type		P	P	P	V											
					Preservative		C	C	C	A											

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Preservative Code:
A = None
B = HCl
C = HNO3
D = H2SO4
E = NaOH
F = MeOH
G = NaHSO4
H = Na2S2O3
I = Ascorbic Acid
J = NH4Cl
K = Zn Acetate
O = Other

(1) List connected sources if Multiple

(2) Explain if sample type is Special

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/23/16		
		[signature]	11/23/2016 1105

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-24 HC (rev 18-Sept-2013)

REC'D PAST HOLD TIME FOR RADON BW

SUB-UPS: Hazen, CO

MASSDEP DRINKING WATER CHAIN OF CUSTODY

ALPHA ANALYTICAL

Page 1 of

Date Rec'd in Lab:

ALPHA Job # L1637824

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
508-822-3288

Client Information

Client:	Alpha Analytical Lab
Address:	8 Walkup Drive
	Westborough, MA
Phone:	508-898-9220
Fax:	508-898-9193
Email:	subreports@alphalab.com

Project Information

Project Name:	Regency at Boxborough
PWS Name:	Regency at Boxborough
Project Location:	Boxborough, MA
Project PWS ID#	
Project Manager:	Dave Sanford
ALPHA Quote #:	

Turn-Around Time

Standard ☑ Due Date:

Rush (only if pre approved) ☐ Time:

Report Information: ☐ FAX ☐ ADEx

Data Deliverables: ☑ EMAIL ☐ Add'l Deliverables

Billing Information: ☐ Same as Client Info

PO #

Please Indicate PWS Class Below

☑ COM
☐ NTNC
☐ TNC

SUBJECT TO MCL REPORTING

These samples have been previously analyzed by Alpha ☐

Other Project Specific Requirements/ Comments/Detection Limits

Please include @alphalab.com in emailed report. Please reference Alpha Job # L1637824 on Report

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do

Preservation
☐ Lab to do

(Please Check Below)

ALPHA Lab ID (Lab Use Only)	DEP Location Code	DEP Location Name	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RA-226	RA-228	ALPHA/BETA	RADON					Source(1) Multiple	Source(1) Single	Type Raw	Type Finished	Sample(2) Routine	Sample(2) Special	Total Bottles
		PW-1	11/19/16	11:10 AM	DW	CM	x	x	x	x						x				x	7
		PW-2	11/19/16	10:20 AM	DW	CM	x	x	x	x						x				x	7
Container Type							P	P	P	V											
Preservative							C	C	C	A											

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Preservative Code:
A = None
B = HCl
C = HNO3
D = H2SO4
E = NaOH
F = MeOH
G = NaHSO4
H = Na2S2O3
I = Ascorbic Acid
J = NH4Cl
K = Zn Acetate
O = Other

(1) List connected sources if Multiple

(2) Explain if sample type is Special

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/23/16		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-24 HC (rev 18-Sept-2013)

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab 11/19/16

ALPHA Job #: L1637824 @ 11/22/16 (~~L1637776~~)

ALPHA ANALYTICAL

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: GeoHydroCycle

Address:

Phone:

Email: svsmith@geohydrocycle.com

Project Information

Project Name: Regency at Boxborough

Project Location:

Project #: 15005

Project Manager: Steve Smith

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 #: 15005

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 Mass DW STDs Criteria * MADEP DW REPORTING FORMS

Additional Project Information:

SEE PAGE 1 Attachment (Appx. A)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PERCHLORATE	ALPHA RA 228, RA 226	RADON	504.1	505, 525.3	531.1	525.2	SAMPLE INFO Sterile Filtration ☑ Field ☐ Lab to do (PERCHLORATE) Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
~~37776-01~~	PW-1	11/19/16	11:10	DW										✓	✓	✓	✓	✓	✓				17
37824-02	PW-2		10:20											✓	✓	✓	✓	✓	✓				17
													Container Type	B	P	AV	V	V	A				
													Preservative	A	C	A	H	HO	HP				

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
C.V.P. Matthews	11/19/16 0100	[illegible]	11/19/16 0100

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar 2012)

SUB-OPS: Hazen. CO

MASSDEP DRINKING WATER CHAIN OF CUSTODY

ALPHA ANALYTICAL

Page 1 of

Date Rec'd in Lab:

ALPHA Job # L1637824

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 508-822-3288

Client Information	
Client:	Alpha Analytical Lab
Address:	8 Walkup Drive
Westborough, MA	
Phone:	508-898-9220
Fax:	508-898-9193
Email:	subreports@alphalab.com

Project Information	
Project Name:	Regency at Boxborough
PWS Name:	Regency at Boxborough
Project Location:	Boxborough, MA
Project PWS ID#	
Project Manager:	Dave Sanford
ALPHA Quote #:	

Turn-Around Time

Standard ☑ Due Date:

Rush (only if pre approved) ☐ Time:

Report Information: ☐ FAX ☐ ADEx

Data Deliverables: ☑ EMAIL ☐ Add'l Deliverables

Billing Information: ☐ Same as Client Info

PO #

Please Indicate PWS Class Below

☑ COM

☐ NTNC

☐ TNC

SUBJECT TO MCL REPORTING

These samples have been previously analyzed by Alpha ☐

Other Project Specific Requirements/ Comments/Detection Limits

Please include @alphalab.com in emailed report. Please reference Alpha Job # L1637824 on Report

Sample Filtration

☐ Done

☐ Lab to do

Preservation

☐ Lab to do

(Please Check Below)

ALPHA Lab ID (Lab Use Only)	DEP Location Code	DEP Location Name	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	RA-226	RA-228	ALPHA/BETA	RADON					Source(1) Multiple	Source(1) Single	Type Raw	Type Finished	Sample(2) Routine	Sample(2) Special	Total Bottles
		PW-1	11/19/16	11:10 AM	DW	CM	x	x	x	x						x				x	7
		PW-2	11/19/16	10:20 AM	DW	CM	x	x	x	x						x				x	7

	RA-226	RA-228	ALPHA/BETA	RADON				
Container Type	P	P	P	V				
Preservative	C	C	C	A				

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
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E = Encore
D = BOD Bottle

Preservative Code:
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H = Na2S2O3
I = Ascorbic Acid
J = NH4Cl
K = Zn Acetate
O = Other

(1) List connected sources if Multiple

(2) Explain if sample type is Special

Relinquished By:	Date/Time	Received By:	Date/Time

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GRANITE STATE ANALYTICAL SERVICES, LLC

22 Manchester Road, Unit 2, Derry, NH 03038

Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837

http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

Legend

- Passes ✓
- Fails EPA Primary ⊗
- Fails EPA Secondary ▼
- Fails State Guideline ✕
- Attention ⚠

DATE PRINTED: 12/07/2016

CLIENT NAME: Alpha Analytical

CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1611-02117-001

SAMPLED BY: Alpha Analytical

SAMPLE ADDRESS: L1637826
PW-1
MA

LOCATION:

DATE AND TIME COLLECTED: 11/19/2016 11:10 AM

DATE AND TIME RECEIVED: 11/23/2016 2:30 PM

ANALYSIS PACKAGE: SOC GSA MA

RECEIPT TEMPERATURE: ON ICE 3.9 CELSIUS

CLIENT JOB # L1637826

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	BM-NH	12/01/16 8:31 PM
Date Extracted	-					No Limit	EPA 504.1	KV-NH	12/01/16 9:15 AM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	BM-NH	12/01/16 8:31 PM
Aroclor 1016	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Aroclor 1221	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Aroclor 1232	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Aroclor 1242	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Aroclor 1248	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Aroclor 1254	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Aroclor 1260	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:12 PM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	BM-NH	12/01/16 7:12 PM
Date Extracted	-					No Limit	EPA 505	KV-NH	12/01/16 9:15 AM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	BM-NH	12/01/16 7:12 PM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	BM-NH	11/30/16 9:33 PM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	BM-NH	11/30/16 9:33 PM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	BM-NH	11/30/16 9:33 PM
Date Extracted	-					No Limit	EPA 515.3	ND-NH	11/30/16 9:15 AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	BM-NH	11/30/16 9:33 PM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	BM-NH	11/30/16 9:33 PM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	BM-NH	11/30/16 9:33 PM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	BM-NH	11/30/16 9:33 PM
2,4-Dichlorophenylacetic acid	112	%				No Limit	EPA 515.3 - SS	BM-NH	11/30/16 9:33 PM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:22 PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Benzo(a)pyrene*	<0.1	ug/L	✓		0.1	0.2 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:22 PM
Date Extracted	-					No Limit	EPA 525.2	KV-NH	11/28/16 10:25 AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	11/30/16 5:22 PM

GRANITE STATE ANALYTICAL SERVICES, LLC

22 Manchester Road, Unit 2, Derry, NH 03038

Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837

http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

Legend

- Passes ✓
- Fails EPA Primary ⊗
- Fails EPA Secondary ▼
- Fails State Guideline ✕
- Attention ⚠

DATE PRINTED: 12/07/2016

CLIENT NAME: Alpha Analytical

CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1611-02117-001

SAMPLED BY: Alpha Analytical

SAMPLE ADDRESS: L1637826
PW-1
MA

LOCATION:

DATE AND TIME COLLECTED: 11/19/2016 11:10 AM

DATE AND TIME RECEIVED: 11/23/2016 2:30 PM

ANALYSIS PACKAGE: SOC GSA MA

RECEIPT TEMPERATURE: ON ICE 3.9 CELSIUS

CLIENT JOB # L1637826

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:22 PM
Metribuzin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:22 PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:22 PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	11/30/16 5:22 PM
1,3-Dimethyl-2-nitrobenzene	89	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:22 PM
Perylene-d12	90	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:22 PM
Pyrene-d10	104	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:22 PM
Triphenylphosphate	107	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:22 PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	BM-NH	12/03/16 9:09 PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	BM-NH	12/03/16 9:09 PM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:09 PM

GRANITE STATE ANALYTICAL SERVICES, LLC

22 Manchester Road, Unit 2, Derry, NH 03038

Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837

http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▼
Fails State Guideline	✕
Attention	⚠

DATE PRINTED: 12/07/2016

CLIENT NAME: Alpha Analytical

CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1611-02117-001

SAMPLED BY: Alpha Analytical

DATE AND TIME COLLECTED: 11/19/2016 11:10 AM

DATE AND TIME RECEIVED: 11/23/2016 2:30 PM

SAMPLE ADDRESS: L1637826
PW-1
MA

ANALYSIS PACKAGE: SOC GSA MA

RECEIPT TEMPERATURE: ON ICE 3.9 CELSIUS

LOCATION:

CLIENT JOB # L1637826

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed

The results presented in this report relate to the samples listed above in the condition in which they were received.
RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

*** MA Certified Analysis**

Donald A. D'Anjou, Ph. D.
Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.
State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |
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CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 12/07/2016
CLIENT NAME: Alpha Analytical
CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

Legend
Passes ✓
Fails EPA Primary ⊗
Fails EPA Secondary ▼
Fails State Guideline ✕
Attention ⚠

SAMPLE ID#: 1611-02117-002
SAMPLED BY: Alpha Analytical
SAMPLE ADDRESS: L1637826
PW-2
MA
LOCATION:

DATE AND TIME COLLECTED: 11/19/2016 10:20 AM
DATE AND TIME RECEIVED: 11/23/2016 2:30 PM
ANALYSIS PACKAGE: SOC GSA MA
RECEIPT TEMPERATURE: ON ICE 3.9 CELSIUS
CLIENT JOB # L1637826

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
1,2-Dibromo-3-chloropropane (DBCP)*	<0.02	ug/L	✓		0.02	0.2 ug/L	EPA 504.1	BM-NH	12/01/16 8:52 PM
Date Extracted	-					No Limit	EPA 504.1	KV-NH	12/01/16 9:15 AM
Ethylene Dibromide (EDB)*	<0.02	ug/L	✓		0.02	0.05 ug/L	EPA 504.1	BM-NH	12/01/16 8:52 PM
Aroclor 1016	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Aroclor 1221	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Aroclor 1232	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Aroclor 1242	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Aroclor 1248	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Aroclor 1254	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Aroclor 1260	<0.2	ug/L			0.2	No Limit	EPA 505	BM-NH	12/01/16 7:47 PM
Chlordane*	<0.2	ug/L	✓		0.2	2 ug/L	EPA 505	BM-NH	12/01/16 7:47 PM
Date Extracted	-					No Limit	EPA 505	KV-NH	12/01/16 9:15 AM
Toxaphene*	<1.0	ug/L	✓		1.0	3 ug/L	EPA 505	BM-NH	12/01/16 7:47 PM
2,4,5-TP (Silvex)*	<0.25	ug/L	✓		0.25	50 ug/L	EPA 515.3	BM-NH	11/30/16 10:55 PM
2,4-D*	<1	ug/L	✓		1	70 ug/L	EPA 515.3	BM-NH	11/30/16 10:55 PM
Dalapon*	<1	ug/L	✓		1	200 ug/L	EPA 515.3	BM-NH	11/30/16 10:55 PM
Date Extracted	-					No Limit	EPA 515.3	ND-NH	11/30/16 9:15 AM
Dicamba*	<0.18	ug/L			0.18	No Limit	EPA 515.3	BM-NH	11/30/16 10:55 PM
Dinoseb*	<0.5	ug/L	✓		0.5	7 ug/L	EPA 515.3	BM-NH	11/30/16 10:55 PM
Pentachlorophenol*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 515.3	BM-NH	11/30/16 10:55 PM
Picloram*	<1.3	ug/L	✓		1.3	500 ug/L	EPA 515.3	BM-NH	11/30/16 10:55 PM
2,4-Dichlorophenylacetic acid	116	%				No Limit	EPA 515.3 - SS	BM-NH	11/30/16 10:55 PM
Alachlor*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Aldrin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:50 PM
Atrazine*	<0.1	ug/L	✓		0.1	3 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Benzo(a)pyrene*	<0.1	ug/L	✓		0.1	0.2 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Butachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:50 PM
Date Extracted	-					No Limit	EPA 525.2	KV-NH	11/28/16 10:25 AM
Di(2-ethylhexyl)adipate*	<0.6	ug/L	✓		0.6	400 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Di(2-ethylhexyl)phthalate*	<3	ug/L	✓		3	6 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Dieldrin*	<0.04	ug/L			0.04	No Limit	EPA 525.2	DD-NH	11/30/16 5:50 PM

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http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

Legend
- Passes ✓
- Fails EPA Primary ⊗
- Fails EPA Secondary ▼
- Fails State Guideline ✕
- Attention ⚠

DATE PRINTED: 12/07/2016
CLIENT NAME: Alpha Analytical
CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1611-02117-002
SAMPLED BY: Alpha Analytical
SAMPLE ADDRESS: L1637826
PW-2
MA
LOCATION:

DATE AND TIME COLLECTED: 11/19/2016 10:20 AM
DATE AND TIME RECEIVED: 11/23/2016 2:30 PM
ANALYSIS PACKAGE: SOC GSA MA
RECEIPT TEMPERATURE: ON ICE 3.9 CELSIUS
CLIENT JOB # L1637826

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Endrin*	<0.1	ug/L	✓		0.1	2 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Heptachlor Epoxide*	<0.06	ug/L	✓		0.06	0.2 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Heptachlor*	<0.04	ug/L	✓		0.04	0.4 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Hexachlorobenzene*	<0.1	ug/L	✓		0.1	1 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Hexachlorocyclopentadiene*	<0.1	ug/L	✓		0.1	50 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Lindane*	<0.07	ug/L	✓		0.07	0.2 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Methoxychlor*	<0.1	ug/L	✓		0.1	40 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
Metolachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:50 PM
Metribuzin*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:50 PM
Propachlor*	<0.1	ug/L			0.1	No Limit	EPA 525.2	DD-NH	11/30/16 5:50 PM
Simazine*	<0.1	ug/L	✓		0.1	4 ug/L	EPA 525.2	DD-NH	11/30/16 5:50 PM
1,3-Dimethyl-2-nitrobenzene	91	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:50 PM
Perylene-d12	98	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:50 PM
Pyrene-d10	106	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:50 PM
Triphenylphosphate	113	%				No Limit	EPA 525.2 - SS	DD-NH	11/30/16 5:50 PM
3-Hydroxycarbofuran*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Aldicarb Sulfone*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Aldicarb Sulfoxide*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Aldicarb*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Carbaryl*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Carbofuran*	<0.9	ug/L	✓		0.9	40 ug/L	EPA 531.1	BM-NH	12/03/16 9:56 PM
Methiocarb*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Methomyl*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM
Oxamyl (Vydate)*	<1	ug/L	✓		1	200 ug/L	EPA 531.1	BM-NH	12/03/16 9:56 PM
Propoxur (Baygon)*	<1	ug/L			1	No Limit	EPA 531.1	BM-NH	12/03/16 9:56 PM

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CERTIFICATE OF ANALYSIS FOR DRINKING WATER

Legend	
Passes	✓
Fails EPA Primary	⊗
Fails EPA Secondary	▼
Fails State Guideline	✕
Attention	⚠

DATE PRINTED: 12/07/2016

CLIENT NAME: Alpha Analytical

CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1611-02117-002

SAMPLED BY: Alpha Analytical

DATE AND TIME COLLECTED: 11/19/2016 10:20 AM

DATE AND TIME RECEIVED: 11/23/2016 2:30 PM

SAMPLE ADDRESS: L1637826
PW-2
MA

ANALYSIS PACKAGE: SOC GSA MA

RECEIPT TEMPERATURE: ON ICE 3.9 CELSIUS

LOCATION:

CLIENT JOB # L1637826

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed

The results presented in this report relate to the samples listed above in the condition in which they were received.
RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

*** MA Certified Analysis**

Donald A. D'Anjou, Ph. D.
Laboratory Director

This analysis meets Commonwealth of Massachusetts requirements except as noted.
State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |
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CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 11/19/16

ALPHA Job #: ~~L1637776~~ L1637826 @ 11/22/16

ALPHA TEAM
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GeoHydroCycle
Address:
Phone:
Email: swsmith@geohydrocycle.com

Project Information

Project Name: Regency at Boxborough
Project Location:
Project #: 15005
Project Manager: Steve Smith
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 #: 15005

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 Target)
☐ Yes ☐ No NPDES RGP
☑ Other State /~~Fed~~ Program MASS DW STDS Criteria * MADEP DW REPORTING FORMS

Additional Project Information:

SEE PAGE 1 Attachment (Appx. A)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	PERCHLORATE	ALPHA RA 228, RA 226	RADON	504.1, 505, 525.3	531.1	525.2	SAMPLE INFO Sterile Filtration ☑ Field ☐ Lab to do (PERCHLORATE) Preservation ☐ Lab to do	Sample Comments	TOTAL # BOTTLES
~~37776~~-01	PW-1	11/19/16	11:10	DW										✓	✓	✓	✓	✓	✓			17
37826 -02	PW-2		10:20											✓	✓	✓	✓	✓	✓			17
													Container Type	B	P	AV	V	V	A			
													Preservative	A	C	A	H	HO	HB			

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
C.V.P. Matthews	11/19/16 0100	[illegible]	11/19/16 0100

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar 2012)

SUB-COURIER: Granite State, NH

MASSDEP DRINKING WATER CHAIN OF CUSTODY

Page 1 of

Date Rec'd in Lab:

ALPHA Job # L1637826

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 508-822-3288

Project Information	
Project Name:	Regency at Boxborough
PWS Name:	Regency at Boxborough
Project Location:	Boxborough, MA
Project PWS ID#	
Project Manager:	Dave Sanford
ALPHA Quote #:	

Report Information: ☐ FAX ☐ ADEx

Data Deliverables: ☑ EMAIL ☐ Add'l Deliverables

Billing Information: ☐ Same as Client Info; PO #

Please Indicate PWS Class Below: ☑ COM ☐ NTNC ☐ TNC

Client Information	
Client:	Alpha Analytical Lab
Address:	8 Walkup Drive
	Westborough, MA
Phone:	508-898-9220
Fax:	508-898-9193
Email:	subreports@alphalab.com

Turn-Around Time: Standard ☑ Rush (only if pre approved) ☐ Due Date: Time:

SUBJECT TO MCL REPORTING

These samples have been previously analyzed by Alpha ☐

Other Project Specific Requirements/ Comments/Detection Limits

Please include @alphalab.com in emailed report. Please reference Alpha Job # L1637826 on Report

Sample Filtration: ☐ Done ☐ Lab to do

Preservation: ☐ Lab to do

(Please Check Below)

ALPHA Lab ID (Lab Use Only)	DEP Location Code	DEP Location Name	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	504.1	505	515.3	525.2	531.1				Source(1) Multiple	Source(1) Single	Type Raw	Type Finished	Sample(2) Routine	Sample(2) Special	Total Bottles
		PW-1	11/19/16	11:10 AM	DW	CM	x	x	x	x	x					x				x	9
		PW-2	11/19/16	10:20 AM	DW	CM	x	x	x	x	x					x				x	9

	504.1	505	515.3	525.2	531.1
Container Type	V	V	V	A	V
Preservative	H	H	H	N/B	P/H

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Preservative Code: A = None, B = HCl, C = HNO3, D = H2SO4, E = NaOH, F = MeOH, G = NaHSO4, H = Na2S2O3, I = Ascorbic Acid, J = NH4Cl, K = Zn Acetate, O = Other

(1) List connected sources if Multiple

(2) Explain if sample type is Special

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-24 HC (rev 18-Sept-2013)

Enclosure 6 - Copies of Transmittal Form and BRP WS-15 Form

Enter your transmittal number → X273115
Transmittal Number

Your unique Transmittal Number can be accessed online: http://mass.gov/dep/service/online/trasmfrm.shtml

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

BRP WS 15
1. Permit Code: 7 or 8 character code from permit instructions

New Source Approval
2. Name of Permit Category

Approval of Pump Test Report
3. Type of Project or Activity

B. Applicant Information – Firm or Individual

Boxborough Town Center, LLC
1. Name of Firm - Or, if party needing this approval is an individual enter name below:

2. **Last Name** of Individual
3. **First Name** of Individual
4. MI

PO Box 985, 25 Westford Lane
5. Street Address

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Acton	MA	01720	(978) 266-9751	

James Fenton
11. Contact Person

fentonandson@msn.com
12. e-mail address (optional)

C. Facility, Site or Individual Requiring Approval

1. Name of Facility, Site Or Individual

2. Street Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #

8. DEP Facility Number (if Known)	9. Federal I.D. Number (if Known)	10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

GeoHydroCycle, Inc.
1. Name of Firm Or Individual

151B California Street
2. Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Newton	MA	02458	(617) 527-8074	

Stephen W. Smith, P.E., P.HGW
8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☒ yes ☐ no
If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. ☐ **Fee** Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).
There are no fee exemptions for BWSC permits, regardless of applicant status.
2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. ☐ Homeowner (according to 310 CMR 4.02).

Check Number	Dollar Amount	Date
3503	$1,585	January 4, 2017

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Drinking Water Program

BRP WS Application

For Drinking Water Program (Water Supply) Permits or Approvals

X273115
Transmittal Number

Facility ID# (if known)

A. Application

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Is this application for ☒ an Original or ☐ a Resubmittal?

2. Applicant:

Boxborough Town Center, LLC			PO Box 985, 25 Westford Lane	
Name			Address	
Acton	MA	01720	James Fenton	(978) 266-9751
City	State	Zip	Contact	Telephone

3. Consultant:

GeoHydroCycle, Inc.			151B California Street	
Name			Address	
Newton	MA	02458	Stephen W. Smith	(617) 527-8074
City	State	Zip	Contact	Telephone

B. Permit

Please check the permit or approval for which you are applying:

Zone II Determination for Existing Sources
- ☐ BRP WS 07 Approval to Conduct Pump Test for Zone II Delineation
- ☐ BRP WS 08 Approval of Zone II Delineation

New Technology
- ☐ BRP WS 11 Minor New Technology Approval; where no field test required
  - ☐ Drinking Water Additive
  - ☐ Cross Connection Device
  - ☐ Water Vending Machine
  - ☐ Other (specify):
- ☐ BRP WS 12 Major New Technology Approval: where field testing is required
- ☐ BRP WS 27 New Technology with Third-party Approval
- ☐ BRP WS 28 Vending Site/Source Prototype
- ☐ BRP WS 31 Vending and POU/POE Devices with Third-party Approval

New Source Approvals <70 gpm
- ☐ BRP WS 13 Exploratory Phase, Site Examination, Land Use Survey and Approval to Conduct Pumping Test
- ☒ BRP WS 15 Pumping Test Report Approval and Approval to Construct Source
- ☐ BRP WS 37 Approval of Transient Non-Community Source Less than 7 Gallons per Minute (combines BRP WS 13 and BRP WS 15 submittals)

New Source Approvals = or > 70 gpm
- ☐ BRP WS 17 Exploratory Phase, Site Examination, Land Use Survey, and Conduct Pumping Test
- ☐ BRP WS 19 Pumping Test Report Approval
- ☐ BRP WS 20 To Construct Source

Water Treatment Approvals
- ☐ BRP WS 21A To Conduct Pilot Study < 40,000 gpd
- ☐ BRP WS 21B To Conduct Pilot Study = or > 40,000 gpd and < 200,000 gpd
- ☐ BRP WS 21C To Conduct Pilot Study = or > 200,000 gpd and < 1 mgd
- ☐ BRP WS 21D To Conduct Pilot Study = or > 1 mgd
- ☐ BRP WS 22A Pilot Study Report < 40,000 gpd
- ☐ BRP WS 22B Pilot Study Report = or > 40,000 gpd and < 200,000 gpd
- ☐ BRP WS 22C Pilot Study Report = or > 200,000 gpd and < 1 mgd
- ☐ BRP WS 22D Pilot Study Report = or > 1 mgd
- ☐ BRP WS 23A To Construct Facility <40,000 gpd
- ☐ BRP WS 23B To Construct Facility = or > 40,000 gpd and < 200,000 gpd
- ☐ BRP WS 23C To Construct Facility = or > 200,000 gpd and < 1 mgd
- ☐ BRP WS 24 To Construct Facility = or > 1 mgd
- ☐ BRP WS 25 Treatment Facility Modification
- ☐ BRP WS 29 Water Treatment: Chemical Addition Retrofits of Water Systems > 3,300 people
- ☐ BRP WS 30A Vending Installation Approval
- ☐ BRP WS 30B POU/POE Installation Approval
- ☐ BRP WS 34 Water Treatment: Chemical Addition Retrofits of Water Systems = or < 3,300 people
- ☐ BRP WS 35A Multiple Vending Installation Approval
- ☐ BRP WS 35B Multiple POU/POE Installation Approval

Water Quality Assurance
- ☐ BRP WS 26 Sale or Acquisition of Land for Water Source
- ☐ BRP WS 36 Abandonment of Water Source

Distribution System Modifications
- ☐ BRP WS 32 Systems > 3,300 people
- ☐ BRP WS 33 Systems = or < 3,300 people

Massachusetts Department of Environmental Protection
Bureau of Resource Protection – Drinking Water Program

BRP WS Application

For Drinking Water Program (Water Supply) Permits or Approvals

X273115
Transmittal Number

Facility ID# (if known)

C. Certification

"I certify, under penalty of law, that this application and all attachments were prepared under my supervision, in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted in this application, the information submitted is, to the best of my knowledge and belief, true, accurate and complete."

Member
Authorized Signature

1/4/17
Date

James Fenton
Print Name

Member
Position/Title