

**APPLICATION FOR APPROVAL TO CONSTRUCT
PUBLIC WATER SUPPLY SYSTEM**
BRP WS 15 Application – Pumping Test Report and Water System Plans
*Jefferson at Beaver Brook
Boxborough, Massachusetts*

*Prepared for TDI Real Estate Acquisition, LLC
File No. 3678.01
May 18, 2015*



BRP WS Application

For Drinking Water Program (Water Supply) Permits or Approvals

A. Application

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

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



2. Applicant:

TDI Real Estate Acquisition, LLC

3 West Main Street

Name

Address

Irvington

NY

10533

Tom Moran

(212) 660-0250

City

State

Zip

Contact

Telephone

3. Consultant:

Sanborn, Head & Associates, Inc.

1 Technology Park Drive

Name

Address

Westford

MA

01886

Vernon Kokosa, P.E.

(978) 392-0900 x1009

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

X266074
Transmittal Number

BRP WS Application

For Drinking Water Program (Water Supply) Permits or Approvals

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."



5/18/15

Authorized Signature

Date

Vernon R. Kokosa, P.E.

Principal/Sr. V.P. as agent for applicant

Print Name

Position/Title

Mr. Tom Moran
TDI Real Estate Acquisition, LLC
3 West Main Street, Suite 203
Irvington, New York 10533

May 18, 2015
File No. 3678.01

**Re: Pumping Test Report and Potable Water System Plans
BRP WS 15 Permit Application
Jefferson at Beaver Brook
Boxborough, MA**

Dear Tom:

Enclosed please find our pumping test report and permit-level plans for the proposed potable water system for the above-referenced site. This report is intended to supplement the BRP WS 15 permit application for approval from Massachusetts Department of Environmental Protection (MassDEP) to construct the potable water system.

If you have any questions regarding the permit application, please contact the undersigned.

Sincerely,
SANBORN, HEAD & ASSOCIATES, INC.



Kent B. Walker
Project Manager



Vernon R. Kokosa, P.E.
Principal/Senior Vice President

KBW/VRK/SSS: vrk

Enclosures: Pumping Test Report and Potable Water System Plans

cc: Barbara Kickham ~ MassDEP Drinking Water Program, CERO
Town of Boxborough Planning Department
Nashoba Valley Board of Health
Bill Caulder ~ 6M Development



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APPLICATION FOR APPROVAL TO CONSTRUCT PUBLIC WATER SUPPLY SYSTEM
BRP WS 15 – Pumping Test Report and Water System Plans
Jefferson at Beaver Brook
Boxborough, Massachusetts

1.0 INTRODUCTION

This report supports a BRP WS 15 application for approval to construct a new public water supply source with a permitted withdrawal rate of 39,820 gallons per day (gpd) for the Jefferson at Beaver Brook residential apartment development in Boxborough, MA. The proposed bedrock wells will be part of a non-transient community (NTC) water system to serve a Chapter 40B residential development with 362 bedrooms to the northeast of the I-495/Route 111 interchange in Boxborough, MA. A locus plan is provided as Figure 1.

This report includes the Well Completion Reports for two new bedrock wells drilled by a Massachusetts licensed well driller, the results of step-drawdown tests and a 5-day pumping test, the results of water quality sampling and laboratory analysis completed as part of the pumping test, plus permit-level design plans for the new potable water system. An application for approval of the proposed water treatment system (BRP WS 23A) will be submitted to the Massachusetts Department of Environmental Protection (MassDEP) under separate cover.

This report is being submitted to MassDEP on behalf of TDI Real Estate Acquisition, LLC (applicant) by Sanborn, Head & Associates, Inc. (Sanborn Head) in accordance with our professional services agreement with the applicant.

1.1 Background

The proposed permitted withdrawal rate for each bedrock well is 19,910 gpd (or approximately 13.8 gpm) which corresponds to a Zone 1 radius of 295 feet and an Interim Wellhead Protection Area (IWPA) radius of 843 feet. The Zone 1 radius for both wells will be located on land currently owned by Boxborough Land Trust and under purchase agreement by the applicant. After permits are received for the project and the real estate transaction occurs, the Zone 1 for both wells will be located on lands owned by the applicant.

The proposed withdrawal rate for both wells combined is 39,820 gpd which equals the design flow rate for the wastewater soil absorption system. An application for a Groundwater Discharge Permit for subsurface wastewater disposal for this project is under review by MassDEP. The wastewater leaching fields will be located outside of the IWPA and/or Zone II wellhead protection areas for the proposed water supply wells in this application and other existing public water supply wells in the area.

MassDEP approved the project's well locations and pumping test procedures (BRP WS 13 approval) by letter dated April 2, 2014 from Mr. Purnachander Rao of the Drinking Water Program at the Central Region Office in Worcester, MA.

1.2 Site Description

The site includes 67.3 acres that has been designated as a Priority Development Site by the Metro West Development Compact as part of a coordinated effort by surrounding municipal Town governments to construct affordable housing. The site currently does not have municipal infrastructure for potable water or sewer. As such, the site development will include construction of two on-site potable water supply wells, a potable water treatment system for disinfection and water softening, and an on-site wastewater treatment plant with a subsurface disposal system.

Figure 2 is an Existing Conditions Plan that shows the installed locations of the new bedrock wells. Approximately 15 acres of the property currently used for horse pasturing will become dedicated conservation land as part of this project. The new bedrock wells were installed so that the Zone 1 radius for both wells falls entirely within the proposed conservation land. A Site Development Plan is provided as Figure 3.

2.0 WELL DRILLING AND INSTALLATION

The bedrock wells WS-1 and WS-2 were drilled by Skillings & Sons, Inc., of Amherst, NH (a Massachusetts licensed well driller - Rig Permit #394) under contract with the applicant from October to December 2014. Copies of the Well Completion Reports filed by the well driller are included in Appendix A. The locations of the wells are shown on Figure 2.

The Well Completion Report for WS-1 indicates that the depth to bedrock is 13 feet below ground surface and the total depth of the well is 500 feet. Steel casing with a drive shoe (8-inches in diameter) was advanced to a depth of 40.5 feet (through 13 feet of overburden soil and 27.5 feet into bedrock) and sealed using cement-bentonite grout. The remainder of the well below the casing depth is a 6-inch diameter open hole in the bedrock to a depth of 500 feet. The well casing stick up is approximately 1.5 feet above ground surface. The report indicates the primary water bearing zone is between 95 and 100 feet below ground surface.

The Well Completion Report for WS-2 indicates that the depth to bedrock is 15 feet below ground surface and the total depth of the well is 700 feet. Steel casing with a drive shoe (6-inches in diameter) was advanced to a depth of 54.5 feet (through 15 feet of overburden soil and 39.5 feet into bedrock) and sealed using cement-bentonite grout. The remainder of the well below the casing depth is a 6-inch diameter open hole in the bedrock to a depth of 700 feet. The well casing stick up is approximately 1.5 feet above ground surface. The report indicates the primary water bearing zone is between 270 and 280 feet below ground surface.

3.0 PUMPING TEST

The following sections describe the pumping test setup and instrumentation, the pre-pumping test data collection, the procedures used during the pumping test, and the water quality sampling performed during the test. Appendix B includes tables and graphical plots of the pumping test data. Appendix C includes the water quality data reported by the analytical laboratory on MassDEP standard forms.

3.1 Pumping Test Setup and Instrumentation

In preparation for the pumping test, each well was equipped with a temporary submersible pump and an electronic water level pressure transducer. The driller disinfected the wells using chlorine. Temporary 1¼-inch diameter high density polyethylene pipe was installed from the submersible pumps to a discharge point on a splash pad surrounded by two rows of hay bales along the edge of wetlands approximately 200 feet to the southwest of the well locations. A sampling port, ball valve, and inline totalizing flow meter were installed along the discharge pipe for each well.

In addition, water level transducers were installed in seven nearby private wells to measure the response in the private wells due to pumping at the two new bedrock wells for the project. The monitoring of the private wells during the pumping tests was a requirement of the Comprehensive Permit issued by the Town of Boxborough for the project. Water level monitoring was performed in nearby private wells at the following addresses:

- 38 Whitcomb Road
- 48 Whitcomb Road
- 70 Whitcomb Road
- 90 Whitcomb Road
- 45 Hill Road
- 50 Hill Road, and
- 187 Hill Road

The electronic water level pressure transducers (manufactured by In-Situ, Inc.) were used to automatically record water level measurements at pre-programmed time intervals. The water level pressure transducer was equipped with a polyurethane insulated cable which was vented to the atmosphere to compensate for fluctuations in barometric pressure; as such, no corrections to water levels were necessary as a result of variations in barometric pressure.

3.2 Pre-Pumping Test Data Collection

Water levels were measured in the two on-site bedrock wells (WS-1 and WS-2) and seven nearby private wells prior to the pumping test for approximately 13 days from February 20 to March 5, 2015. Water level measurements were recorded at one minute intervals, or less, using the pressure transducer. Appendix B.1 includes plots of the depth to water versus time prior to the pumping test for wells WS-1 and WS-2.

Our review of the pre-test water levels indicates that that the water level in the new bedrock wells (WS-1 and WS-2) may be influenced slightly by pumping from a nearby well as evidenced by slight fluctuations in the water level of less than one foot at intervals consistent with off-site pumping activity.

Appendix C includes plots of the depth to water versus time prior to the pumping test for the 7 nearby private wells (Figures C-1 through C-7). These plots include data showing the

induced drawdown in the nearby private wells during their normal operation prior to the start of pumping in the new bedrock wells for the project.

Barometric pressure, temperature and rainfall data were obtained from recording instruments at the nearest public airport (Hanscom Field, Bedford, MA) located approximately 14 miles to the east. Table 1 provides a summary of the meteorological data recorded at Hanscom Field from February 20 to March 17, 2015 (from 13 days prior to the pumping test through completion of the recovery period after the pumping test).

3.3 Step Drawdown Tests

Step drawdown tests were performed in wells WS-1 and WS-2 prior to the 5-day pumping test. The step drawdown tests were performed by pumping for one hour at intervals at flow rates of 7, 14, 21 and 28 gpm (or approximately 50%, 100%, 150% and 200% of the proposed permitted withdrawal rate). The water level was allowed to rebound to at least 95% of the static water level prior to initiating the next step. As pumping for the step drawdown test was being performed in well WS-1, water levels were measured in well WS-2 to check for a hydraulic connection between the two wells. After the step drawdown test was completed in WS-1, water levels were allowed to return to the static water level in both wells, and a step drawdown test was performed in WS-2 while monitoring water levels in WS-1 for a response. Graphic plots of the depth to water below top of casing versus time during the step drawdown tests in WS-1 and WS-2 are provided in Appendix B.2.

3.4 5-Day Pumping Test and Recovery Period

In accordance with MassDEP Guidelines, a 5-day pumping test was performed by pumping from wells WS-1 and WS-2 concurrently. The wells were pumped for five days at approximately 133% of the proposed permitted withdrawal rate (or approximately 18.6 gpm).

The 5-day pumping test of the new bedrock wells started on March 9, 2015 at 10:00 AM. Water level readings were recorded with the pressure transducer and supplemented with manual measurements. The pressure transducer recorded water level readings at least every minute for the first ten hours of the test, and then at least every 5 minutes until pumping was terminated at 10:20 AM on March 14, 2015. Manual measurements were recorded hourly by the well driller.

The pumping flow rate was measured hourly by the well driller using the totalizing flow meter and a stopwatch. The flow was adjusted manually during the first 2 hours of the test using the ball valve to throttle the flow until the desired rate of 18.6 gpm was obtained and sustained in each well.

After five days of pumping in both wells, the pumps were shut off at 10:20 AM on March 14, 2015. Recovery water levels in the well were recorded for more than 72 hours after pump shut down using a combination of manual measurements and transducer readings. The data indicate water levels recovered to 95 percent of the pre-test water column in the well

after approximately 5 minutes in well WS-1, and after approximately 30 minutes in well WS-2.

Appendix B.3 includes tabulated hourly water level and flow meter data recorded by the well driller, plus graphic plots of the depth to water versus time in wells WS-1 and WS-2 during the 5 day pumping test and recovery period using a combination of manual and transducer readings. Ambient water levels were corrected for an approximate 1 to 3 foot rise in water levels that occurred due to snow melt between March 10 and 17, 2015.

3.5 Water Quality Sampling and Testing

Sanborn Head completed water quality testing as part of the pumping test. Water samples were analyzed in the field for indicator parameters such as pH, specific conductance, and temperature. Additional water samples were collected for analysis by a Massachusetts Certified Laboratory for the list of analytes in the BRP WS 13 application and the MassDEP approval letter dated April 2, 2014. Appendix D includes the analytical laboratory reports for the water quality sampling and testing on MassDEP reporting forms.

3.5.1 Field Parameters

Sanborn Head personnel performed on-site field measurements of pH, specific conductance, and temperature using a multi-parameter instrument which was calibrated prior to each use. These tests were performed at the beginning of the test, at 24 hour increments after the start of the test, and at the end of the 5-day test. The field measurements are summarized in Table D-1 in Appendix D.

Water samples were collected for laboratory analysis for carbon dioxide on Days 1, 2, 4 and 5 of the pumping test. The analytical results for the carbon dioxide are included in Table D-1 in Appendix D.

3.5.2 Water Sampling Frequency and Laboratory Analyses

Raw well water samples were collected from well WS-1 and WS-2 during the pumping test and the laboratory analyses were conducted in accordance with the BRP WS 13 application and the MassDEP approval letter dated February 16, 2010. Each sample container was labeled, protected and placed in a cooler on ice using Chain of Custody protocol. The samples were hand delivered to the laboratory at Alpha Analytical, Inc. (Alpha) in Westborough, Massachusetts. Radionuclide and synthetic organic compound (SOC) analyses were completed by other Massachusetts Certified Laboratories subcontracted by Alpha.

Water samples were collected from wells WS-1 and WS-2 at the following frequencies and analyzed for the following parameters:

Category of Analytical Parameters	Beginning of Test (Day 1)	Day 2	Day 3	Day 4	End of Test (Day 5)
Field Parameters (Temp, pH, Spec Cond)	X	X	X	X	X
Carbon Dioxide	X	X		X	X
Secondary Contaminants and Nitrate	X		X		X
Total Coliform Bacteria			X		X
Inorganic Chemicals					X
Regulated Volatile Organic Compounds					X
Unregulated Volatile Organic Compounds					X
VOCs with Oxygenates					X
Synthetic Organic Compounds					X
Radionuclides					X
Perchlorate					X

The required list of compounds for each general category of analytical parameters is prescribed in Appendix A of the MassDEP Guidelines. The water samples collected at the beginning of the pumping test were collected approximately one hour after the start of pumping. The water samples collected at the end of the test were collected approximately 120 hours after the start of pumping.

Appendix D includes the laboratory reports for the water quality testing during the pumping test. The data have been tabulated onto the appropriate MassDEP reporting forms.

3.6 Pumping Test Data Evaluation

The following sections present our evaluation of the pumping test data to establish the approved withdrawal rate for the new wells and our evaluation of the water quality data to assess whether water treatment is necessary prior to the water entering the potable water distribution system.

3.6.1 Pumping Test Stabilization Criteria and Approved Withdrawal Rate

According to MassDEP Guidelines, a pumping test is considered stabilized when a semi-logarithmic plot of the time versus drawdown data extrapolated over a 180-day period shows that at least 15 feet of water (or 10% of the water column) remains above the pump, and at least 35 feet of borehole remains below the pump. Appendix B.3 includes semi-logarithmic plots of time versus drawdown data for wells WS-1 and WS-2 for the 5-day pumping test.

For well WS-1 at a pumping rate of 133% of the desired permitted withdrawal rate (about 18.6 gpm), the plot indicates that the estimated drawdown extrapolated to 180 days would be approximately 38 feet below the static water level, or approximately 43 feet below the top of the well casing, or approximately 45.5 feet below the existing ground surface. This results in a water column of approximately 454.5 feet below the stabilization level in the 500 foot deep well.

For well WS-2 at a pumping rate of 133% of the desired permitted withdrawal rate (about 18.6 gpm), the plot indicates that the estimated drawdown extrapolated to 180 days would be approximately 493 feet below the static water level, or approximately 500 feet below the top of the well casing, or approximately 498.5 feet below the existing ground surface. This results in a water column of approximately 201.5 feet below the stabilization level in the 700 foot deep well.

As stated in the MassDEP Guidelines, the maximum approvable well yield shall be the pumping rate at which the well reached stabilization times a safety factor of 0.75. As such, it is our opinion that both wells can be permitted for a withdrawal rate of 19,910 gpd, or a combined withdrawal rate of 39.820 gpd.

3.6.2 Evaluation of Water Quality Data

The results of the water quality testing indicate that the water quality is acceptable for use as a potable water supply. Treatment with a water softener is proposed to reduce hardness and improve the aesthetic quality of the water.

The analytical data forms in Appendix D compare the water quality results with Maximum Contaminant Levels (MCLs) which are the enforceable drinking water standards established by the U.S. Environmental Protection Agency (USEPA) and the Commonwealth of Massachusetts. Secondary Maximum Contaminant Levels (SMCLs) are not enforceable standards, but are used to evaluate the aesthetic quality of the drinking water.

No contaminants were detected at concentrations above enforceable MCLs in wells WS-1 and WS-2. There were no exceedances of the MCLs in wells WS-1 or WS-2 for the following groups of parameters; volatile organic compounds (VOCs), synthetic organic compounds (SOCs), inorganic compounds, perchlorate, nitrate, or radionuclides. Coliform bacteria were absent in all samples collected from wells WS-1 and WS-2. Toluene was detected at the end of the pumping test in wells WS-1 and WS-2 at concentrations of 0.76 and 0.89 micrograms per liter (ug/), respectively, which is well below the MCL of 1,000 ug/l for toluene.

Nitrate was detected in WS-1 at concentrations of 2.6, 2.1 and 1.7 mg/l at the beginning, middle and end of the pumping test which are all below the MCL for nitrate of 10 mg/l. Nitrate was detected in WS-2 at concentrations of 4.1, 2.6 and 2.4 mg/l at the beginning, middle and end of the pumping test which are all below the MCL for nitrate of 10 mg/l.

No secondary contaminants were detected in well WS-1 at concentrations above SMCLs. Iron was detected at a concentration of 0.14 milligrams per liter (mg/l) in the sample collected at the beginning of the pumping test which is below the SMCL of 0.3 mg/l. Iron was not detected above the method detection limit of 0.05 mg/l in the samples collected in the middle and at the end of the 5-day pumping test. Manganese was detected at concentrations of 0.045 and 0.010 mg/l in samples collected at the beginning and middle of the pumping test which are below the SMCL of 0.05 mg/l. Manganese was not detected above the method detection limit of 0.01 mg/l at the end of the pumping test. Hardness was measured as 310, 280 and 270 mg/l in samples collected at the beginning, middle and end of the pumping test. There is no SMCL for hardness.

For secondary contaminants in well WS-2, iron was detected at a concentration of 0.41 milligrams per liter (mg/l) in the sample collected at the beginning of the pumping test which is above the SMCL of 0.3 mg/l. Iron was not detected above the method detection limit of 0.05 mg/l in the samples collected from well WS-2 in the middle and at the end of the pumping test. Manganese was detected at a concentration of 0.075 mg/l in a sample collected at the beginning of the pumping test which is above the SMCL of 0.05 mg/l. Manganese was detected at concentrations of 0.014 and 0.010 mg/l at the middle and end of the pumping test which are below the SMCL of 0.5 mg/l. Hardness was measured as 320, 230 and 210 mg/l in samples collected at the beginning, middle and end of the pumping test. There is no SMCL for hardness. The concentrations of all other secondary contaminants in well WS-2 were below SMCLs.

The pH of raw well water varied during the 5-day pumping test. In wells WS-1 and WS-2, the pH was measured in the laboratory as 6.5 and 6.7 units respectively at the beginning of the pumping test, 6.7 and 7.0 units respectively in the middle of the pumping test, and 6.0 units in both wells at the end of the pumping test. The SMCL for pH is a range of 6.5 to 8.5 units.

3.6.3 Evaluation of Water Level Monitoring in Abutter Wells

The results of water level monitoring in seven private wells abutting the project indicated “no impact” as defined in the Town of Boxborough Comprehensive Permit. Appendix C includes graphic plots of the water level data in the abutter wells before, during and after the 5-day pumping test. Supporting calculations for the impact evaluation are provided for each private well in Appendix C.

There was no discernible impact during the 5-day pumping test to water levels in private wells at 5 of the 7 properties. These included 38, 48, 70, and 90 Whitcomb Road and 45 Hill Road. During the 5-day pumping test, there was an approximate 5 foot drop in water level in the well at 50 Hill Road, and an approximate 6 foot drop in the water level in the well at 187 Hill Road. However, these wells have adequate available water column and have demonstrated a capacity to recover quickly. Using the quantitative criteria in the Comprehensive Permit, the water level data indicate the seven nearby private wells are not impacted as defined in the permit.

4.0 PROPOSED WATER SUPPLY SYSTEM

The following section describes the design of the water supply system. Figure 4 includes a permit level drawing for the proposed water system. Supporting product sheets for submersible well pumps and motors are provided in Appendix D.

4.1 Proposed Well Pump System

For well WS-1, a 25 gpm submersible pump with a 3 horsepower electric motor will be set at a depth of 250 feet below the top of casing. For well WS-2, a 25 gpm submersible pump with a 5 horsepower electric motor will be set at a depth of 650 feet below top of casing. Additional details are provided on Figure 4 on the Well Pump Details for WS-1 and WS-2.

The well pump performance curves and product sheets for the well pumps and electric motors are included in Appendix E.

4.2 Proposed Treatment Equipment and Storage Tank

Raw well water from WS-1 and WS-2 will be piped to the water treatment building as shown on the partial site plan on Figure 4. Raw water from each well will be pumped to separate hydropneumatic pressure tanks, one for each well. The raw well water from both pressure tanks will be combined and flow through a particulate filter, then a resin-type water softener. The water softener will be regenerated by backwashing with a brine solution as necessary. The treated well water will flow to a 2,000-gallon storage tank (day tank) that will store water at atmospheric pressure. The flow of water from the pressure tanks, through the water softener and to the day tank will be controlled by a solenoid valve along the water line to the day tank. Water level sensors will be installed in the day tank; a low water level sensor to open the solenoid valve, and a high water level sensor to close the solenoid valve. A booster pump will transfer water from the 2,000 gallon day tank inside the water treatment building to a 40,000 gallon treated water storage tank outside the building (more than one day of storage at the design flow rate). A pressure-demand hydropneumatic tank and booster pump will transfer finished water from the 40,000 gallon storage tank to the potable water distribution system. Additional details are provided on the water system schematic drawing on Figure 4. Technical information for the water softener will be submitted to MassDEP under separate cover as part of the BRP WS 23A application.

4.3 Proposed Water Sampling Taps

Three water sampling taps are proposed inside the water treatment building as shown on Figure 4. Raw water sampling taps for wells WS-1 and WS-2 are provided as the water lines from each of these wells enter the building. An intermediate sampling tap will be located along the water line between the water softener and the 2,000-gallon day tank. A finished water sampling tap will be located along the main distribution line leaving the water treatment building.

S:\WESDATA\3600\3678.01\Source Files\Pump Test Report\20150518 Beaver Brook Pump Test Rpt.docx

TABLE

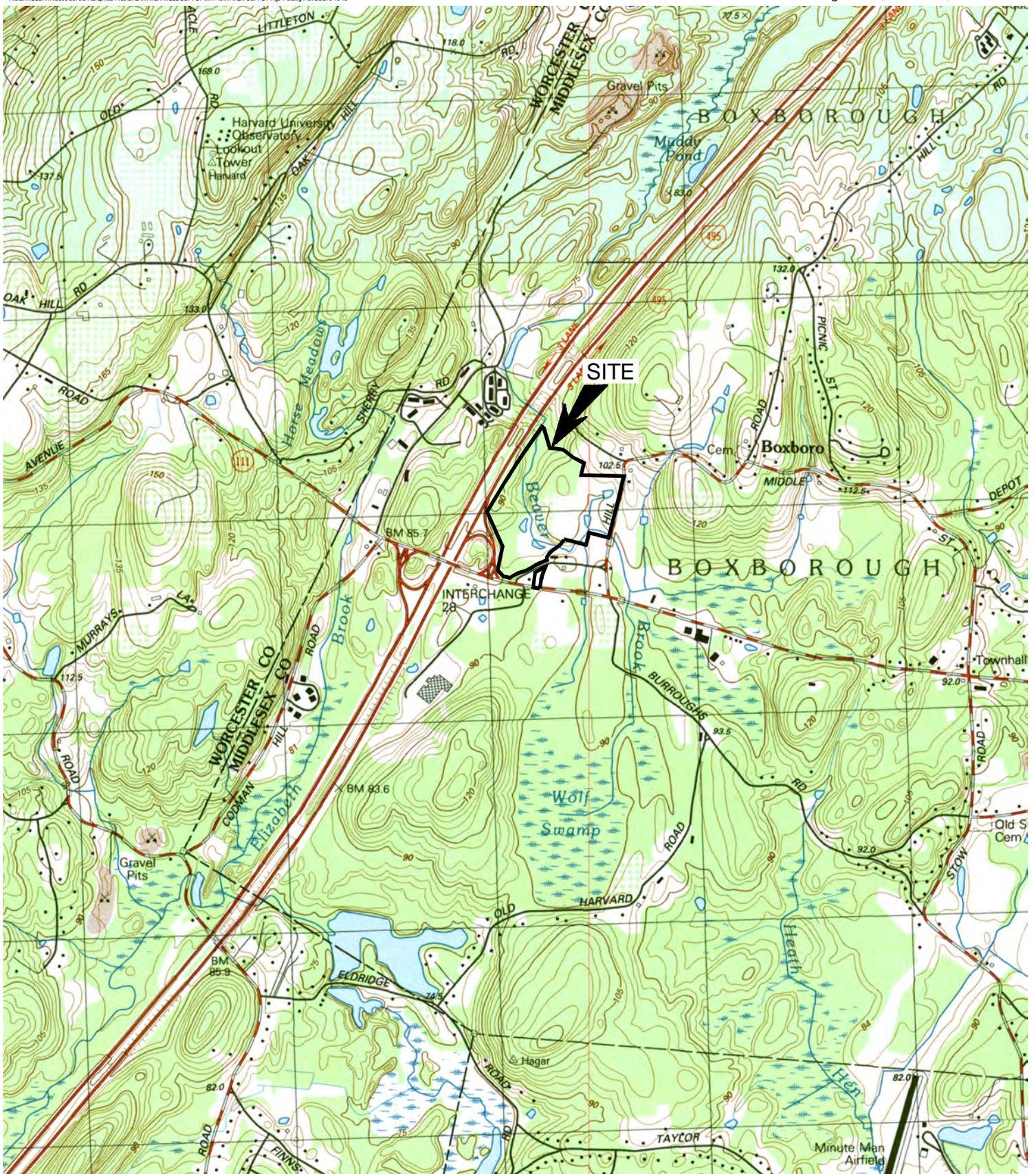
Table 1
Summary of Meteorological Data
Jefferson at Beaver Brook, Boxborough, MA

Date	Max Temperature (°F)	Mean Temperature (°F)	Min Temperature (°F)	Max Sea Level Pressure (in)	Mean Sea Level Pressure (in)	Min Sea Level Pressure (in)	Precipitation (in)	Events
2/20/2015	17	10	3	30.48	30.09	29.78	0	
2/21/2015	32	12	-9	30.56	30.32	30.14	0	Snow
2/22/2015	37	29	21	30.21	30.15	30.09	0	Fog-Snow
2/23/2015	28	16	1	30.36	30.22	30.13	0	
2/24/2015	18	2	-13	30.37	30.19	29.91	0	Snow
2/25/2015	33	18	3	30.04	29.82	29.69	0	Snow
2/26/2015	21	18	15	30.16	30.07	29.96	0	Snow
2/27/2015	25	14	3	30.6	30.38	30.19	0	
2/28/2015	28	12	-4	30.79	30.72	30.61	0	
3/1/2015	27	12	-2	30.74	30.42	30.1	0.02	Snow
3/2/2015	33	28	23	30.27	30.07	29.97	0	Snow
3/3/2015	28	17	6	30.46	30.15	29.82	0.25	Rain-Snow
3/4/2015	42	35	28	29.9	29.78	29.64	0.03	Rain
3/5/2015	37	28	16	30.37	30.12	29.89	0	Snow
3/6/2015	24	14	3	30.56	30.45	30.32	0	
3/7/2015	37	24	10	30.32	30.14	30	0	
3/8/2015	41	29	17	30.15	30.06	29.97	0	Rain-Snow
3/9/2015	45	32	19	30.28	30.15	30.09	0	
3/10/2015	50	34	19	30.37	30.23	30.01	0.03	Rain
3/11/2015	55	45	36	29.99	29.88	29.81	0.01	Fog-Rain
3/12/2015	39	32	24	30.6	30.32	29.98	0	
3/13/2015	39	26	15	30.68	30.57	30.4	0	
3/14/2015	36	32	28	30.38	30.02	29.65	0.64	Rain
3/15/2015	39	34	27	29.92	29.67	29.57	0.06	Fog-Rain-Snow
3/16/2015	46	35	25	29.99	29.9	29.79	0	
3/17/2015	48	37	27	29.78	29.59	29.41	0.17	Rain

Notes:

1. Weather data was downloaded from weatherunderground.com on May 7, 2015 for Hanscom Air Force Base weather station which is located approximately 14 miles from the subject site.

FIGURES



NOTES:
 Base map was taken from the "Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Information Technology Division"
 7.5 minute USGS Quadrangle Maps:
 Hudson, MA, REV: 1988

Drawn By: C.Green
 Designed By: K.Walker
 Reviewed By: V.Kokosa
 Project No: 3678.01
 Date: May 2015

SCALE: 1:25,000

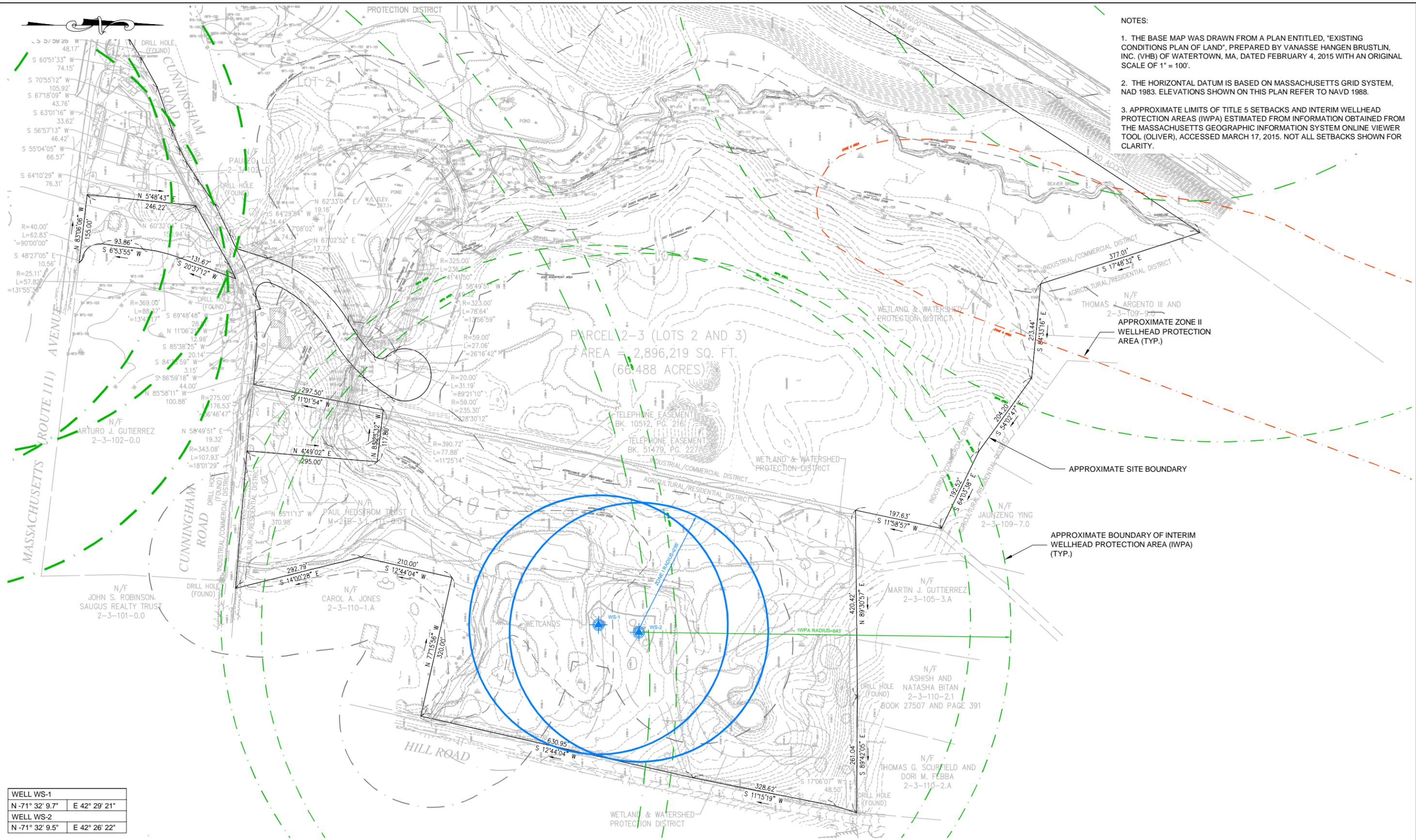


Figure 1

Locus Plan

Jefferson at Beaver Brook
 Boxborough, Massachusetts

- NOTES:
1. THE BASE MAP WAS DRAWN FROM A PLAN ENTITLED, "EXISTING CONDITIONS PLAN OF LAND", PREPARED BY VANASSE HANGEN BRUSTLIN, INC. (VHB) OF WATERTOWN, MA, DATED FEBRUARY 4, 2015 WITH AN ORIGINAL SCALE OF 1" = 100'.
 2. THE HORIZONTAL DATUM IS BASED ON MASSACHUSETTS GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NAVD 1988.
 3. APPROXIMATE LIMITS OF TITLE 5 SETBACKS AND INTERIM WELLHEAD PROTECTION AREAS (IWPA) ESTIMATED FROM INFORMATION OBTAINED FROM THE MASSACHUSETTS GEOGRAPHIC INFORMATION SYSTEM ONLINE VIEWER TOOL (OLIVER), ACCESSED MARCH 17, 2015. NOT ALL SETBACKS SHOWN FOR CLARITY.



PARCEL 2-3 (LOTS 2 AND 3)
 AREA = 2,896,219 SQ. FT.
 (66.488 ACRES)

WELL WS-1	
N -71° 32' 9.7"	E 42° 29' 21"
WELL WS-2	
N -71° 32' 9.5"	E 42° 26' 22"



NO.	DATE	DESCRIPTION	BY

DRAWN BY: C.GREEN
 DESIGNED BY: K.WALKER
 REVIEWED BY: S.SADKOWSKI
 PROJECT MGR: L.NORTON
 PIC: V.KOKOSA
 DATE: MAY 2015

JEFFERSON AT BEAVER BROOK
 BOXBOROUGH, MASSACHUSETTS

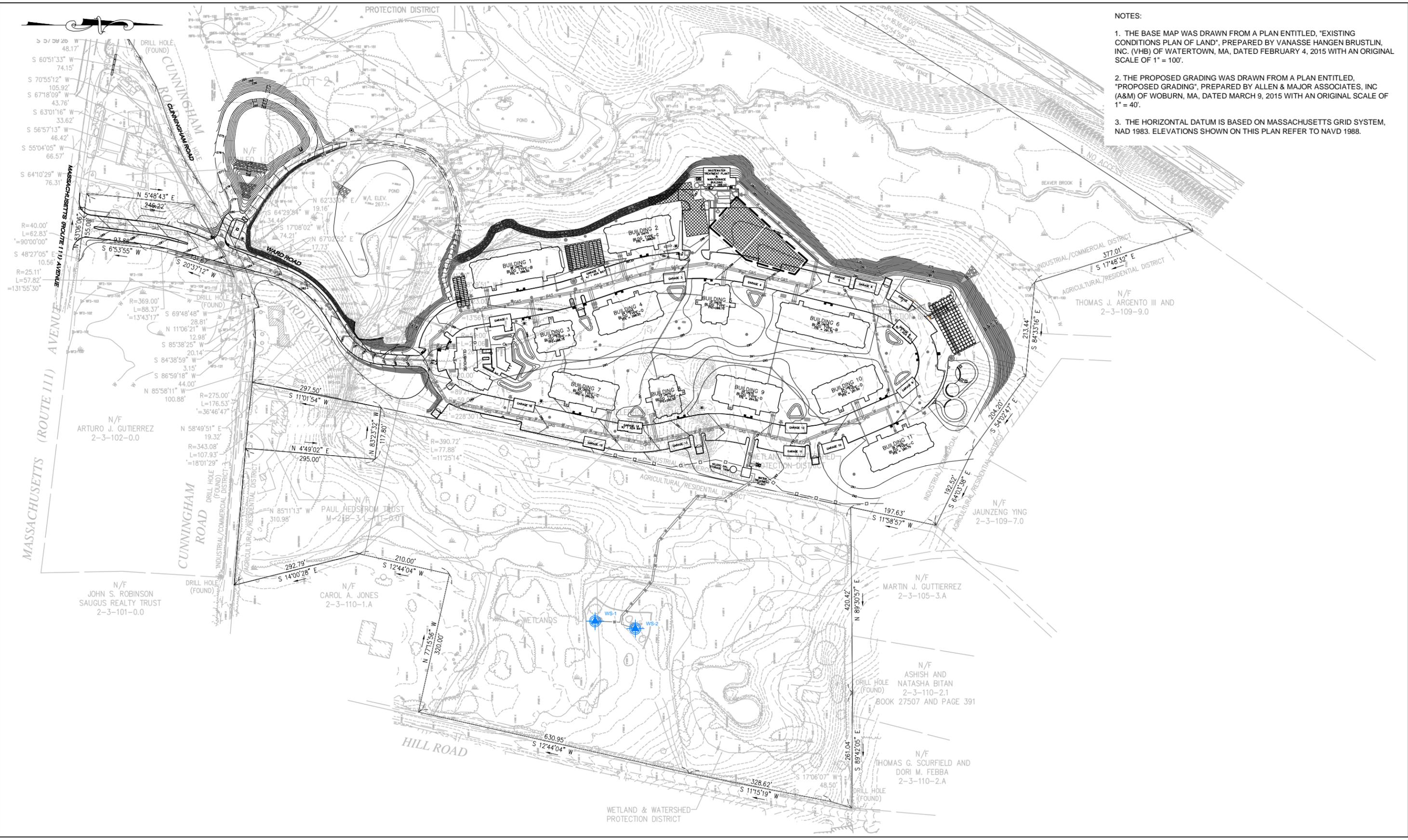
EXISTING CONDITIONS PLAN

PROJECT NUMBER:
 3678.01

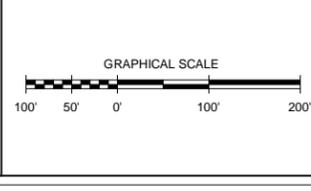
SHEET NUMBER:
 2

FILE: I:\PROJECTS\JEFFERSON AT BEAVER BROOK\EXISTING CONDITIONS PLAN OF LAND\EXISTING CONDITIONS PLAN OF LAND.dwg
 LAYOUT: 20150514
 PLOT DATE: 5/15/15

FILE: W:\PROJECTS\2015\JEFFERSON AT BEAVER BROOK\20150515\20150515.DWG
 LAYOUT: PLOT
 PLOT DATE: 5/15/15
 USER: V.KOKOSA
 TITLE: SITE DEVELOPMENT PLAN
 PROJECT: 3678.01
 SHEET: 3 OF 3
 SCALE: 1" = 40'
 DATE: 5/15/15
 DRAWN BY: C.GREEN
 DESIGNED BY: K.WALKER
 REVIEWED BY: S.SADKOWSKI
 PROJECT MGR: L.NORTON
 PIC: V.KOKOSA
 DATE: MAY 2015



- NOTES:
1. THE BASE MAP WAS DRAWN FROM A PLAN ENTITLED, "EXISTING CONDITIONS PLAN OF LAND", PREPARED BY VANASSE HANGEN BRUSTLIN, INC. (VHB) OF WATERTOWN, MA, DATED FEBRUARY 4, 2015 WITH AN ORIGINAL SCALE OF 1" = 100'.
 2. THE PROPOSED GRADING WAS DRAWN FROM A PLAN ENTITLED, "PROPOSED GRADING", PREPARED BY ALLEN & MAJOR ASSOCIATES, INC (A&M) OF WOBURN, MA, DATED MARCH 9, 2015 WITH AN ORIGINAL SCALE OF 1" = 40'.
 3. THE HORIZONTAL DATUM IS BASED ON MASSACHUSETTS GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN ON THIS PLAN REFER TO NAVD 1988.



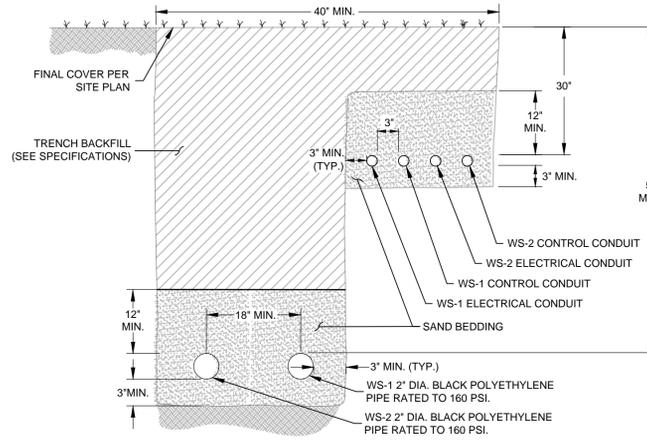
NO.	DATE	DESCRIPTION	BY

DRAWN BY: C.GREEN
 DESIGNED BY: K.WALKER
 REVIEWED BY: S.SADKOWSKI
 PROJECT MGR: L.NORTON
 PIC: V.KOKOSA
 DATE: MAY 2015

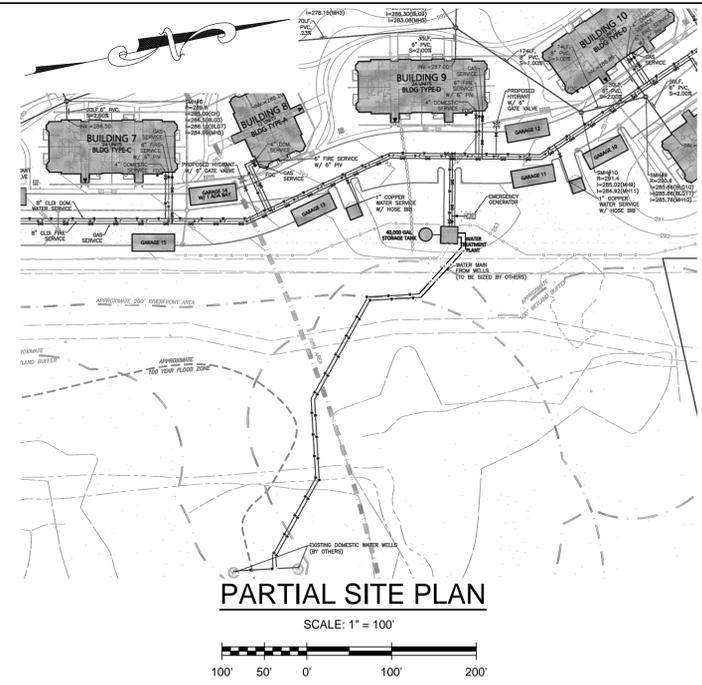
JEFFERSON AT BEAVER BROOK
 BOXBOROUGH, MASSACHUSETTS
SITE DEVELOPMENT PLAN
 PROJECT NUMBER: 3678.01
 SHEET NUMBER: 3

NOTES:

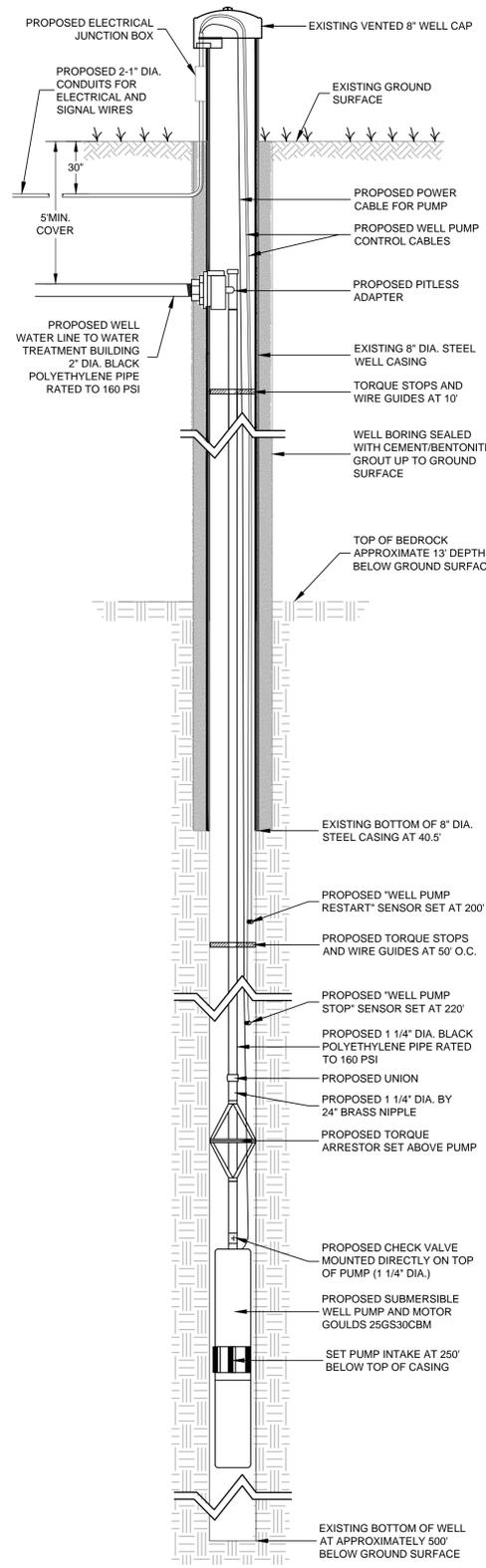
- 1) THE WATER SUPPLY WELL HAS BEEN PREVIOUSLY DRILLED AND INSTALLED BY A MASSACHUSETTS LICENSED WELL DRILLER RETAINED BY THE OWNER.
- 2) THE CONTRACTOR'S SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO, ALL LABOR, EQUIPMENT AND MATERIALS TO INSTALL THE SUBMERSIBLE WELL PUMP, PITLESS ADAPTER, CHECK VALVES, TORQUE ARRESTOR, LOW WATER LEVEL SENSOR, AND RELATED APPURTENANCES IN THE WELL. THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL THE WELL WATER LINE, PUMP ELECTRICAL POWER LINE, LOW WATER LEVEL SIGNAL CABLE, AND RELATED WIRING AND CONDUIT, FROM THE WELL LOCATION TO THE WATER TREATMENT BUILDING. THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL IN THE WATER TREATMENT BUILDING, THE WELL PUMP CONTROLS, AND ALL PUMPS, TANKS, PIPING AND WATER TREATMENT EQUIPMENT AS SHOWN HEREON AND ON THE MECHANICAL DRAWINGS.
- 3) THE OWNER'S ENGINEER SHALL OBTAIN THE BRP WS 13, BRP WS 15 AND BRP WS 23A PERMITS AND APPROVALS FROM MASSACHUSETTS DEP FOR A PUBLIC WATER SUPPLY WELL. AFTER INSTALLATION AND DISINFECTION OF THE WELL WATER DISTRIBUTION SYSTEM BY THE CONTRACTOR, THE CONTRACTOR SHALL ALLOW TIME FOR MASSACHUSETTS DEP TO MAKE A FINAL INSPECTION OF THE COMPLETED SYSTEM AND ISSUE WRITTEN APPROVAL TO OPERATE THE PUBLIC WATER SUPPLY AND DISTRIBUTION SYSTEM.
- 4) ALL ELECTRICAL EQUIPMENT SHALL BE CONNECTED TO THE SUPPLY GROUND. FOLLOW ALL APPLICABLE CODE REQUIREMENTS.
- 5) THE WELL AND POTABLE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED AFTER INSTALLATION AND PRIOR TO FIRST USE IN ACCORDANCE WITH AWWA SPECIFICATION C651. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE DISINFECTION WORK TO THE OWNER'S REPRESENTATIVE.



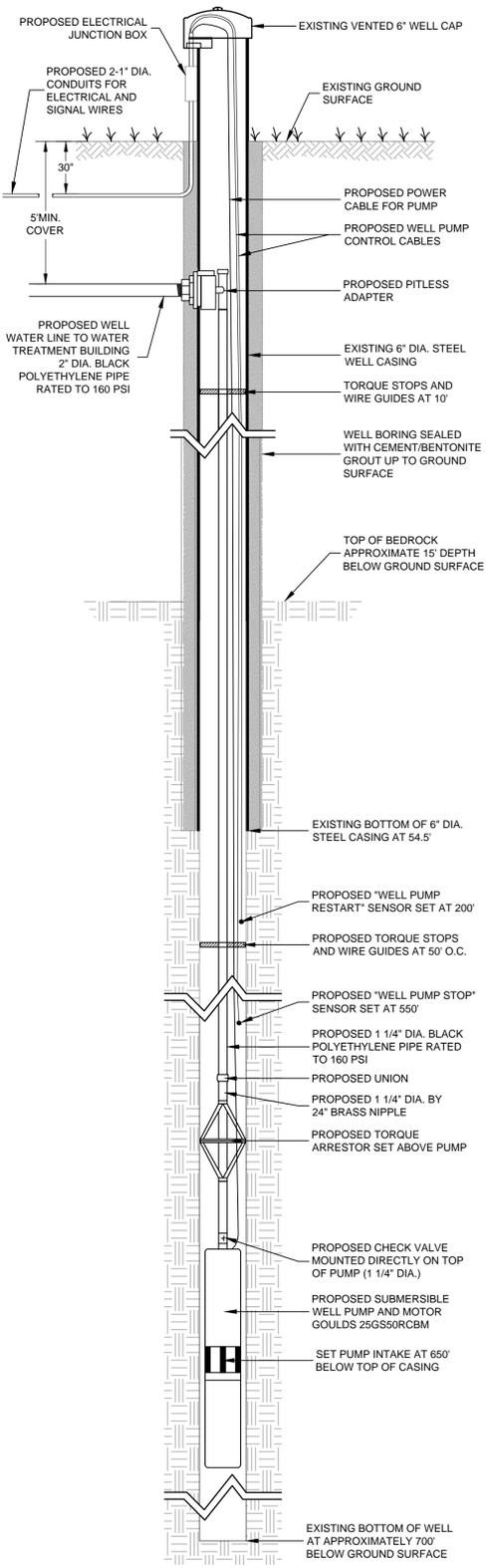
WATER PIPE TRENCH DETAIL
NOT TO SCALE



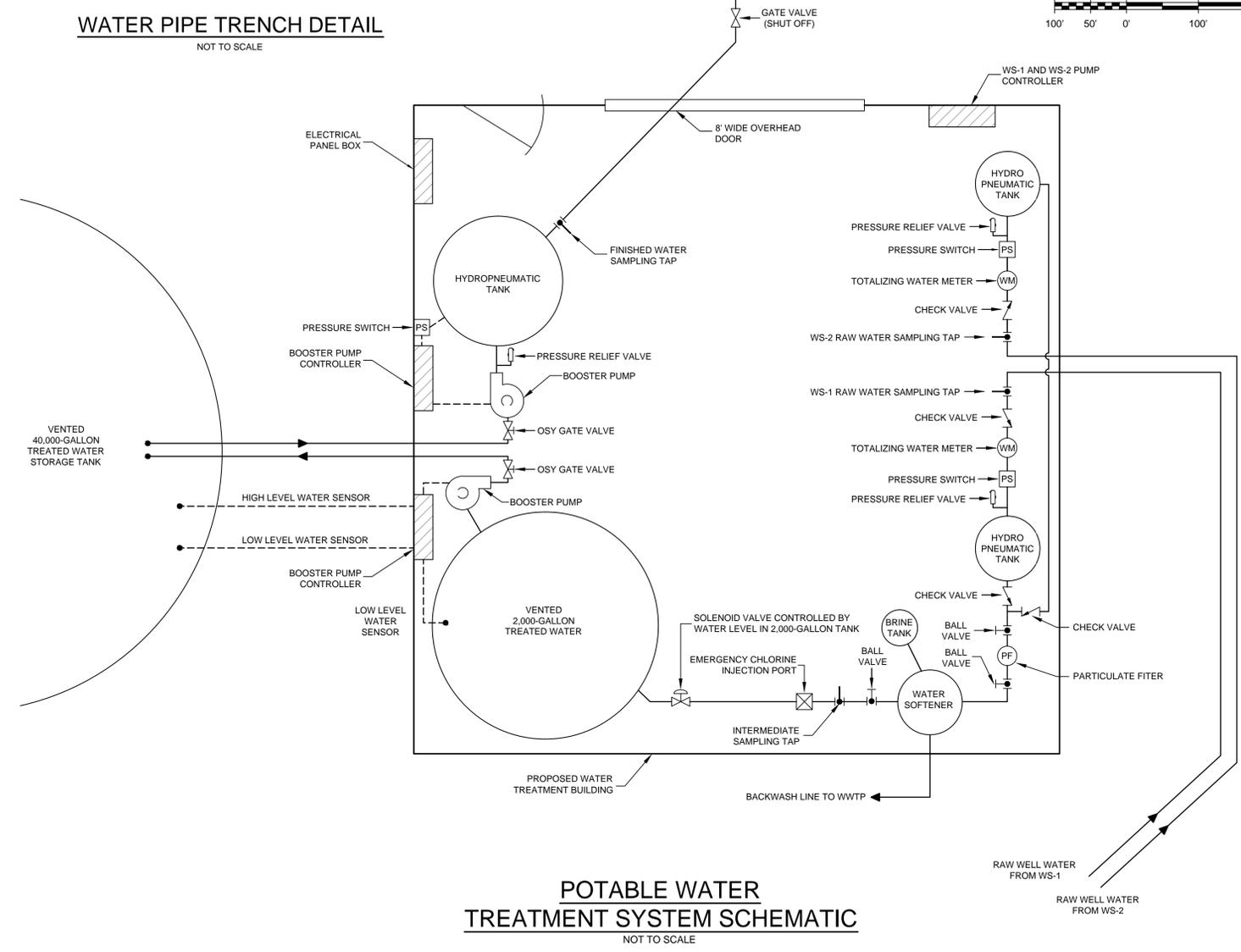
PARTIAL SITE PLAN
SCALE: 1" = 100'



WS-1 WELL PUMP DETAIL
NOT TO SCALE



WS-2 WELL PUMP DETAIL
NOT TO SCALE



POTABLE WATER TREATMENT SYSTEM SCHEMATIC
NOT TO SCALE



GRAPHICAL SCALE AS SHOWN

NO.	DATE	DESCRIPTION	BY

DRAWN BY: C.GREEN
 DESIGNED BY: K.WALKER
 REVIEWED BY: S.SADKOWSKI
 PROJECT MGR: L.NORTON
 PIC: V.KOKOSA
 DATE: MAY 2015

JEFFERSON AT BEAVER BROOK
 BOXBOROUGH, MASSACHUSETTS
POTABLE WELL WATER SYSTEM

PROJECT NUMBER: 3678.01
 SHEET NUMBER: 4

APPENDIX A
WELL COMPLETION REPORTS



Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

WS-1

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

Username: **SKILLINGSWELL**

Transaction ID: **726558**

Document: **Well Driller**

Size of File: **254.72K**

Status of Transaction: **In Process**

Date and Time Created: **3/19/2015:3:50:45 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

WS-1

In public right-of-way:

Yes No

Subdivision/Property/Description:

Property Owner:

Engineering Firm:

TDI REAL ESTATE ACQUISITION

Address at well location:

Street Number: 000
Street Name: HILL ROAD
Building Lot#:
Assessor's Map #:
Assessor's Lot#:
ZIP Code: 01719

City/Town:
BOXBOROUGH

GPS
North: 42.48920
West: 71.53606

Mailing Address:

click here if same as well location address

Street Number: 3
Street Name: WEST MAIN ST
City/Town: IRVINGTON
State: NEW YORK
ZIP Code: 10533

Board of health permit obtained:

Yes Not Required

Permit Number:
Date Issued:



Well Driller - General Well Form

DRILLING METHOD

Overburden Mud Rotary	Bedrock 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 fluid
0	13	Clay	Bluish Gray		<input checked="" type="radio"/> YES <input type="radio"/> NO	<input checked="" type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input checked="" type="radio"/> Add

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
13	100	Granite		<input checked="" type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input checked="" type="radio"/> Slow	<input type="radio"/> Loss <input checked="" type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
100	200	Granite		<input checked="" type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input checked="" type="radio"/> Slow	<input type="radio"/> Loss <input checked="" type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
200	300	Granite		<input checked="" type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input checked="" type="radio"/> Slow	<input type="radio"/> Loss <input checked="" type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
300	400	Granite		<input checked="" type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input checked="" type="radio"/> Slow	<input type="radio"/> Loss <input checked="" type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
400	500	Granite		<input checked="" type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input checked="" type="radio"/> Slow	<input type="radio"/> Loss <input checked="" type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye

ADDITIONAL WELL INFORMATION

Developed	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Disinfected	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Total Well Depth	500	Depth to Bedrock	13
Surface Seal Type	Cement/Bentonite	Fracture Enhancement	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

CASING	<input checked="" type="checkbox"/> Is Casing above ground?	From:	1.50	To:	0	Diameter	8	Driveshoe	<input checked="" type="checkbox"/> Yes
From	To	Type	Thickness						
0	40.50	Steel	Schedule 40						

SCREEN	<input checked="" type="checkbox"/> No Screen	From	To	Type	Slot Size	Diameter



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

WATER-BEARING ZONES DRY WELL

From	To	Yield (gpm)
65	70	2
88	90	2
95	100	10

PERMANENT PUMP (IF AVAILABLE)

Pump Description:
 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	40.50	Cement/Bentonite Grout	50	Choose Material			3	Tremie

WELL TEST DATA

Date	Method	Yield (gpm)	Time Pumped (HH:MM)	Pumping Level (ft BGS)	Time To Recover (HH:MM)	Recovery (ft BGS)
11-4-14	Air Blow With Drill Stem	30	00:10	500	00:24	494
3-9-15	Constant Rate Pump	18.6	01:20	40.4	00:20	20.7

WATER LEVEL

Date Measured:
 Static Depth BGS (ft):
 Flowing Rate (gpm):

COMMENTS



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

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	RICK SMART	Registration #	546	Monitoring [M]	Supervising Driller Signature	SKILLING ROGER, B
Firm	SONS, INC.	Rig Permit #	394		Date Job Complete	12/8/2014

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.

WS-2

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

Username: **SKILLINGSWELL**

Transaction ID: **725934**

Document: **Well Driller**

Size of File: **275.84K**

Status of Transaction: **Submitted**

Date and Time Created: **3/19/2015:4:24:58 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

WS-2

In public right-of-way:

Yes No

Subdivision/Property/Description:

Property Owner:

Engineering Firm:

TDI REAL ESTATE ACQUISITION

Address at well location:

Street Number: 000
Street Name: HILL ROAD
Building Lot#: Assessor's Map #:
Assessor's Lot#: ZIP Code:
01719

City/Town:

BOXBOROUGH

GPS

North: 42.48926
West: 71.53603

Mailing Address:

click here if same as well location address

Street Number: 3
Street Name: WEST MAIN ST SUITE 203
City/Town: IRVINGTON
State: NEW YORK
ZIP Code: 10533

Board of health permit obtained:

Yes Not Required

Permit Number: Date Issued:



Well Driller - General Well Form

DRILLING METHOD

Overburden	Bedrock
<input type="text" value="Air Hammer"/>	<input type="text" value="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 fluid
<input type="text" value="0"/>	<input type="text" value="10"/>	<input type="text" value="Gravel"/>	<input type="text" value="Brown"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addi
<input type="text" value="10"/>	<input type="text" value="15"/>	<input type="text" value="Clay"/>	<input type="text" value="Bluish Gray"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addi

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
<input type="text" value="15"/>	<input type="text" value="100"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
<input type="text" value="100"/>	<input type="text" value="200"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
<input type="text" value="200"/>	<input type="text" value="300"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
<input type="text" value="300"/>	<input type="text" value="400"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
<input type="text" value="400"/>	<input type="text" value="500"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
<input type="text" value="500"/>	<input type="text" value="600"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye
<input type="text" value="600"/>	<input type="text" value="700"/>	<input type="text" value="Granite"/>	<input type="text"/>	<input checked="" type="radio"/> YES <input type="radio"/> NO	<input type="radio"/> Fast <input type="radio"/> Slow	<input type="radio"/> Loss <input type="radio"/> Addition	<input type="checkbox"/> Yes	<input type="checkbox"/> Ye

ADDITIONAL WELL INFORMATION

Developed	<input type="radio"/> Yes <input checked="" type="radio"/> No	Disinfected	<input checked="" type="radio"/> Yes <input type="radio"/> No
Total Well Depth	700	Depth to Bedrock	15
Surface Seal Type	<input type="text" value="Cement"/>	Fracture Enhancement	<input type="radio"/> Yes <input checked="" type="radio"/> No

CASING	<input checked="" type="checkbox"/> Is Casing above ground?	From:	1.50	To:	0	Diameter	Driveshoe
From	To	Type	Thickness				



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

0 54.50 Steel Schedule 40 6 Yes

SCREEN No Screen

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

WATER-BEARING ZONES DRY WELL

From	To	Yield (gpm)
135	138	2
270	280	10

PERMANENT PUMP (IF AVAILABLE)

Pump Description 3 Wire Constant Speed Submersible Horsepower 5
Pump Intake Depth (ft) 650 Nominal Pump Capacity (gpm) 33

ANNULAR SEAL / FILTER PACK

From	To	Material 1	Weight	Material 2	Weight	Water (gal)	Batches (count)	Method Of Placement
0	54.50	Cement/Bentonite Grout	50	Choose Material			3	Tremie

WELL TEST DATA

Date	Method	Yield (gpm)	Time Pumped (HH:MM)	Pumping Level (ft BGS)	Time To Recover (HH:MM)	Recovery (ft BGS)
10-17-14	Air Blow With Drill Stem	12	00:10	700	24:00	693
3-9-15	Constant Rate Pump	18.6	120:00	344.8	00:20	191.8

WATER LEVEL

Date Measured Static Depth BGS (ft) Flowing Rate (gpm)
10/8/14 6.93



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

COMMENTS

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	RICK SMART	Registration #	546	Monitoring [M]	Supervising Driller	SKILLING
	SKILLINGS AND				Signature	ROGER, B
Firm	SONS, INC.	Rig Permit #	394		Date Job Complete	10/17/2014

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

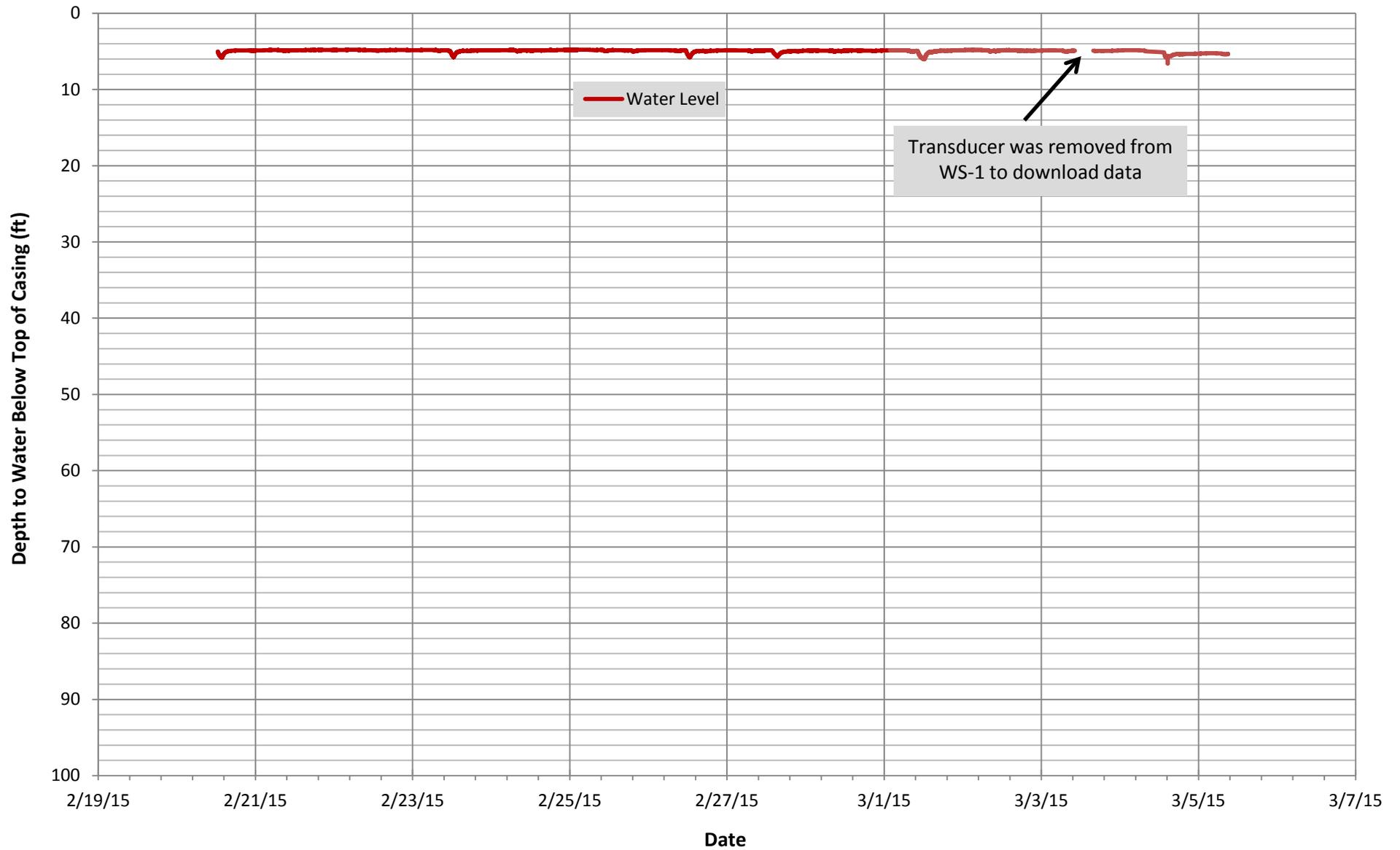
APPENDIX B

PUMPING TEST DATA FOR WELLS WS-1 AND WS-2

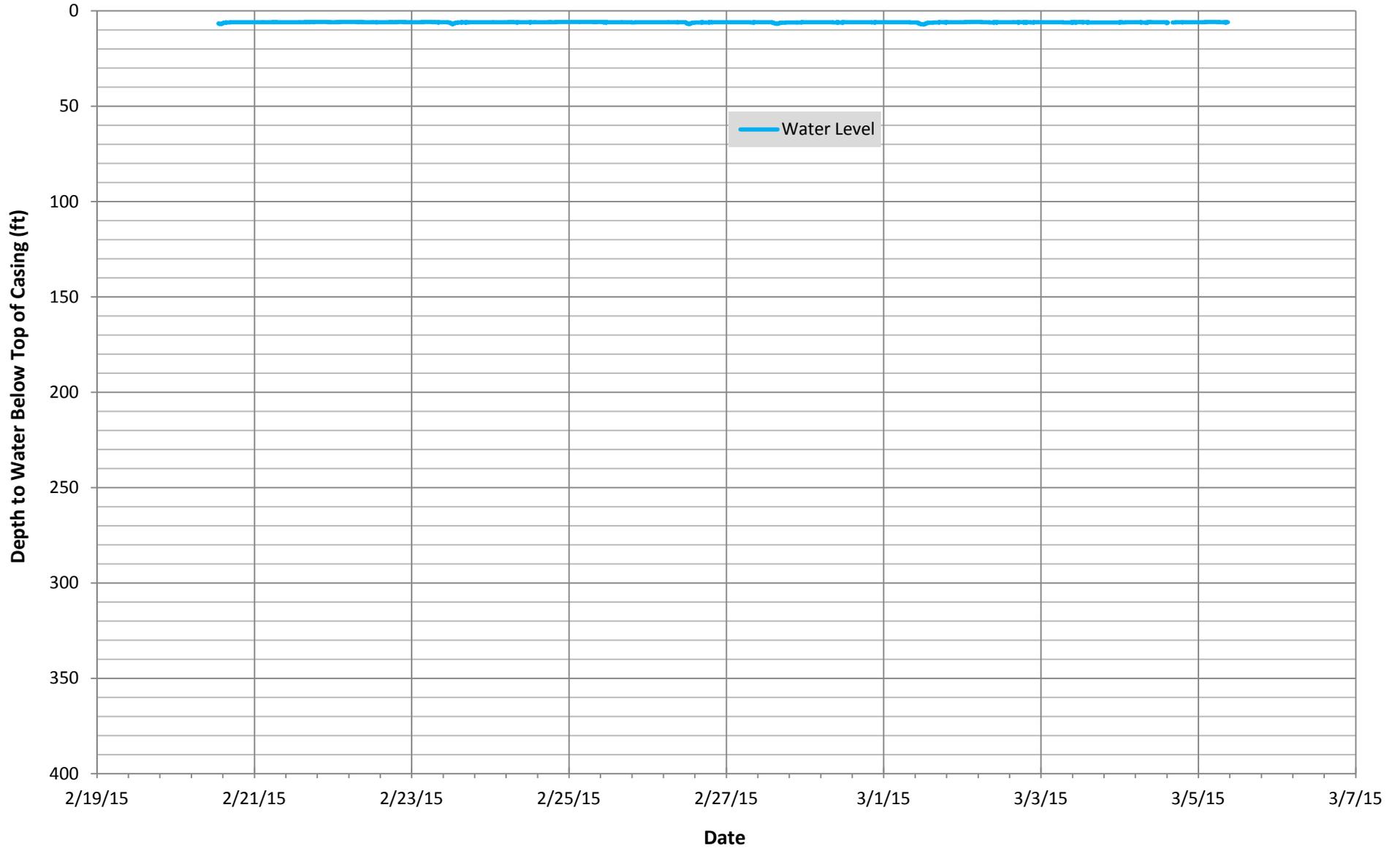
APPENDIX B.1

AMBIENT WATER LEVEL DATA PRIOR TO PUMPING TEST

Bedrock Well WS-1
Pre-Test Water Level Data
Jefferson at Beaver Brook, Boxborough, MA

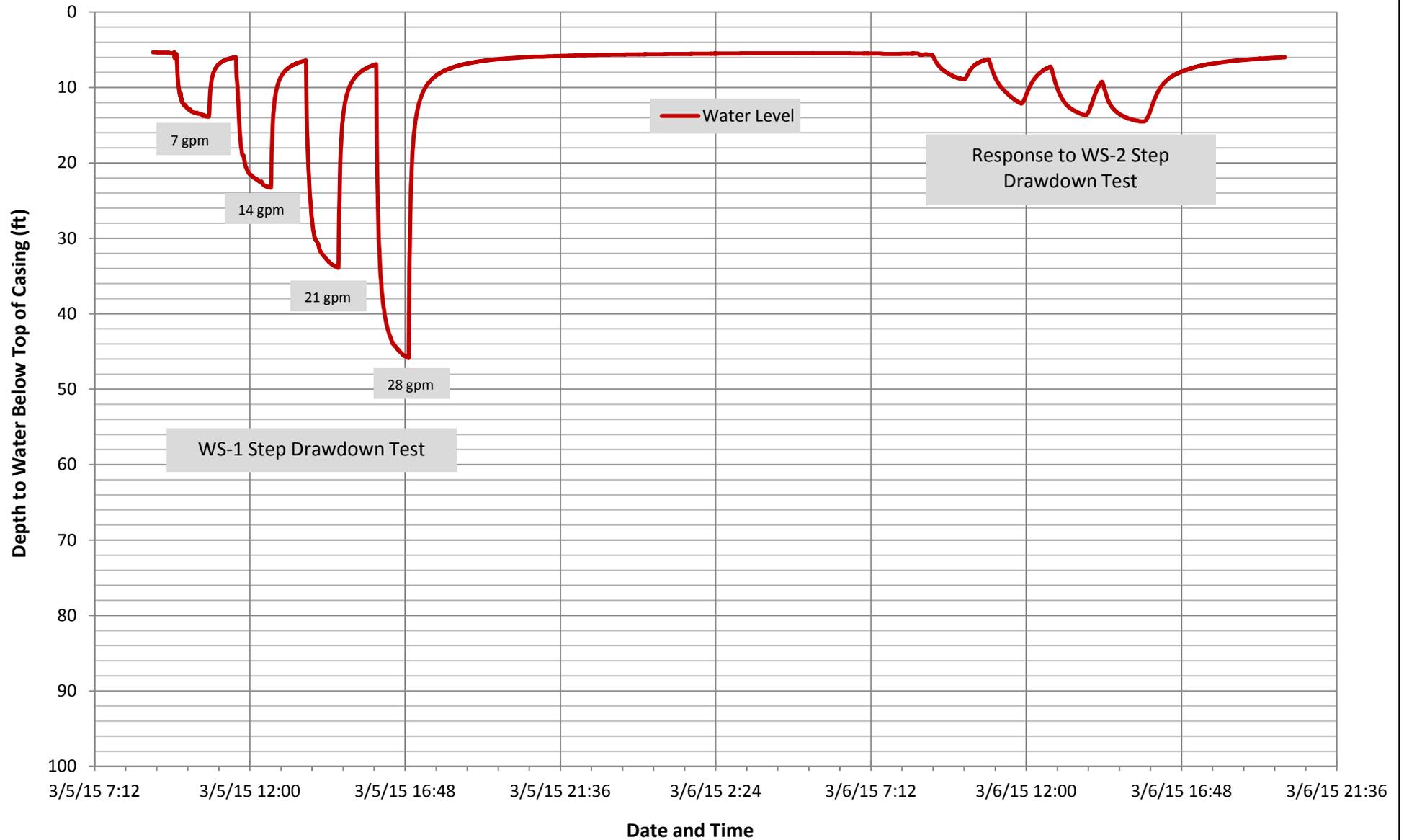


Bedrock Well WS-2
Pre-Test Water Level Data
Jefferson at Beaver Brook, Boxborough, MA

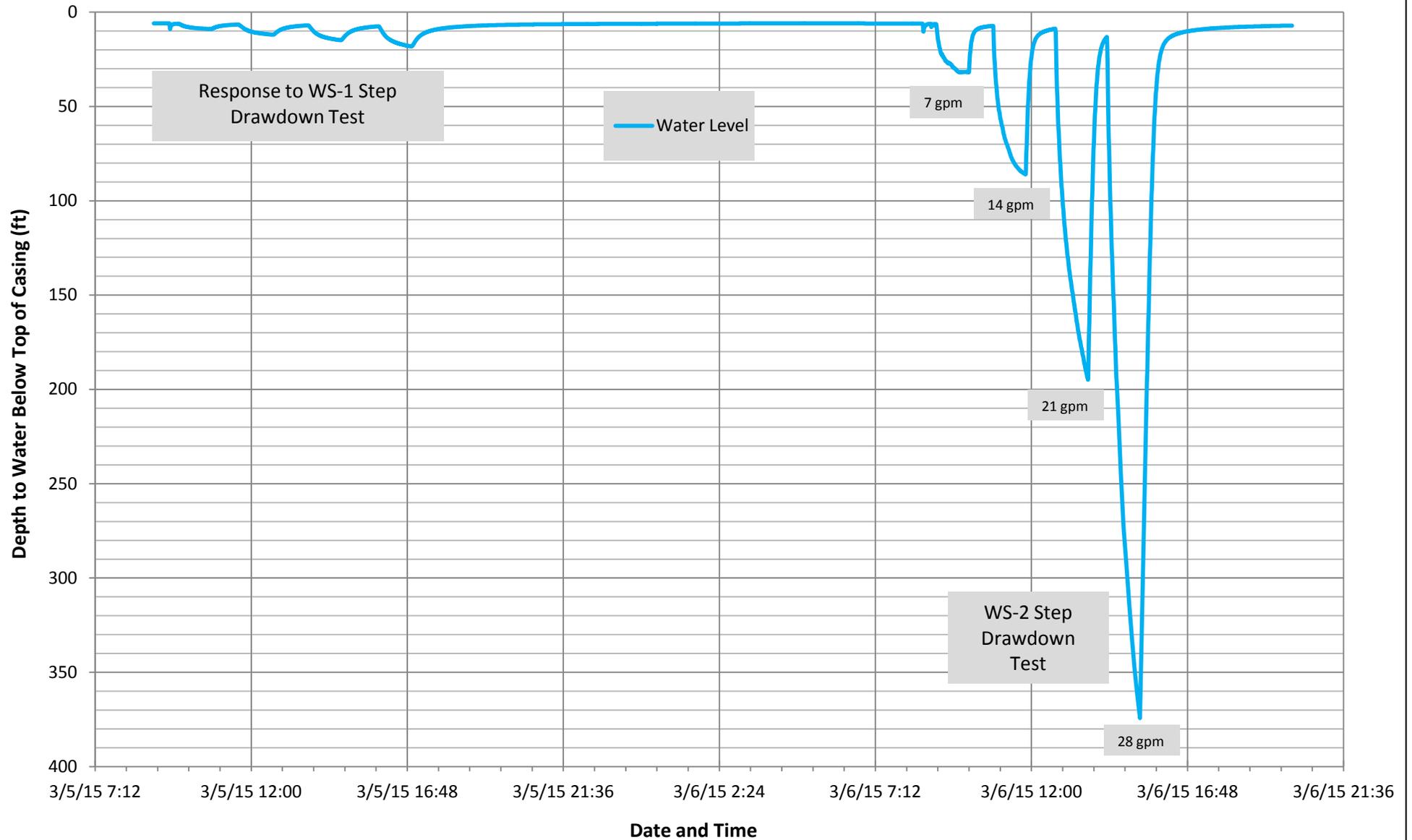


APPENDIX B.2
STEP DRAWDOWN PUMPING TEST DATA

Bedrock Well WS-1
Step Drawdown Test
Jefferson at Beaver Brook, Boxborough, MA



Bedrock Well WS-2
Step Drawdown Test
Jefferson at Beaver Brook, Boxborough, MA



APPENDIX B.3

5-DAY PUMPING TEST AND RECOVERY DATA

Well WS-1
Summary of 5-Day Pump Test
Jefferson at Beaver Brook, Boxborough, MA

Date	Time	Elapsed Time			Flow Rate GPM	Water Level Below TOC
		Minutes	Hours	Days		
3/9/2015	10:00	0	0.00	0.00	19.40	5.05
	10:01	1	0.02	0.00		10.77
	10:02	2	0.03	0.00		14.67
	10:03	3	0.05	0.00		16.14
	10:04	4	0.07	0.00		17.81
	10:05	5	0.08	0.00		19.33
	10:10	10	0.17	0.01	19.40	24.39
	10:15	15	0.25	0.01	19.60	27.53
	10:20	20	0.33	0.01	18.60	29.54
	10:25	25	0.42	0.02	18.60	30.31
	10:30	30	0.50	0.02	18.60	31.22
	10:35	35	0.58	0.02	18.80	31.99
	10:40	40	0.67	0.03	18.60	32.64
	10:45	45	0.75	0.03	18.60	33.18
	10:50	50	0.83	0.03	18.60	33.66
	10:55	55	0.92	0.04	18.60	34.07
	11:00	60	1.00	0.04	18.80	34.43
	11:05	65	1.08	0.05	18.20	34.76
	11:10	70	1.17	0.05	18.80	35.06
	11:15	75	1.25	0.05	18.00	35.35
	11:20	80	1.33	0.06	20.00	35.66
	11:25	85	1.42	0.06	17.60	35.90
	11:30	90	1.50	0.06	18.40	36.04
	11:35	95	1.58	0.07	18.60	36.49
	11:40	100	1.67	0.07	18.80	36.75
	11:45	105	1.75	0.07	18.60	36.99
	11:50	110	1.83	0.08	17.40	37.20
	11:55	115	1.92	0.08	20.00	37.40
	12:00	120	2.00	0.08	18.60	37.57
	13:00	180	3.00	0.13	18.68	38.62
	14:00	240	4.00	0.17	18.73	39.04
	15:00	300	5.00	0.21	18.67	39.38
	16:00	360	6.00	0.25	18.92	40.03
	17:00	420	7.00	0.29	18.93	40.18
	18:00	480	8.00	0.33	18.93	40.34
	19:00	540	9.00	0.38	18.95	40.49
	20:00	600	10.00	0.42	19.10	40.81
	21:00	660	11.00	0.46	19.15	40.91
	22:00	720	12.00	0.50	19.10	40.98
	23:00	780	13.00	0.54	19.12	41.02
3/10/2015	0:00	840	14.00	0.58	19.10	41.08
	1:00	900	15.00	0.63	19.50	41.69
	2:00	960	16.00	0.67	19.57	41.73
	3:00	1020	17.00	0.71	19.52	41.79
	4:00	1080	18.00	0.75	19.03	41.05
	5:00	1140	19.00	0.79	19.02	40.02
	6:00	1200	20.00	0.83	18.98	40.90
	7:00	1260	21.00	0.88	18.83	40.82
	8:00	1320	22.00	0.92	18.85	40.90
	9:00	1380	23.00	0.96	18.80	40.74
	10:00	1440	24.00	1.00	18.77	40.84
	11:00	1500	25.00	1.04	18.78	40.83
	12:00	1560	26.00	1.08	18.80	40.88
	13:00	1620	27.00	1.13	18.82	40.92
	14:00	1680	28.00	1.17	18.87	40.99

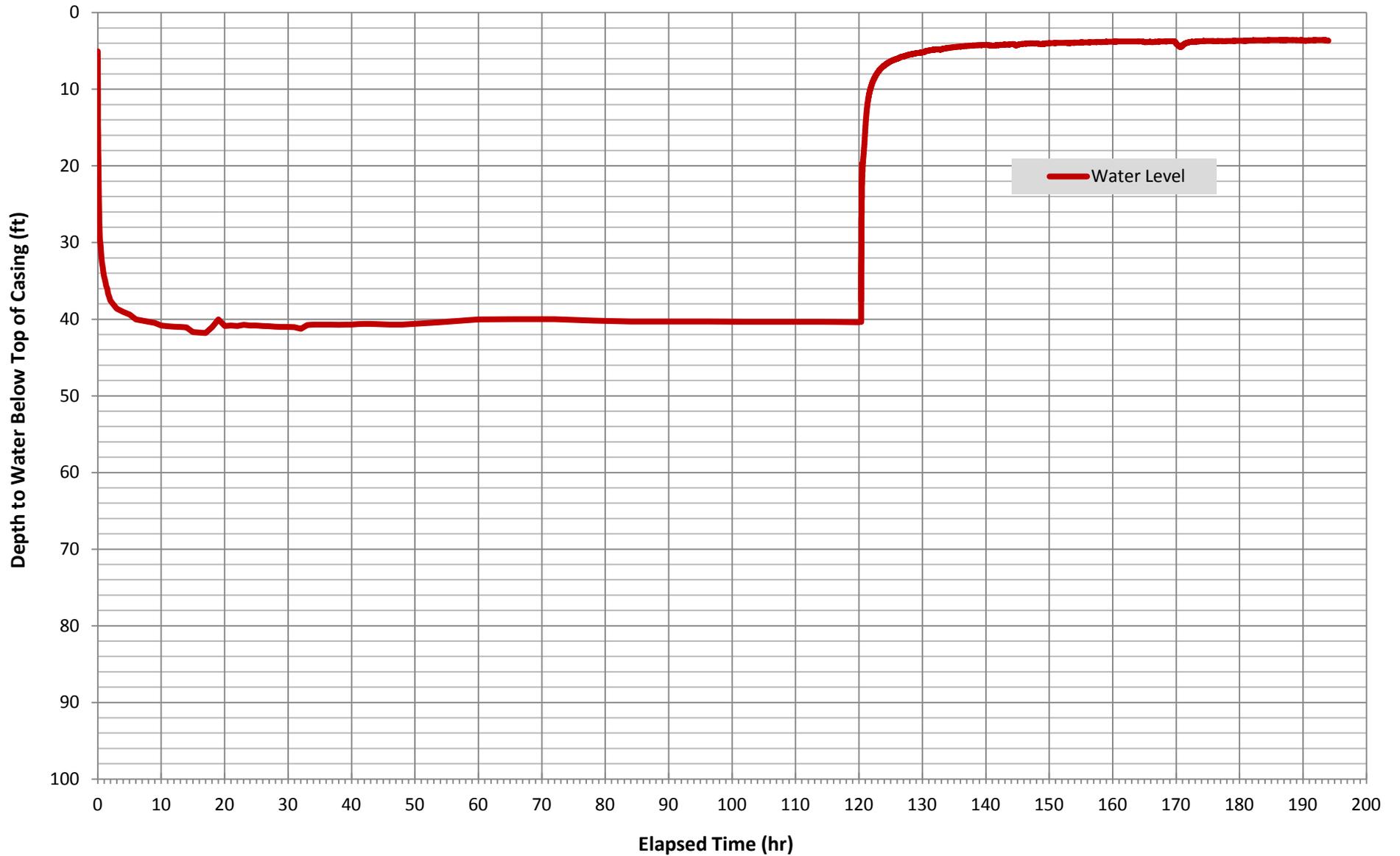
Well WS-1
Summary of 5-Day Pump Test
Jefferson at Beaver Brook, Boxborough, MA

Date	Time	Elapsed Time			Flow Rate GPM	Water Level Below TOC
		Minutes	Hours	Days		
	15:00	1740	29.00	1.21	18.88	41.00
	16:00	1800	30.00	1.25	18.90	41.01
	17:00	1860	31.00	1.29	18.90	41.03
	18:00	1920	32.00	1.33	19.03	41.24
	19:00	1980	33.00	1.38	18.77	40.75
	20:00	2040	34.00	1.42	18.75	40.71
	21:00	2100	35.00	1.46	18.75	40.71
	22:00	2160	36.00	1.50	18.75	40.69
	23:00	2220	37.00	1.54	18.73	40.69
3/11/2015	0:00	2280	38.00	1.58	18.73	40.73
	1:00	2340	39.00	1.63	18.73	40.71
	2:00	2400	40.00	1.67	18.72	40.70
	3:00	2460	41.00	1.71	18.72	40.63
	4:00	2520	42.00	1.75	18.70	40.60
	5:00	2580	43.00	1.79	18.67	40.61
	6:00	2640	44.00	1.83	18.73	40.65
	7:00	2700	45.00	1.88	18.73	40.66
	8:00	2760	46.00	1.92	19.17	40.69
	9:00	2820	47.00	1.96	18.03	40.70
	10:00	2880	48.00	2.00	19.30	40.70
	16:00	3240	54.00	2.25	18.63	40.40
	22:00	3600	60.00	2.50	18.58	40.02
3/12/2015	4:00	3960	66.00	2.75	18.62	40.00
	10:00	4320	72.00	3.00	18.04	40.00
	16:00	4680	78.00	3.25	18.69	40.19
	22:00	5040	84.00	3.50	18.67	40.32
3/13/2015	4:00	5400	90.00	3.75	18.63	40.31
	10:00	5760	96.00	4.00	18.61	40.31
	16:00	6120	102.00	4.25	18.61	40.35
	22:00	6480	108.00	4.50	18.61	40.34
3/14/2015	4:00	6840	114.00	4.75	18.57	40.35
	10:00	7200	120.00	5.00	18.54	40.40
			0.00	0.00		
Recovery	10:20	7220	120.33	5.01	0.00	40.38
	10:21	7221	120.35	5.01	0.00	34.65
	10:22	7222	120.37	5.02	0.00	31.28
	10:23	7223	120.38	5.02	0.00	28.95
	10:24	7224	120.40	5.02	0.00	27.19
	10:25	7225	120.42	5.02	0.00	25.93
	10:30	7226	120.43	5.02	0.00	22.35
	10:35	7227	120.45	5.02	0.00	20.69
	10:40	7228	120.47	5.02	0.00	19.68

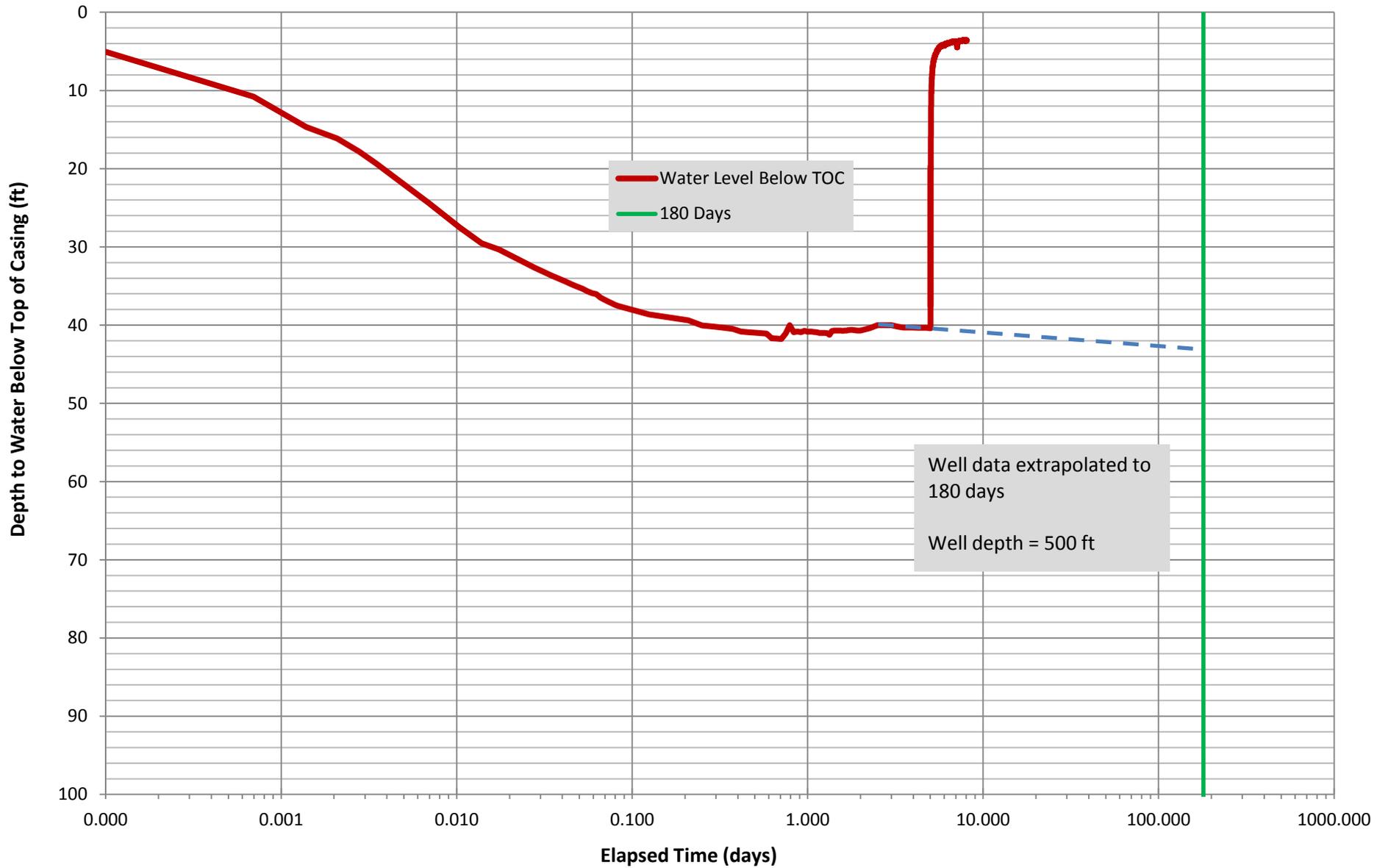
Notes:

1. Depth to water and flow rate readings were collected on the date and times indicated by Skillings & Sons, Inc. of Amherst, New Hampshire.
2. Abbreviations:
TOC = top of casing
GPM = gallons per minute

Bedrock Well WS-1
Five Day Pumping Test at 18.6 gpm
Jefferson at Beaver Brook, Boxborough, MA
Based on Well Driller Water Level Readings



Bedrock Well WS-1
Five Day Pumping Test at 18.6 gpm
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



Well WS-2
Summary of 5-Day Pump Test
Jefferson at Beaver Brook, Boxborough, MA

Date	Time	Elapsed Time			Flow Rate GPM	Water Level Below TOC
		Minutes	Hours	Days		
3/9/2015	10:00	0	0.00	0.00	19.40	6.86
	10:01	1	0.02	0.00	19.40	29.29
	10:02	2	0.03	0.00	19.40	32.84
	10:03	3	0.05	0.00	19.40	41.97
	10:04	4	0.07	0.00	19.40	50.29
	10:05	5	0.08	0.00	19.40	58.40
	10:10	10	0.17	0.01	20.00	84.18
	10:15	15	0.25	0.01	20.00	104.12
	10:20	20	0.33	0.01	18.60	118.61
	10:25	25	0.42	0.02	17.60	127.24
	10:30	30	0.50	0.02	19.20	135.53
	10:35	35	0.58	0.02	18.80	138.94
	10:40	40	0.67	0.03	18.20	140.98
	10:45	45	0.75	0.03	17.80	144.52
	10:50	50	0.83	0.03	18.40	148.29
	10:55	55	0.92	0.04	20.60	151.95
	11:00	60	1.00	0.04	16.20	154.66
	11:05	65	1.08	0.05	19.00	157.34
	11:10	70	1.17	0.05	20.60	160.40
	11:15	75	1.25	0.05	16.40	163.00
	11:20	80	1.33	0.06	20.40	165.89
	11:25	85	1.42	0.06	16.60	168.82
	11:30	90	1.50	0.06	20.60	171.85
	11:35	95	1.58	0.07	16.60	174.12
	11:40	100	1.67	0.07	18.60	176.45
	11:45	105	1.75	0.07	18.00	178.05
	11:50	110	1.83	0.08	20.80	180.90
	11:55	115	1.92	0.08	16.60	183.37
	12:00	120	2.00	0.08	18.80	185.39
	13:00	180	3.00	0.13	18.48	203.05
	14:00	240	4.00	0.17	18.48	216.36
	15:00	300	5.00	0.21	18.35	222.11
	16:00	360	6.00	0.25	18.98	229.39
	17:00	420	7.00	0.29	18.47	233.21
	18:00	480	8.00	0.33	18.77	245.28
	19:00	540	9.00	0.38	18.78	247.59
	20:00	600	10.00	0.42	18.18	247.39
	21:00	660	11.00	0.46	18.62	251.69
	22:00	720	12.00	0.50	18.75	252.04
	23:00	780	13.00	0.54	18.67	256.89
3/10/2015	0:00	840	14.00	0.58	18.47	256.96
	1:00	900	15.00	0.63	18.78	262.19
	2:00	960	16.00	0.67	18.72	263.64
	3:00	1020	17.00	0.71	18.52	264.33
	4:00	1080	18.00	0.75	18.57	264.86
	5:00	1140	19.00	0.79	18.75	265.25
	6:00	1200	20.00	0.83	18.58	265.56
	7:00	1260	21.00	0.88	18.58	265.45
	8:00	1320	22.00	0.92	18.48	265.58
	9:00	1380	23.00	0.96	18.35	265.75

Well WS-2
Summary of 5-Day Pump Test
Jefferson at Beaver Brook, Boxborough, MA

Date	Time	Elapsed Time			Flow Rate GPM	Water Level Below TOC
		Minutes	Hours	Days		
	10:00	1440	24.00	1.00	18.75	265.08
	11:00	1500	25.00	1.04	18.52	265.01
	12:00	1560	26.00	1.08	18.48	266.44
	13:00	1620	27.00	1.13	18.67	268.60
	14:00	1680	28.00	1.17	18.58	268.89
	15:00	1740	29.00	1.21	18.48	268.19
	16:00	1800	30.00	1.25	18.52	268.26
	17:00	1860	31.00	1.29	18.60	269.76
	18:00	1920	32.00	1.33	18.65	270.19
	19:00	1980	33.00	1.38	18.55	269.91
	20:00	2040	34.00	1.42	18.53	270.09
	21:00	2100	35.00	1.46	18.53	269.01
	22:00	2160	36.00	1.50	18.38	269.77
	23:00	2220	37.00	1.54	18.67	271.82
3/11/2015	0:00	2280	38.00	1.58	18.75	273.46
	1:00	2340	39.00	1.63	18.80	274.49
	2:00	2400	40.00	1.67	18.68	275.21
	3:00	2460	41.00	1.71	18.90	276.22
	4:00	2520	42.00	1.75	18.37	276.01
	5:00	2580	43.00	1.79	18.17	274.10
	6:00	2640	44.00	1.83	18.40	274.09
	7:00	2700	45.00	1.88	18.33	273.36
	8:00	2760	46.00	1.92	18.20	274.40
	9:00	2820	47.00	1.96	18.73	274.89
	10:00	2880	48.00	2.00	18.37	275.10
	16:00	3240	54.00	2.25	18.70	275.98
	22:00	3600	60.00	2.50	18.28	275.73
3/12/2015	4:00	3960	66.00	2.75	18.36	274.46
	10:00	4320	72.00	3.00	18.17	271.05
	16:00	4680	78.00	3.25	18.55	274.68
	22:00	5040	84.00	3.50	18.49	282.71
3/13/2015	0:00	5160	86.00	3.58	18.38	289.48
	2:00	5280	88.00	3.67	18.40	290.35
	3:00	5340	89.00	3.71	18.50	296.79
	4:00	5400	90.00	3.75	18.50	296.84
	6:00	5520	92.00	3.83	18.41	304.38
	7:00	5580	93.00	3.88	18.50	312.07
	8:00	5640	94.00	3.92	18.53	316.95
	9:00	5700	95.00	3.96	18.50	317.89
	10:00	5760	96.00	4.00	18.35	317.64
	11:00	5820	97.00	4.04	18.45	319.19
	12:00	5880	98.00	4.08	18.38	317.81
	13:00	5940	99.00	4.13	18.50	319.85
	14:00	6000	100.00	4.17	18.45	322.03
	15:00	6060	101.00	4.21	18.38	321.71
	16:00	6120	102.00	4.25	18.45	322.55
	17:00	6180	103.00	4.29	18.41	323.71
	18:00	6240	104.00	4.33	18.41	321.97
	19:00	6300	105.00	4.38	18.50	325.32
	20:00	6360	106.00	4.42	18.21	321.09

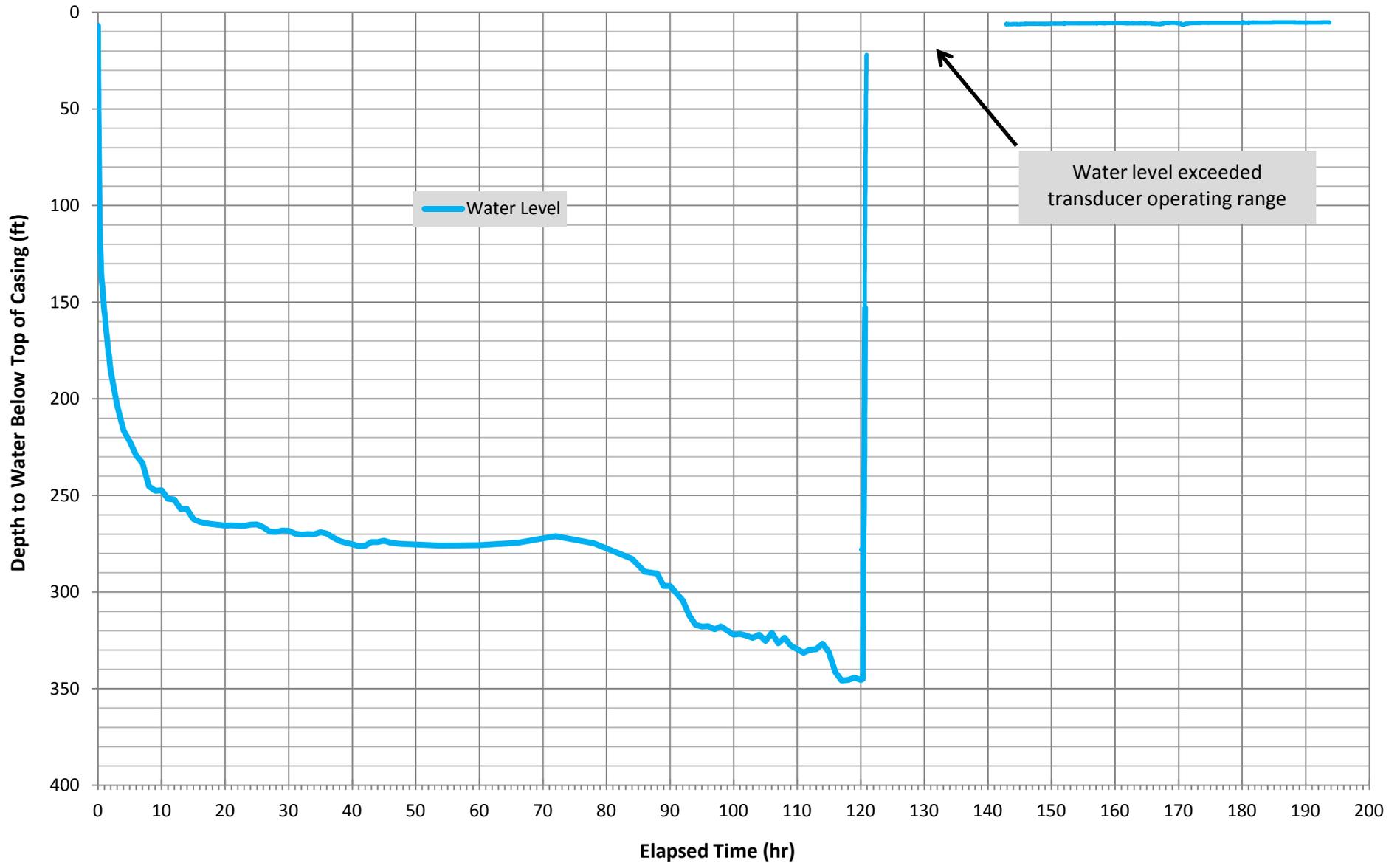
Well WS-2
Summary of 5-Day Pump Test
Jefferson at Beaver Brook, Boxborough, MA

Date	Time	Elapsed Time			Flow Rate GPM	Water Level Below TOC
		Minutes	Hours	Days		
	21:00	6420	107.00	4.46	18.53	326.48
	22:00	6480	108.00	4.50	18.31	323.64
	23:00	6540	109.00	4.54	18.43	327.79
3/14/2015	0:00	6600	110.00	4.58	18.50	329.61
	1:00	6660	111.00	4.63	18.50	331.39
	2:00	6720	112.00	4.67	18.33	329.77
	3:00	6780	113.00	4.71	18.36	329.53
	4:00	6840	114.00	4.75	18.46	326.71
	5:00	6900	115.00	4.79	18.33	331.19
	6:00	6960	116.00	4.83	18.58	341.42
	7:00	7020	117.00	4.88	18.46	345.76
	8:00	7080	118.00	4.92	18.45	345.48
	9:00	7140	119.00	4.96	18.50	344.32
	10:00	7200	120.00	5.00	18.66	345.48
	10:20	7220	120.33	5.01	15.80	344.88
			0.00	0.00		
Recovery	10:20	7220	120.33	5.01	0.00	344.88
	10:21	7221	120.35	5.01	0.00	329.90
	10:22	7222	120.37	5.02	0.00	315.62
	10:23	7223	120.38	5.02	0.00	301.08
	10:24	7224	120.40	5.02	0.00	286.40
	10:25	7225	120.42	5.02	0.00	274.90
	10:26	7226	120.43	5.02	0.00	268.72
	10:27	7227	120.45	5.02	0.00	264.82
	10:28	7228	120.47	5.02	0.00	261.64
	10:29	7229	120.48	5.02	0.00	257.28
	10:30	7230	120.50	5.02	0.00	251.48
	10:31	7231	120.52	5.02	0.00	244.25
	10:32	7232	120.53	5.02	0.00	236.00
	10:33	7233	120.55	5.02	0.00	227.36
	10:34	7234	120.57	5.02	0.00	218.20
	10:35	7235	120.58	5.02	0.00	207.93
	10:36	7236	120.60	5.03	0.00	197.75
	10:37	7237	120.62	5.03	0.00	187.10
	10:40	7240	120.67	5.03	0.00	153.00

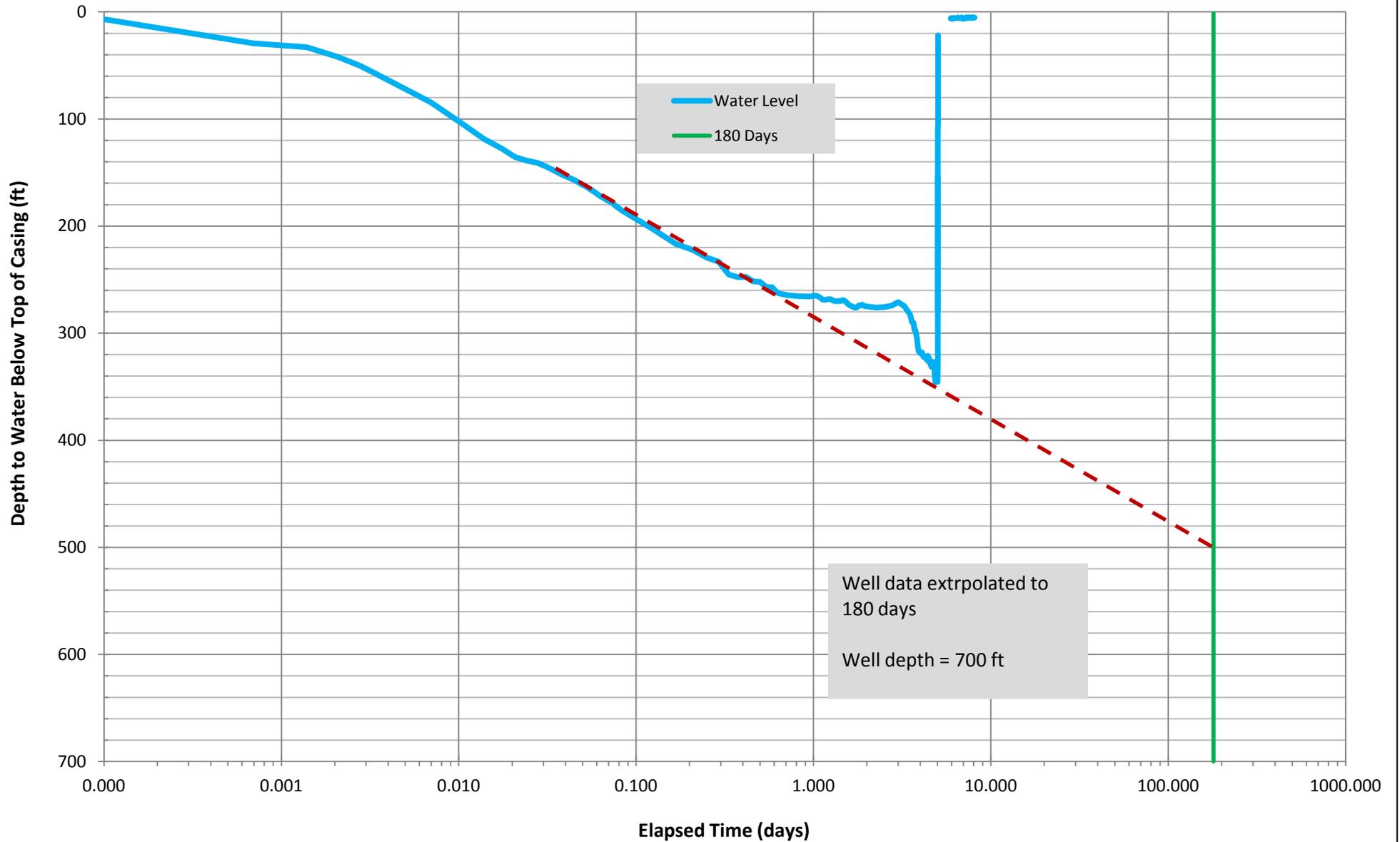
Notes:

1. Depth to water and flow rate readings were collected on the date and times indicated by Skillings & Sons, Inc. of Amherst, New Hampshire.
2. Abbreviations:
TOC = top of casing
GPM = gallons per minute

Bedrock Well WS-2
Five Day Pumping Test at 18.6 gpm
Jefferson at Beaver Brook, Boxborough, MA
Based on Well Driller Water Level Readings



Bedrock Well WS-2
Five Day Pumping Test at 18.6 gpm
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



APPENDIX C

PUMPING TEST DATA FOR NEARBY PRIVATE WELLS

INTERSTATE 495

Site Boundary

Legend

Primary Abutters (7)

Alternate Abutters (4)

90 Whitcomb

55 Whitcomb

47 Whitcomb

70 Whitcomb

48 Whitcomb

214 Hill Rd

38 Whitcomb

187 Hill Rd

Proposed Bedrock Wells

Town of Boxborough

50 Hill Rd

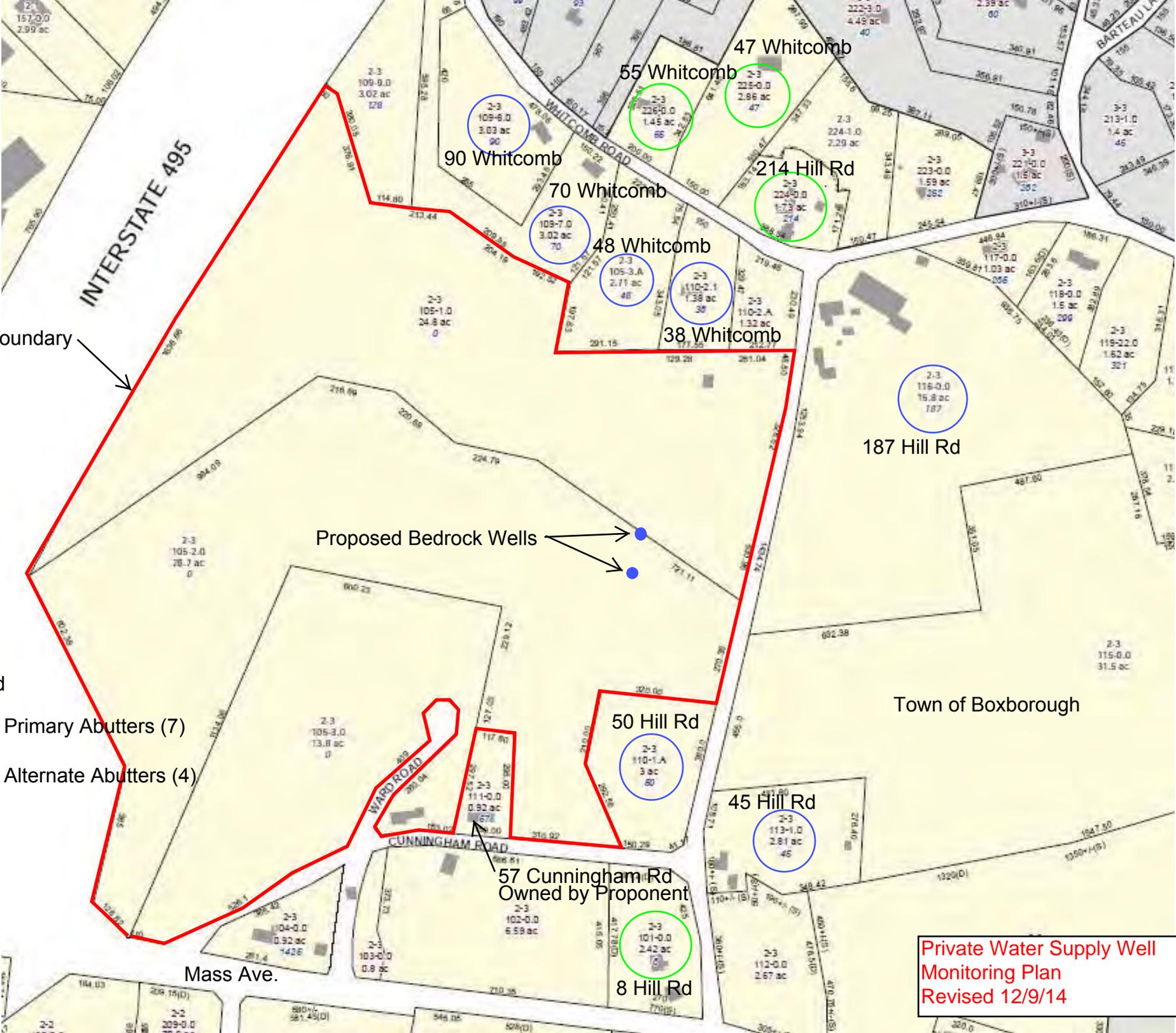
45 Hill Rd

57 Cunningham Rd
Owned by Proponent

Mass Ave.

8 Hill Rd

Private Water Supply Well
Monitoring Plan
Revised 12/9/14



LIST OF PRIMARY ABUTTERS
Private Water Supply Well Monitoring
The Residences at Beaver Brook
Boxborough, MA

PARCEL ID	LOCATION	OWNER	CO-OWNER	MAILING ADDRESS	CITY	STATE	ZIP
PRIMARY ABUTTERS							
02-3-109-7.0	70 Whitcomb Rd	Zeng Ying Juan	Shi Chun	70 Whitcomb Rd	Boxborough	MA	01719
02-3-109-8.0	90 Whitcomb Rd	Ramani Ramasundar &	Ramasundar Aparna	90 Whitcomb Rd	Boxborough	MA	01719
02-3-110-1.A	50 Hill Rd	Jones Carol A		P.O. Box 584	Acton	MA	01720
02-3-110-2.1	38 Whitcomb Rd	Bhan Ashish &	Bhan Natasha	38 Whitcomb Rd	Boxborough	MA	01719
02-3-113-1.0	45 Hill Rd	Matchett Michael E &	Matchett Cynthia G	45 Hill Road	Boxborough	MA	01719
02-3-116-0.0	187 Hill Rd	Wetherbee Farms Realty Company	Fox, Leslie R & Gladys R	187 Hill Rd	Boxborough	MA	01719
02-3-105-3.A	48 Whitcomb Rd	Gutierrez Jorge Martin &	Gutierrez Carolyn Taylor	48 Whitcomb Rd	Boxborough	MA	01719

Health with ample notice and opportunity to observe the placement and removal of the transducers from the Designated Wells.

24. The Applicant shall prepare calculations regarding the impact (or lack thereof) to the water levels in the Designated Wells attributable to the pump test at the Project's water supply well using the procedures and criteria outlined below:
- (a) Utilizing the water level data from the transducers, the maximum self-induced drawdown ("Baseline Self-induced Drawdown") in each Designated Well shall be calculated to determine the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in each Designated Well.
 - (b) The 180-day projected test-induced drawdown ("Test-induced Drawdown") on each Designated Well shall be calculated by creating a drawdown versus length of time graph of the decline in the normal static water levels (if change is observed) due to the pumping of the Project's water supply well. All data will be corrected for ambient water level trends in static water levels and barometric fluctuations as necessary.
 - (c) After determining the pump depth in each Designated Well (either by pump installer records, Board of Health records, or by probing the well) the total available water column ("Total Available Water Column") shall be calculated as the difference between the depth to the non-pumping average static water level and the depth to the well pump.

The Applicant shall submit its calculations under paragraphs (a) through (c) to the Board of Health, with copy to the Designated Owners, at the same time that the Mass DEP Pump Test Report is submitted to the Board of Health.

25. A Designated Well shall be deemed to be impacted by pumping from the Project's water supply well if the sum of the Baseline Self-induced Drawdown and the Test-induced Drawdown exceeds either of the two following criteria: (1) exceeds 50% of the Total Available Water Column, and at least 10% of this total is the Test-induced Drawdown, or (2) exceeds 75% of the Total Available Water Column, and at least 2% of this total is the Test-induced Drawdown.

If the Designated Well is deemed to be not impacted by the Project's water supply well based on the above criteria, then no further long-term monitoring of the Designated Well shall be required and the transducer shall be removed from the well. If a Designated Well is deemed to be impacted by pumping from the Project's water supply well, then long-term monitoring of the water level in such impacted Designated Well ("Impacted Well") shall be required. This long-term monitoring shall include leaving the transducer in the Impacted Well to record water levels for a period of 5 years after the pump test, or 3 years after issuance of the final Certificate of Occupancy, whichever is longer. If a long-term monitoring program is necessary, a water level transducer and flow meter shall also be installed on the

DESIGNATED WELL – 38 WHITCOMB ROAD

The criteria for determining if the available water column in an abutter’s well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 24.21’ below top of casing.
 Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 47.75’
 MBSID $\approx 47.75' - 24.21' = 23.54'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 0'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 260’ below top of casing, so the pump is deeper than 260’.

TAWC $\geq 260' - 24.21' = 235.79'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

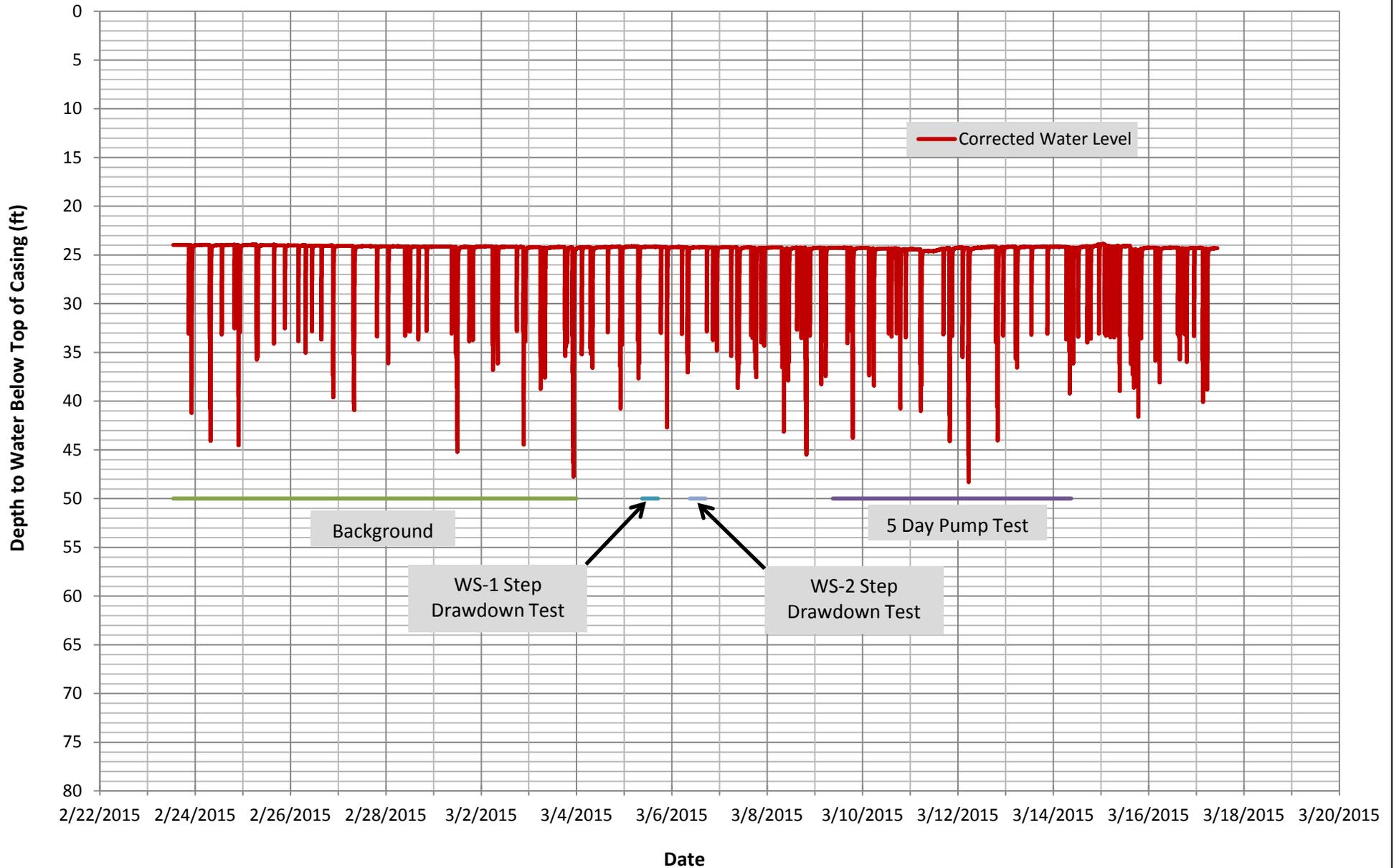
MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)
 $23.54' + 0' \leq 50\% (235.79')$, and $0' \leq 10\% (23.54' + 0')$
 $23.54' < 117.9'$, and $0' < 2.35'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

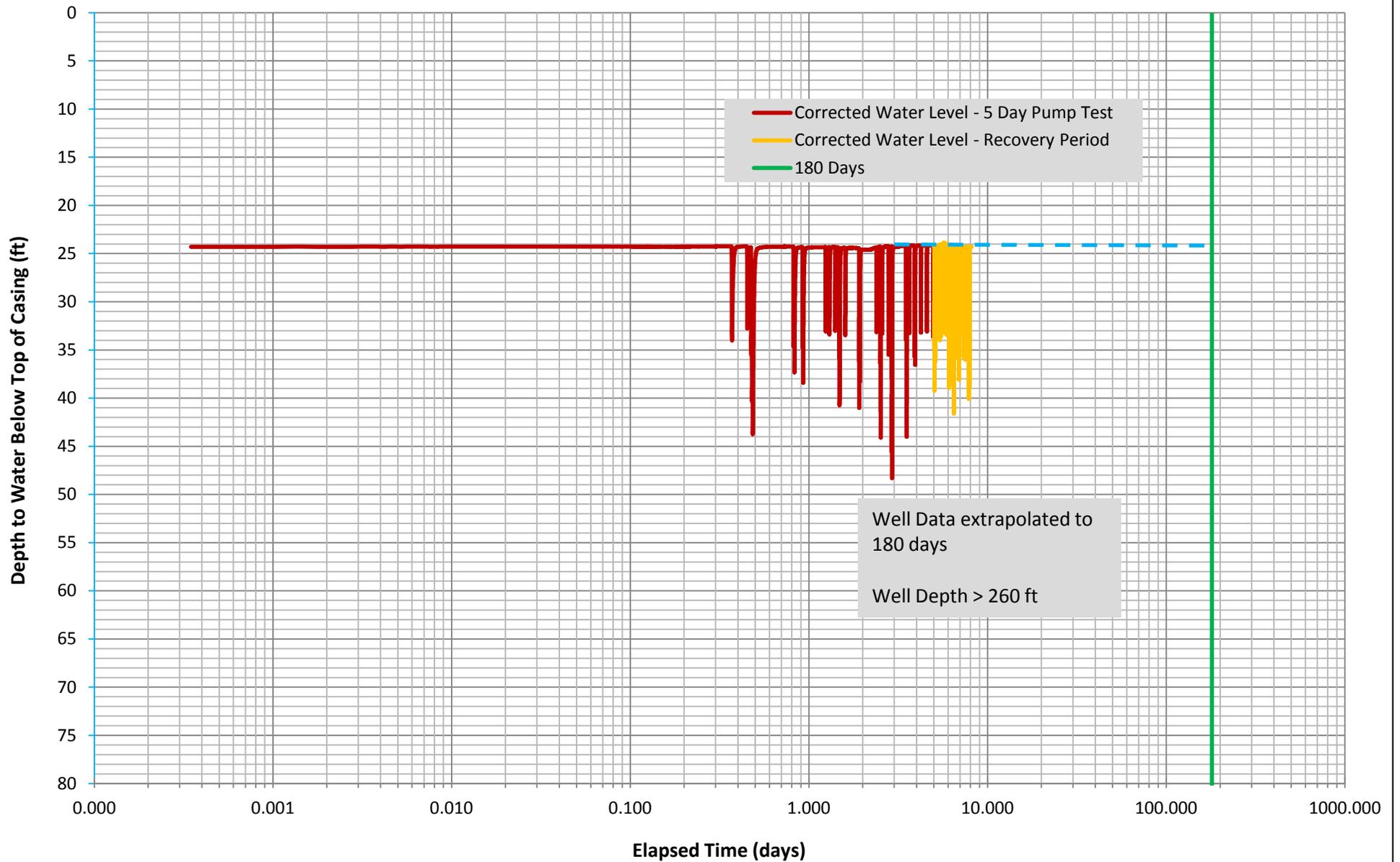
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)
 $23.54' + 0' \leq 75\% (235.79')$, and $0' \leq 2\% (23.54' + 0')$
 $23.54' < 176.8'$, and $0' < 0.5'$ \therefore **NOT IMPACTED**

Conclusion – This well is deemed “Not Impacted” as defined in the Comprehensive Permit conditions.

Abutter Well - 38 Whitcomb Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



Abutter Well - 38 Whitcomb Road
Five Day Pumping Test
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



DESIGNATED WELL - 48 WHITCOMB ROAD

The criteria for determining if the available water column in an abutter's well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 23.91' below top of casing.
 Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 32.86'
 MBSID $\approx 32.86' - 23.91' = 8.95'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 0'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 220' below top of casing, so the pump is deeper than 220'.

TAWC $\geq 220' - 23.91' = 196.09'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

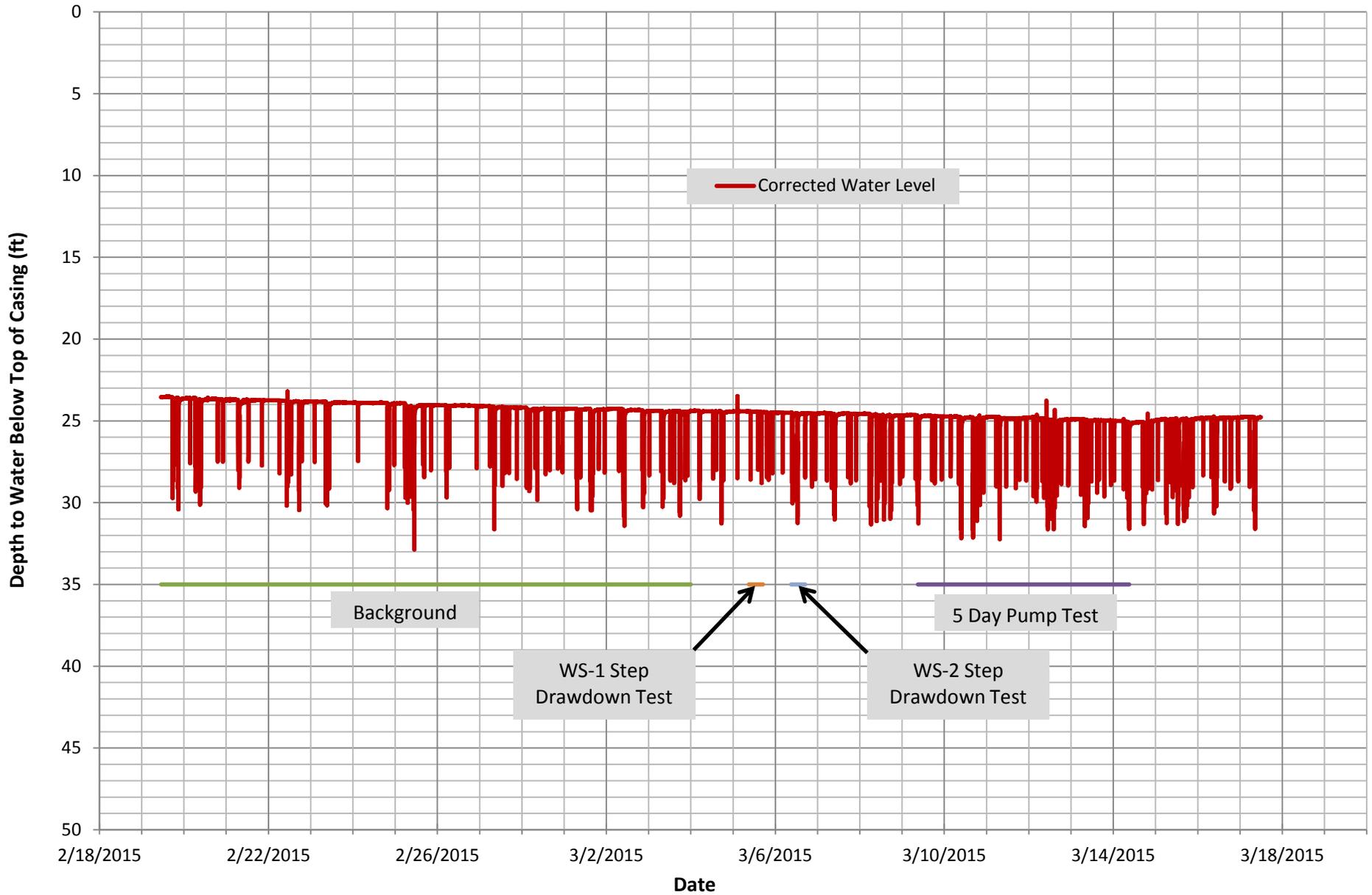
MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)
 $8.95' + 0' \leq 50\% (196.09')$, and $0' \leq 10\% (8.95' + 0')$
 $8.95' < 98.05'$, and $0' < 0.895'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

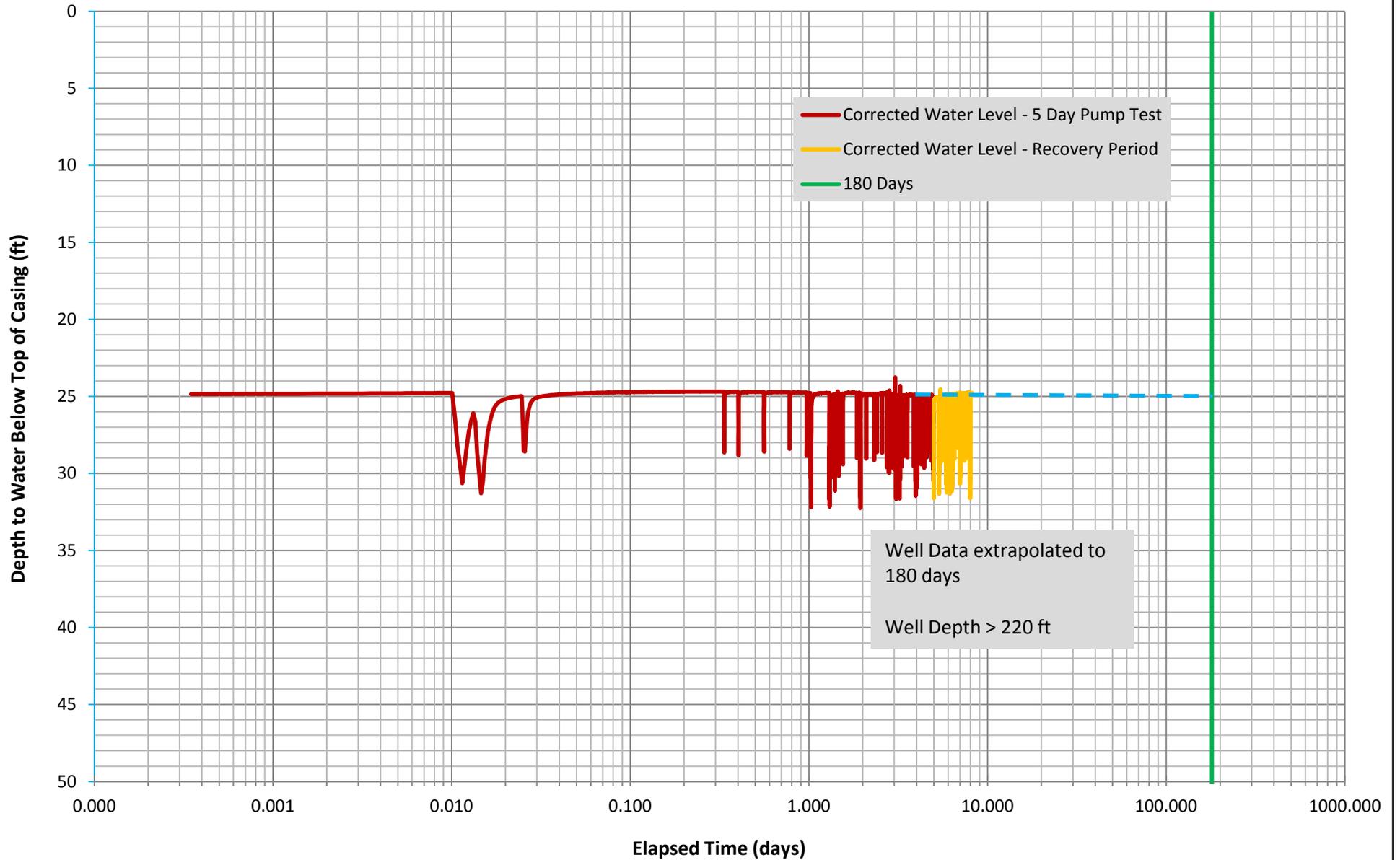
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)
 $8.95' + 0' \leq 75\% (196.09')$, and $0' \leq 2\% (8.95' + 0')$
 $8.95' < 147.07'$, and $0' < 0.20'$ \therefore **NOT IMPACTED**

Conclusion - This well is deemed "Not Impacted" as defined in the Comprehensive Permit conditions.

Abutter Well - 48 Whitcomb Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



Abutter Well - 48 Whitcomb Road
Five Day Pumping Test
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



DESIGNATED WELL – 70 WHITCOMB ROAD

The criteria for determining if the available water column in an abutter's well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 9.87' below top of casing.

Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 16.07'

MBSID $\approx 16.07' - 9.87' = 6.20'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 0'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 200' below top of casing, so the pump is deeper than 200'.

TAWC $\geq 200' - 9.87' = 190.13'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)

$6.20' + 0' \leq 50\% (190.13')$, and $0' \leq 10\% (6.20' + 0')$

$6.20' < 95.07'$, and $0' < 0.62'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

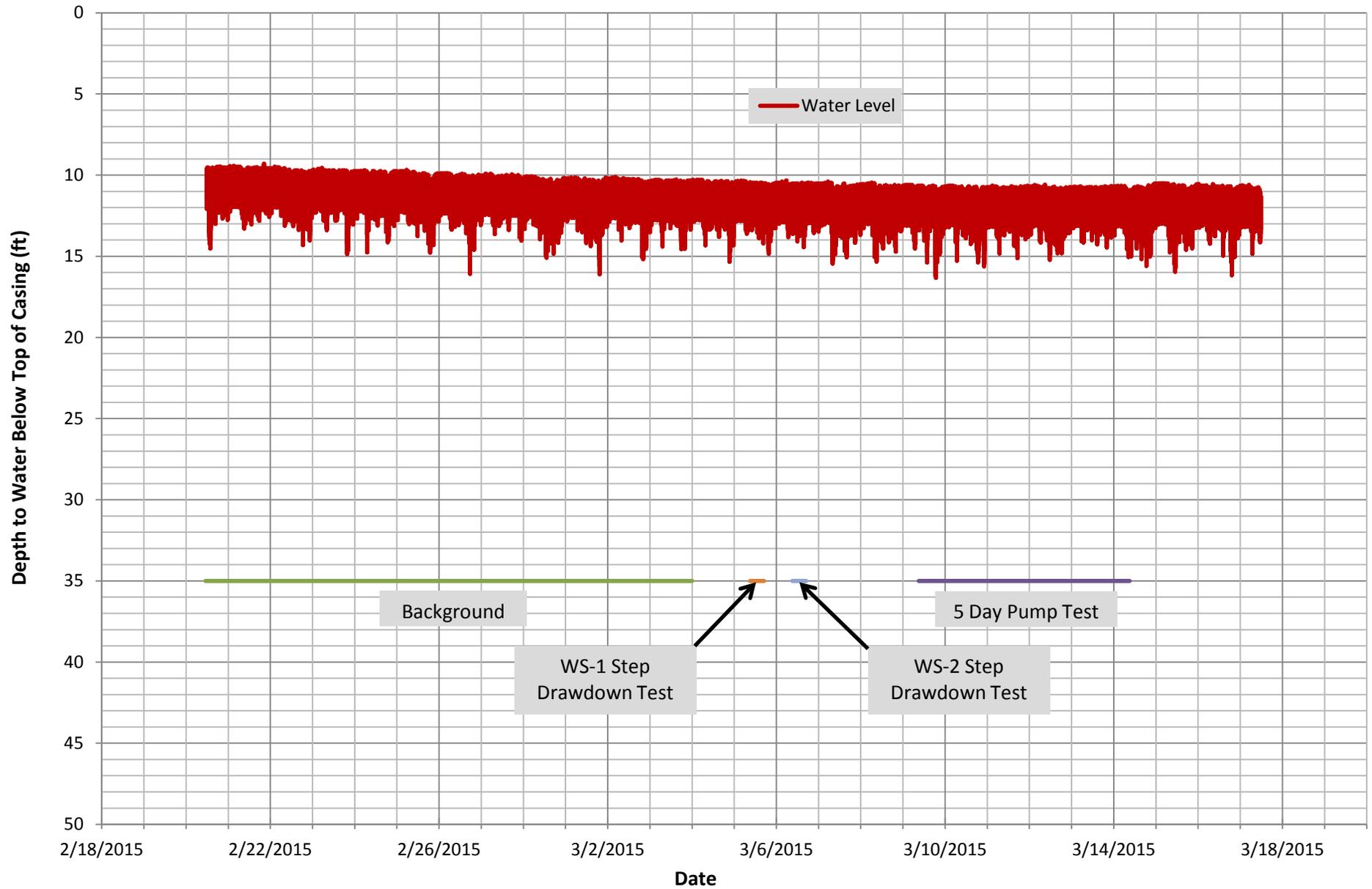
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)

$6.20' + 0' \leq 75\% (190.13')$, and $0' \leq 2\% (6.20' + 0')$

$6.20' < 143.60'$, and $0' < 0.12'$ \therefore **NOT IMPACTED**

Conclusion – This well is deemed “Not Impacted” as defined in the Comprehensive Permit conditions.

Abutter Well - 70 Whitcomb Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



DESIGNATED WELL - 90 WHITCOMB ROAD

The criteria for determining if the available water column in an abutter's well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 19.83' below top of casing.
 Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 20.33'
 MBSID $\approx 20.33' - 19.83' = 0.50'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 0'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 60' below top of casing, so the pump is deeper than 60'.

TAWC $\geq 60' - 19.83' = 40.17'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

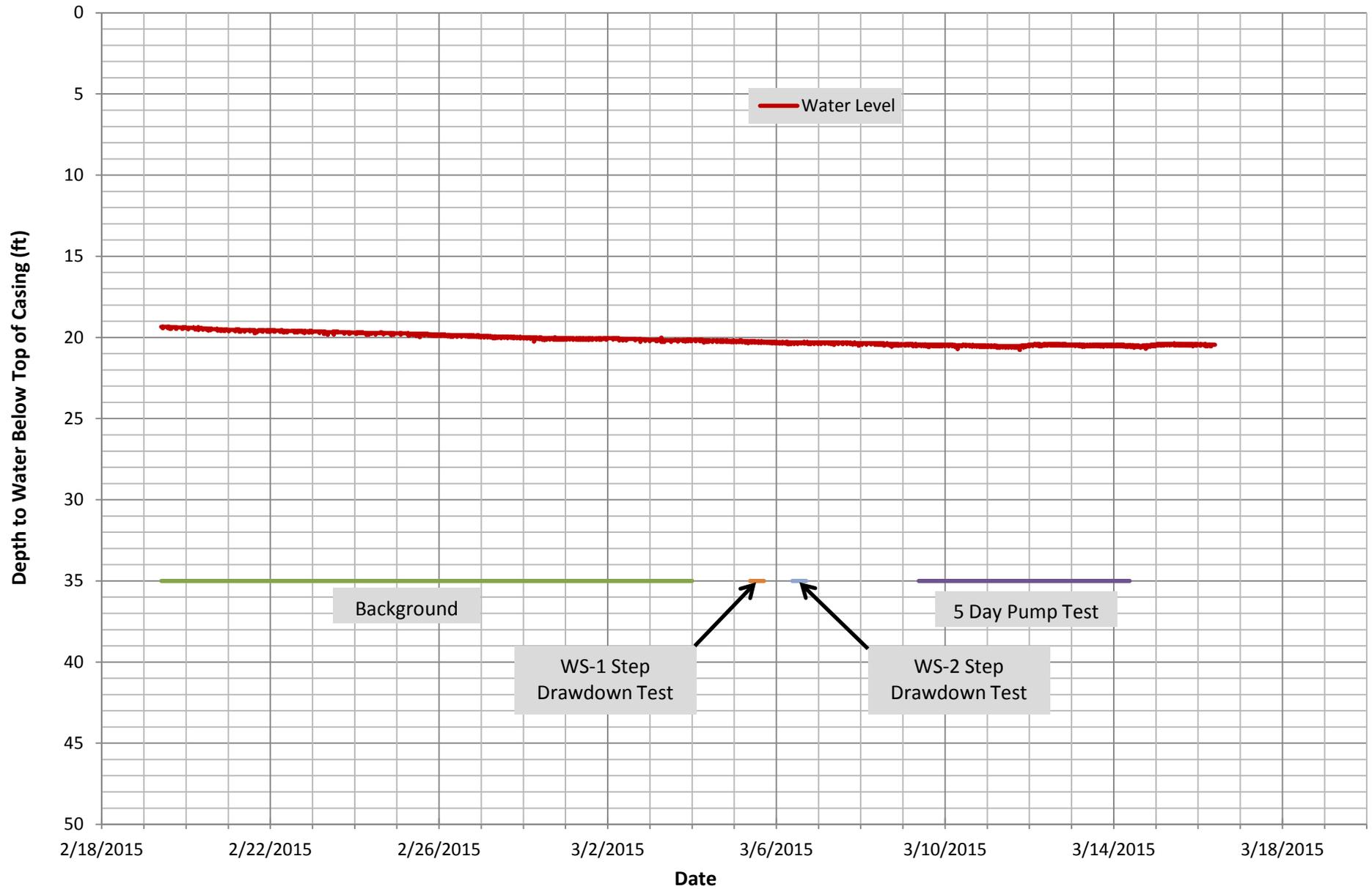
MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)
 $0.50' + 0' \leq 50\% (40.17')$, and $0' \leq 10\% (0.50' + 0')$
 $0.50' < 20.09'$, and $0' < 0.05'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

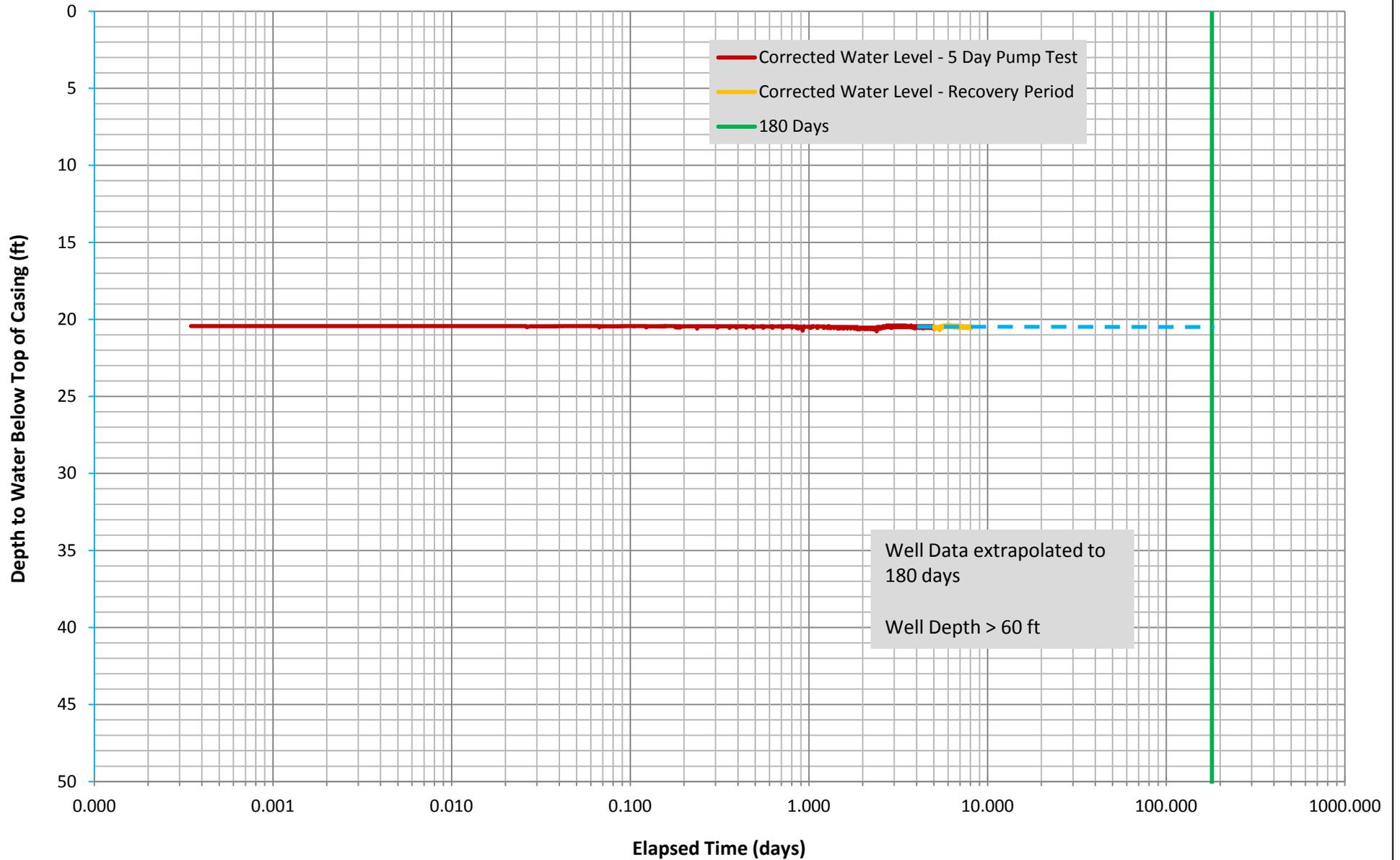
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)
 $0.50' + 0' \leq 75\% (40.17')$, and $0' \leq 2\% (0.50' + 0')$
 $0.50' < 30.06'$, and $0' < 0.01'$ \therefore **NOT IMPACTED**

Conclusion - This well is deemed "Not Impacted" as defined in the Comprehensive Permit conditions.

Abutter Well - 90 Whitcomb Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



Abutter Well - 90 Whitcomb Road
Five Day Pumping Test
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



DESIGNATED WELL - 45 HILL ROAD

The criteria for determining if the available water column in an abutter's well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 12.80' below top of casing.
 Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 35.06'
 MBSID $\approx 35.06' - 12.80' = 22.26'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 0'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 220' below top of casing, so the pump is deeper than 220'.

TAWC $\geq 220' - 12.80' = 207.20'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

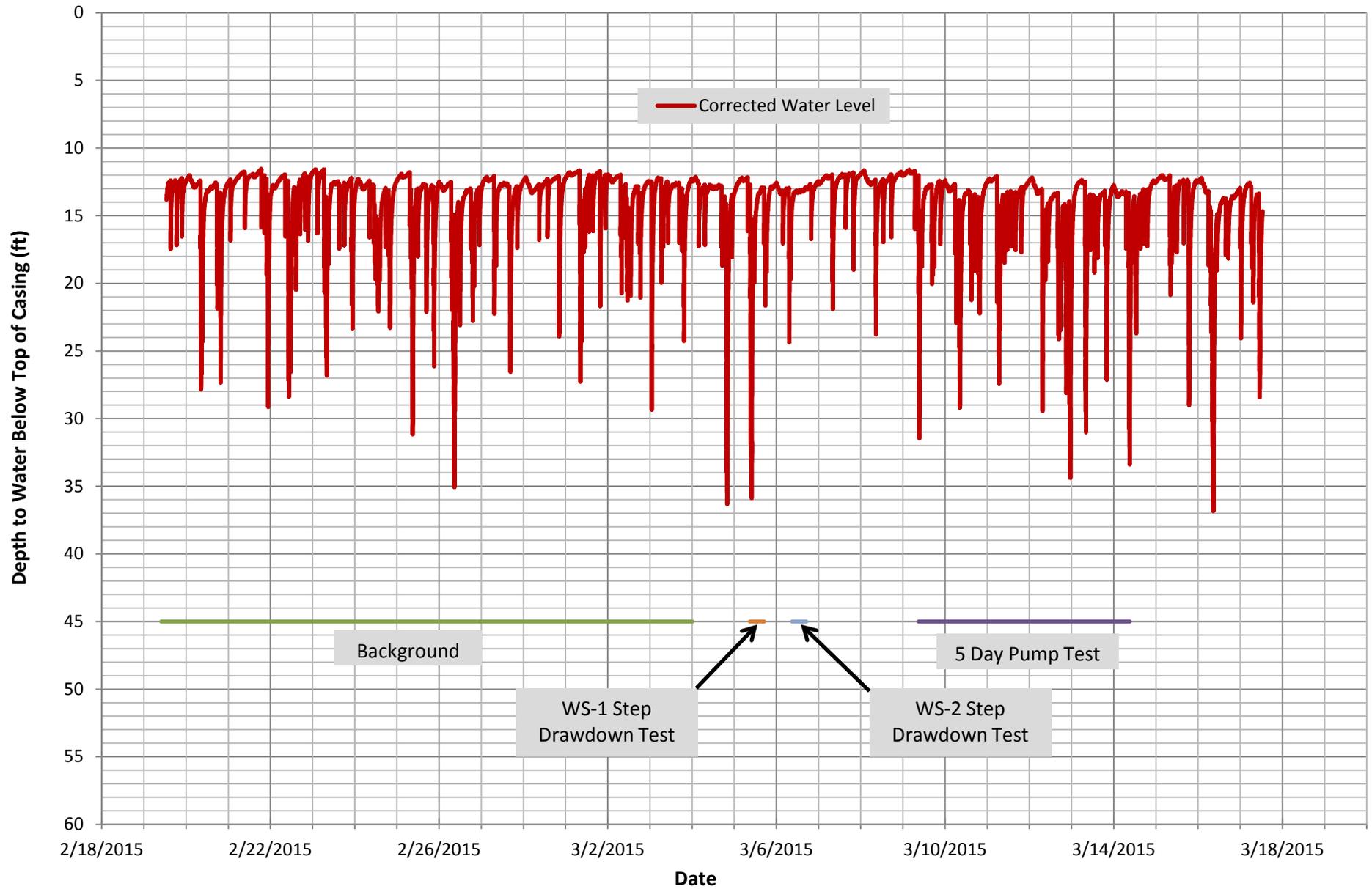
MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)
 $22.26' + 0' \leq 50\% (207.20')$, and $0' \leq 10\% (22.26' + 0')$
 $22.26' < 103.60'$, and $0' < 2.23'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

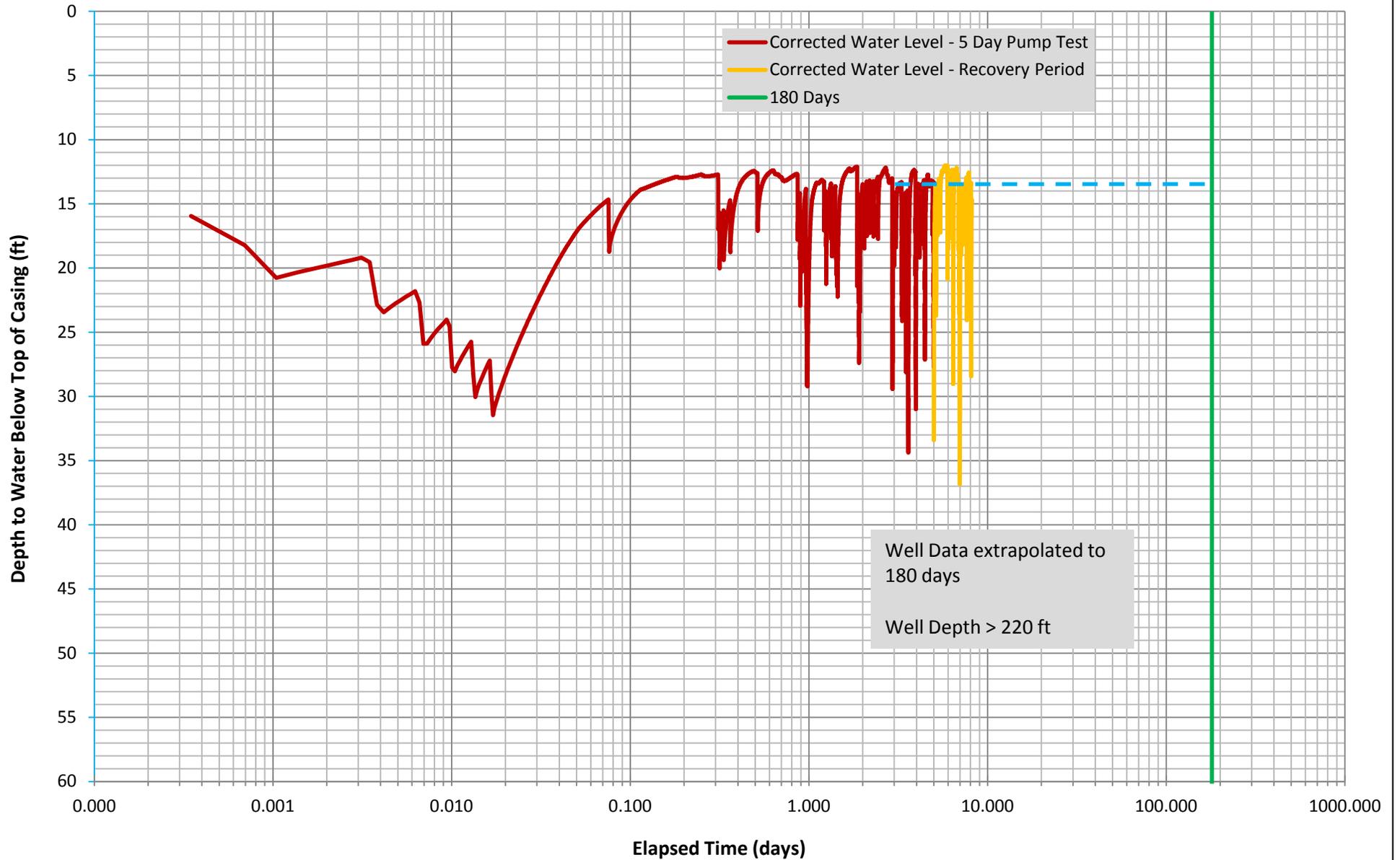
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)
 $22.26' + 0' \leq 75\% (207.20')$, and $0' \leq 2\% (22.26' + 0')$
 $22.26' < 155.40'$, and $0' < 0.045'$ \therefore **NOT IMPACTED**

Conclusion - This well is deemed "Not Impacted" as defined in the Comprehensive Permit conditions.

Abutter Well - 45 Hill Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



Abutter Well - 45 Hill Road
Five Day Pumping Test
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



DESIGNATED WELL - 50 HILL ROAD

The criteria for determining if the available water column in an abutter's well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 3.20' below top of casing.

Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 17.17'

MBSID $\approx 17.17' - 3.20' = 13.97'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 10.0' - 3.20' = 6.8'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 220' below top of casing, so the pump is deeper than 220'.

TAWC $\geq 220' - 3.20' = 216.80'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)

$13.97' + 6.8' \leq 50\% (216.80')$, and $6.8' \leq 10\% (13.97' + 6.8')$

$20.77' < 108.4'$, and $6.8' > 2.08'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

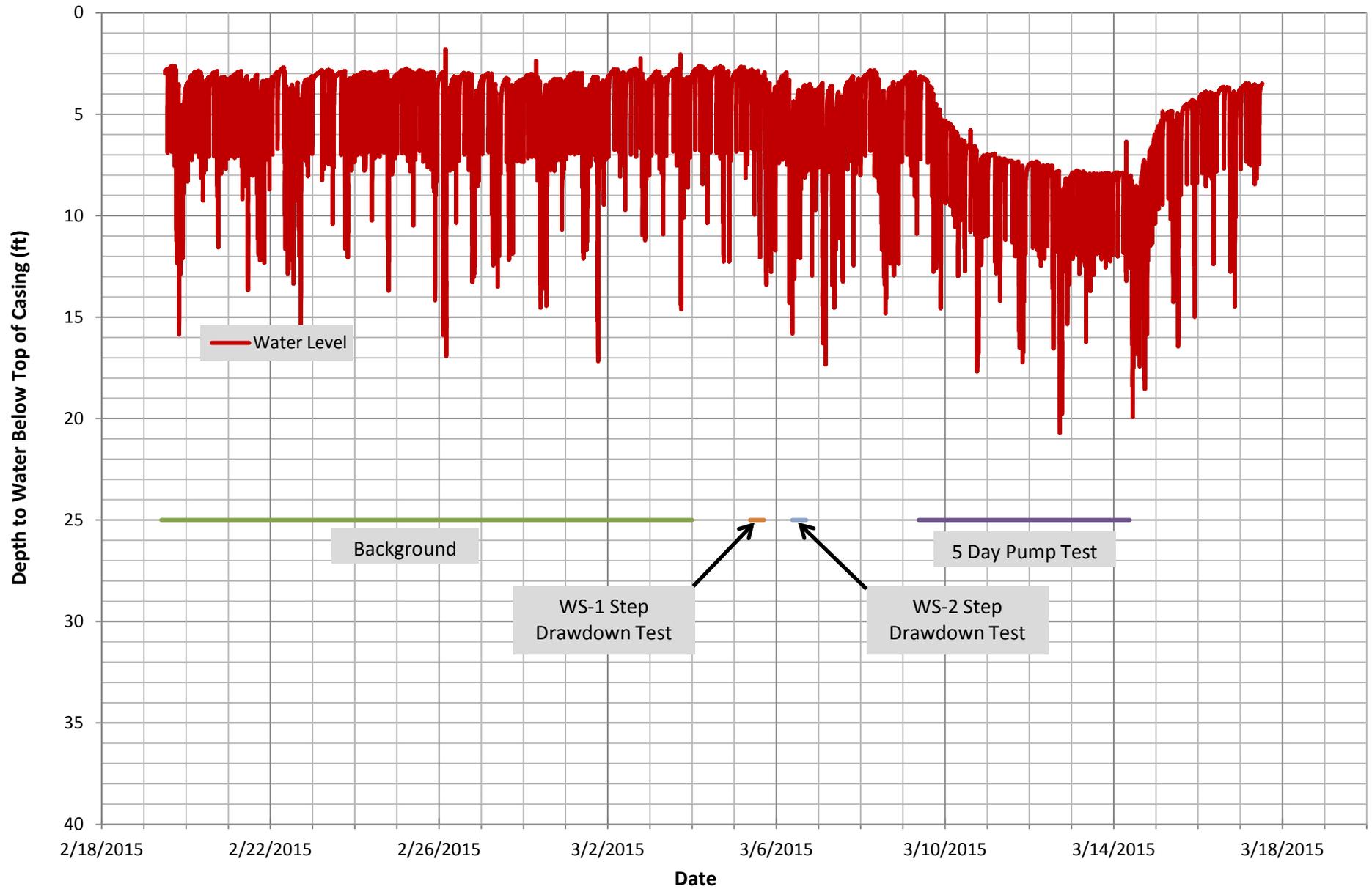
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)

$13.97' + 6.8' \leq 75\% (216.80')$, and $6.8' \leq 2\% (13.97' + 6.8')$

$20.77' < 162.6'$, and $6.8' > 0.42'$ \therefore **NOT IMPACTED**

Conclusion - This well is deemed "Not Impacted" as defined in the Comprehensive Permit conditions.

Abutter Well - 50 Hill Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



DESIGNATED WELL - 187 HILL ROAD

The criteria for determining if the available water column in an abutter's well is impacted by operation of the new bedrock wells serving the project are defined in the Comprehensive Permit issued by the Town of Boxborough dated April 18, 2008. Specifically, permit conditions #A24 and #A25 (attached) define the terms to be used in the calculations and the thresholds at which an abutter well is considered impacted.

Water levels were measured in abutter wells using a pressure transducer prior to, during, and after the 5-day pumping tests that were performed on the two new bedrock wells to be used to supply potable water to the project. Graphic plots of the water level data over time in the abutter well are attached. Data points from the graphic plots were used to calculate values for the terms defined in the Comprehensive Permit.

Water level data were corrected for changes in the ambient static water level due to snow melt. No corrections to transducer water level measurements were necessary due to fluctuations in barometric pressure since the transducer cables were vented to atmospheric pressure.

Maximum Baseline Self-Induced Drawdown (MBSID) - MBSID is defined as the difference between the depth to the non-pumping average static water level and the depth to the lowest pumping water level in the abutter well.

Average Static Water Level in Abutter Well prior to Pumping Test = 32.30' below top of casing.
 Depth to the Lowest Water Level Observed During Pumping from Abutter Well = 49.36'
 MBSID $\approx 49.36' - 32.30' = 17.06'$

Test Induced Drawdown (TID) at 180 days - TID at 180 days is defined as the decline (if any) in the normal static water level in the abutter well due to pumping in the project wells extrapolated out to 180 days.

TID $\approx 42.0' - 32.30' = 9.8'$

Total Available Water Column (TAWC) - TAWC is defined as the difference between the depth to the non-pumping average static water level and the depth to the well pump. No records were readily available regarding the depth to the well pump in this abutter well. However, it is known that the well pump is deeper than the length of a stilling tube that was able to be installed in the abutter well for the transducer by the licensed well driller. It would not be possible to extend the stilling tube past the well pump. For this well, a stilling tube was installed to 220' below top of casing, so the pump is deeper than 220'.

TAWC $\geq 220' - 32.30' = 187.7'$

Impact Criteria #1: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 50% of the Total Available Water Column, AND at least 10% of this total is the Test Induced Drawdown.

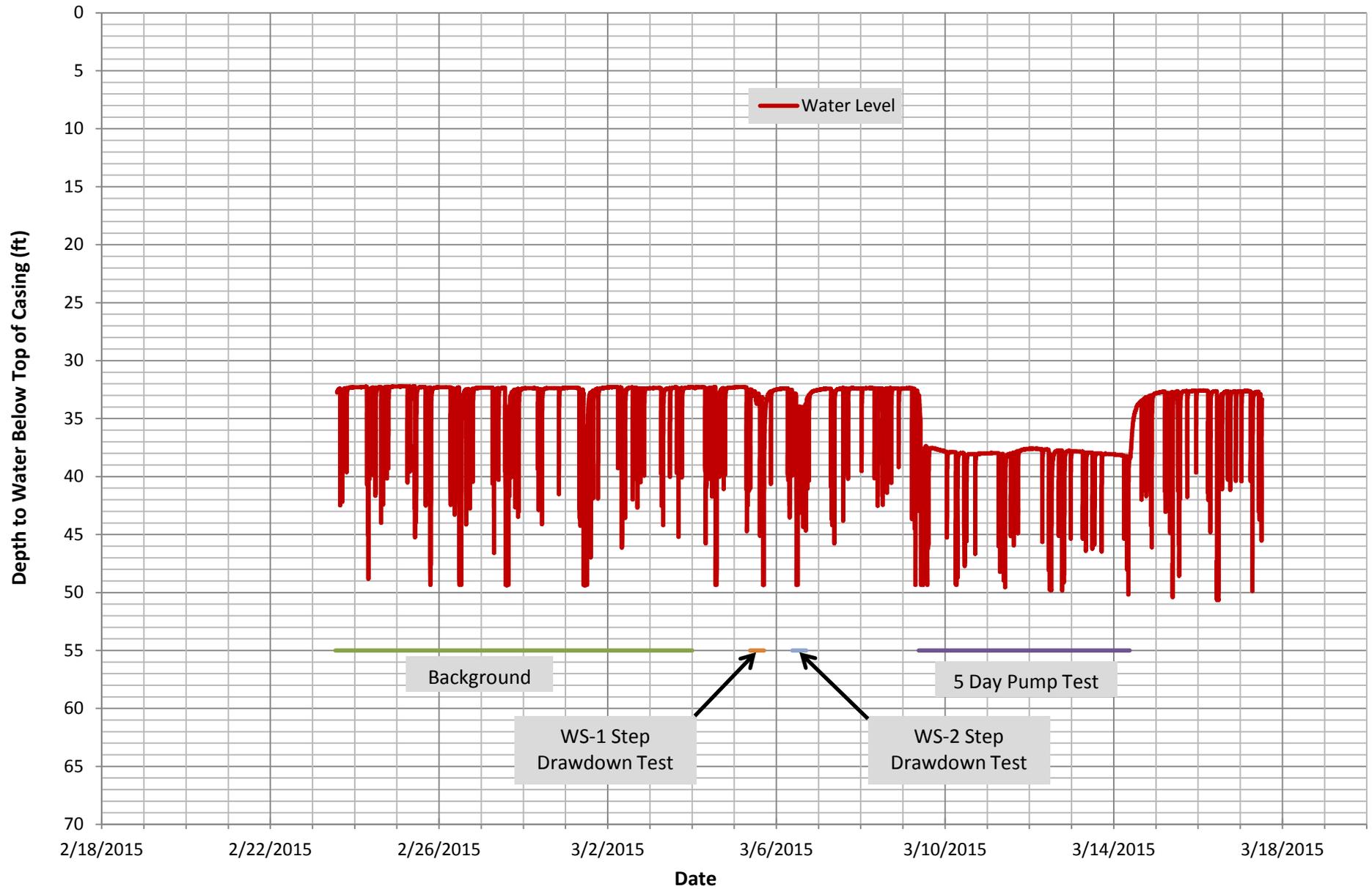
MBSID + TID > 50% TAWC, and TID > 10% (MBSID + TID)
 $17.06' + 9.8' \leq 50\% (187.7')$, and $9.8' \leq 10\% (17.06' + 9.8')$
 $26.86' < 93.85'$, and $9.8' > 2.69'$ \therefore **NOT IMPACTED**

Impact Criteria 2: An abutter well is deemed to be impacted by pumping from the project wells if the sum of the Maximum Baseline Self-Induced Drawdown and Test Induced Drawdown exceeds 75% of the Total Available Water Column, AND at least 2% of this total is the Test Induced Drawdown.

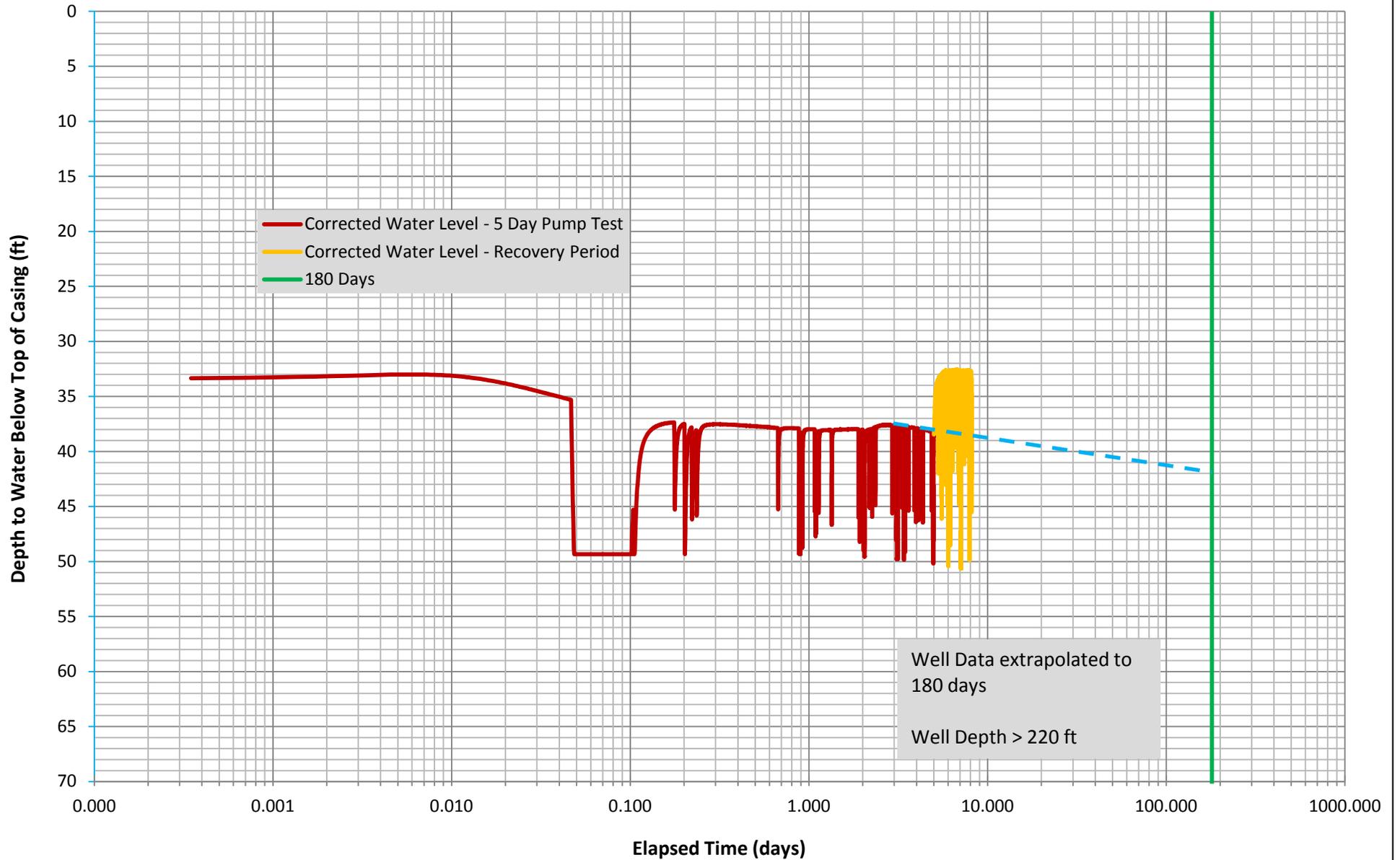
MBSID + TID > 75% TAWC, and TID > 2% (MBSID + TID)
 $17.06' + 9.8' \leq 75\% (187.7')$, and $9.8' \leq 2\% (17.06' + 9.8')$
 $26.86' < 140.78'$, and $9.8' > 0.54'$ \therefore **NOT IMPACTED**

Conclusion - This well is deemed "Not Impacted" as defined in the Comprehensive Permit conditions.

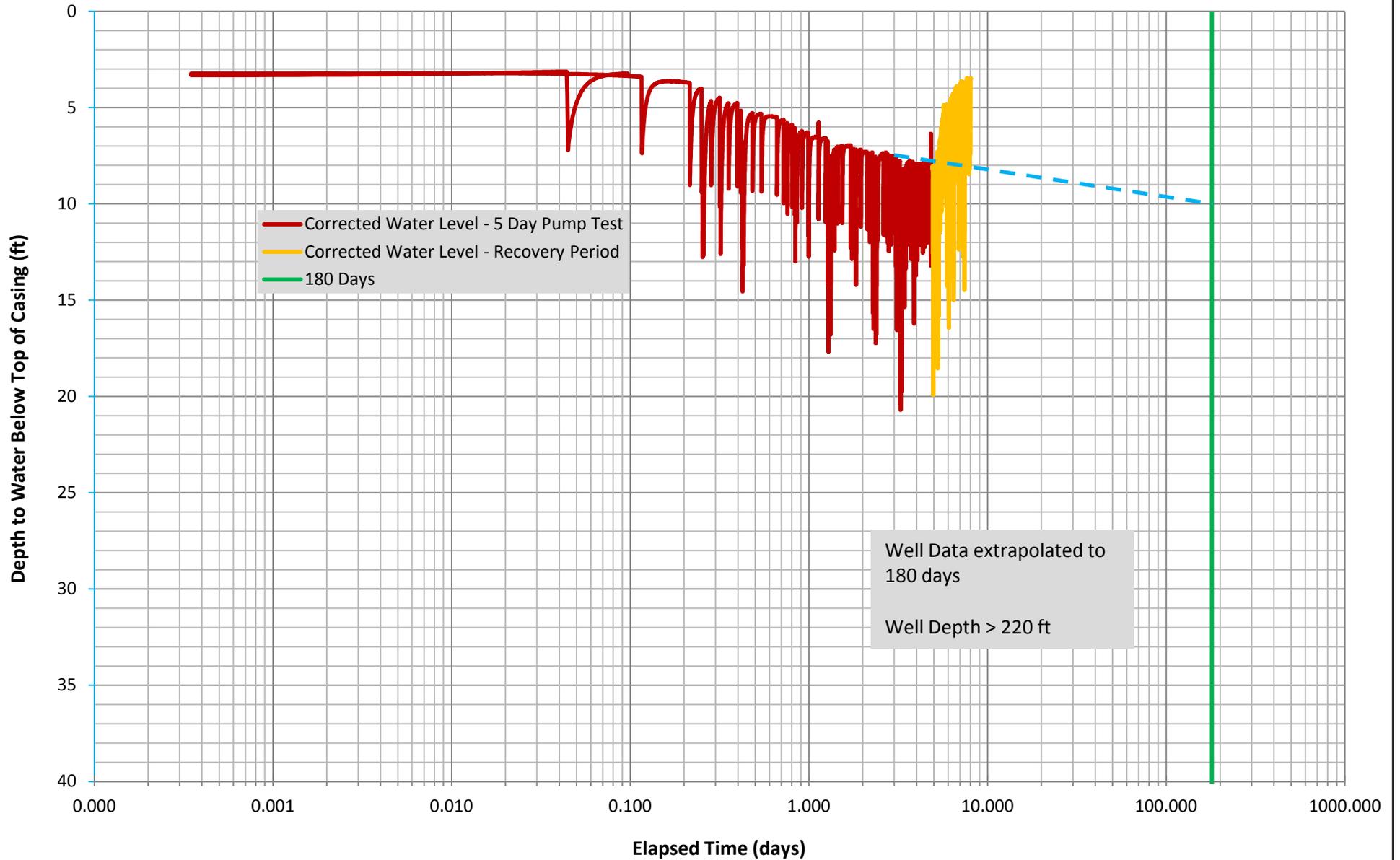
Abutter Well - 187 Hill Road
Jefferson at Beaver Brook, Boxborough, MA
Background, Pump Tests & Recovery



Abutter Well - 187 Hill Road
Five Day Pumping Test
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



Abutter Well - 50 Hill Road
Five Day Pumping Test
Jefferson at Beaver Brook, Boxborough, MA
Stabilization Criteria



APPENDIX D
WATER QUALITY DATA

Table D.1
 Summary of Field Parameters
 Jefferson at Beaver Brook, Boxborough, MA

Location	Units	WS-1	WS-2	WS-1	WS-2	WS-1	WS-2	WS-1	WS-2	WS-1	WS-2
Day		Day 1		Day 2		Day 3		Day 4		Day 5	
Date		3/9/2015		3/10/2015		3/11/2015		3/12/2015		3/14/2015	
Field Parameters											
pH	S.U.	6.62	6.86	6.87	6.97	6.88	7.03	6.81	7.07	6.84	6.98
Specific Conductivity	uS/cm	645	632	594	538	565	496	555	485	551	503
Temperature	°C	11.1	10.8	11.8	11.8	12	12.5	11.8	10.6	9.7	8.5
Odor	None	None	None	None	None	None	None	None	None	None	None
Carbon Dioxide	mg/l	430	310	350	260	--	--	400	280	420	330

Notes:

1. Field parameters were collected by Sanborn Head on the dates indicated during pump tests. Carbon dioxide samples were analyzed by Alpha Analytical Laboratory of Westborough, MA.
2. Abbreviations
 "uS/cm " indicates microsiemens per centimeters
 "--" = not tested



Secondary Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
A	DAY 1 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/09/15 S.A.W.
B	DAY 1 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/09/15 S.A.W.
	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	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction	
B	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction	
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).				
A	The sample was received at the laboratory above the required temperature range. The sample was transported to the laboratory in a cooler with ice and delivered directly from the sampling site. <u>New Source Approval</u>			
B	The sample was received at the laboratory above the required temperature range. The sample was transported to the laboratory in a cooler with ice and delivered directly from the sampling site. <u>New Source Approval</u>			

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		SMCL	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
	A	B					
IRON (mg/L)	0.14	0.41	0.3	0.05	200.7	03/10/15	L1504303-01 & L1504303-02
MANGANESE (mg/L)	0.045	0.075	0.05*	0.010	200.7	03/10/15	L1504303-01 & L1504303-02
ALKALINITY (mg/L as CaCO3)	164	141	None	2.00	2320B	03/09/15	L1504303-01 & L1504303-02
CALCIUM (mg/L)	98	99	None	0.10	200.7	03/10/15	L1504303-01 & L1504303-02
MAGNESIUM (mg/L)	17	16	None	0.10	200.7	03/10/15	L1504303-01 & L1504303-02
HARDNESS (mg/L as CaCO3)	310	320	None	0.66	200.7	03/10/15	L1504303-01 & L1504303-02
POTASSIUM (mg/L)	4.0	3.9	None	2.5	200.7	03/10/15	L1504303-01 & L1504303-02
TURBIDITY (NTU)	0.83	2.0	None	0.20	180.1	03/09/15	L1504303-01 & L1504303-02
ALUMINUM (mg/L)	ND	0.19	0.2	0.10	200.7	03/10/15	L1504303-01 & L1504303-02
CHLORIDE (mg/L)	114	126	250	2.50	300.0	03/11/15	L1504303-01 & L1504303-02
COLOR (C.U.)	ND	ND	15	5.0	2120B	03/09/15	L1504303-01 & L1504303-02
COPPER (mg/L)	0.073	0.238	1	0.010	200.7	03/10/15	L1504303-01 & L1504303-02
ODOR (T.O.N)	NO ODOR	NO ODOR	3	1	2150B	03/09/15	L1504303-01 & L1504303-02
pH	6.5	6.7	6.5-8.5	-	4500H+-B	03/09/15	L1504303-01 & L1504303-02
SILVER (mg/L)	ND	ND	0.10	0.007	200.7	03/10/15	L1504303-01 & L1504303-02
SULFATE (mg/L)	30.7	25.6	250	5.00	300.0	03/11/15	L1504303-01 & L1504303-02
TDS (mg/L)	430	440	500	10	2540C	03/10/15	L1504303-01 & L1504303-02
ZINC (mg/L)	2.55	1.66	5	0.050	200.7	03/10/15	L1504303-01 & L1504303-02
* 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	5x dilutions for chloride and sulfate						
B	5x dilutions for chloride and sulfate						

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: *Michael J. Johnson*

Date: 03/18/15

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) <input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	Review Comments	<input type="checkbox"/> WQTS Data Entered
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Nitrate Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Sample Acidified?	Date Collected	Collected By	
A	DAY 1 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>	03/09/15	S.A.W.
B	DAY 1 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>	03/09/15	S.A.W.
C		<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>		
D		<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>		
If Resubmitted Report, list below:						
	Routine or Special Sample	Original, Resubmitted or Confirmation Report	(1) Reason for Resubmission		(2) Collection Date of Original Sample	
A	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
B	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
C	<input type="checkbox"/> RS <input type="checkbox"/> SS	<input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
D	<input type="checkbox"/> RS <input type="checkbox"/> SS	<input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).						
A	The sample was received at the laboratory above the required temperature range. The sample was transported to the laboratory in a cooler with ice and delivered directly from the sampling site. <i>New Source Approval</i>					
B	The sample was received at the laboratory above the required temperature range. The sample was transported to the laboratory in a cooler with ice and delivered directly from the sampling site. <i>New Source Approval</i>					
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	2.6	10	0.10	353.2	03/10/15	L1504303-01 & L1504303-02
B	4.1	10	0.10	353.2	03/10/15	L1504303-01 & L1504303-02
C		10				
D		10				

Finished water results equal to or exceeding 1/2 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:

Date: 03/18/15

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Secondary Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
A	DAY 3 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/11/15 S.A.W.
B	DAY 3 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/11/15 S.A.W.
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	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS <input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
B	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS <input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
SAMPLE NOTES - (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).				
A	New Source Approval			
B	New Source Approval			

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		SMCL	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
	A	B					
IRON (mg/L)	ND	ND	0.3	0.05	200.7	03/12/15	L1504573-01 & L1504573-02
MANGANESE (mg/L)	0.010	0.014	0.05*	0.010	200.7	03/12/15	L1504573-01 & L1504573-02
ALKALINITY (mg/L as CaCO3)	155	118	None	2.00	2320B	03/13/15	L1504573-01 & L1504573-02
CALCIUM (mg/L)	88	75	None	0.10	200.7	03/12/15	L1504573-01 & L1504573-02
MAGNESIUM (mg/L)	15	11	None	0.10	200.7	03/12/15	L1504573-01 & L1504573-02
HARDNESS (mg/L as CaCO3)	280	230	None	0.66	200.7	03/12/15	L1504573-01 & L1504573-02
POTASSIUM (mg/L)	4.0	2.9	None	2.5	200.7	03/12/15	L1504573-01 & L1504573-02
TURBIDITY (NTU)	0.34	0.61	None	0.20	180.1	03/11/15	L1504573-01 & L1504573-02
ALUMINUM (mg/L)	ND	ND	0.2	0.10	200.7	03/12/15	L1504573-01 & L1504573-02
CHLORIDE (mg/L)	99.6	91.8	250	2.50	300.0	03/13/15	L1504573-01 & L1504573-02
COLOR (C.U.)	ND	ND	15	5.0	2120B	03/11/15	L1504573-01 & L1504573-02
COPPER (mg/L)	ND	ND	1	0.010	200.7	03/12/15	L1504573-01 & L1504573-02
ODOR (T.O.N)	NO ODOR	NO ODOR	3	1	2150B	03/11/15	L1504573-01 & L1504573-02
pH	6.7	7.0	6.5-8.5	-	4500H+-B	03/11/15	L1504573-01 & L1504573-02
SILVER (mg/L)	ND	ND	0.10	0.007	200.7	03/12/15	L1504573-01 & L1504573-02
SULFATE (mg/L)	28.7	22.6	250	5.00	300.0	03/13/15	L1504573-01 & L1504573-02
TDS (mg/L)	388	340	500	10	2540C	03/12/15	L1504573-01 & L1504573-02
ZINC (mg/L)	0.588	1.14	5	0.050	200.7	03/12/15	L1504573-01 & L1504573-02

* 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	5x dilutions for chloride and sulfate
B	5x dilutions for chloride and sulfate

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: *Michael J. Johnson*
 Date: 03/18/15

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) <input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	Review Comments	<input type="checkbox"/> WQTS Data Entered
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Nitrate Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Sample Acidified?	Date Collected	Collected By
A	DAY 3 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>	03/11/15	S.A.W.
B	DAY 3 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>	03/11/15	S.A.W.
C		<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>		
D		<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>		
		If Resubmitted Report, list below:				
	Routine or Special Sample	Original, Resubmitted or Confirmation Report	(1) Reason for Resubmission		(2) Collection Date of Original Sample	
A	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
B	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
C	<input type="checkbox"/> RS <input type="checkbox"/> SS	<input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
D	<input type="checkbox"/> RS <input type="checkbox"/> SS	<input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).						
A	New Source Approval					
B	New Source Approval					
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	2.1	10	0.10	353.2	03/12/15	L1504573-01 & L1504573-02
B	2.6	10	0.10	353.2	03/12/15	L1504573-01 & L1504573-02
C		10				
D		10				

Finished water results equal to or exceeding 1/2 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:

Date: 03/18/15

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Volatile Organic Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Sample Acidified?	Date Collected	Collected By	
	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input checked="" type="checkbox"/>	03/14/15	S.A.W.
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:				
		(1) Reason for Resubmission	(2) Collection Date of Original Sample			
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction				
SAMPLE NOTES – Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.						
New Source Approval						

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: **M-MA086** Primary Lab Name: **ALPHA ANALYTICAL** Subcontracted? (Y/N) Y 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		03/16/15	L1504789-01	
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: <input type="checkbox"/> No: <input checked="" type="checkbox"/>				

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	0.76	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



Volatile Organic Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Sample Acidified?	Date Collected	Collected By	
	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input checked="" type="checkbox"/>	03/14/15	S.A.W.
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:				
		(1) Reason for Resubmission	(2) Collection Date of Original Sample			
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction				
SAMPLE NOTES – Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.						
New Source Approval						

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		03/16/15	L1504789-02	
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: <input type="checkbox"/> No: <input checked="" type="checkbox"/>				

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	0.89	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



Secondary Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
A	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15 S.A.W.
B	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15 S.A.W.
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	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS <input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
B	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS <input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
SAMPLE NOTES - (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).				
A	New Source Approval			
B	New Source Approval			

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		SMCL	MDL (mg/L)	Lab Method	Date Analyzed	Lab Sample ID#
	A	B					
IRON (mg/L)	ND	ND	0.3	0.05	200.7	03/18/15	L1504789-01 & L1504789-02
MANGANESE (mg/L)	ND	0.010	0.05*	0.010	200.7	03/18/15	L1504789-01 & L1504789-02
ALKALINITY (mg/L as CaCO ₃)	150	115	None	2.00	2320B	03/14/15	L1504789-01 & L1504789-02
CALCIUM (mg/L)	84	67	None	0.10	200.7	03/18/15	L1504789-01 & L1504789-02
MAGNESIUM (mg/L)	15	11	None	0.10	200.7	03/18/15	L1504789-01 & L1504789-02
HARDNESS (mg/L as CaCO ₃)	270	210	None	0.66	200.7	03/18/15	L1504789-01 & L1504789-02
POTASSIUM (mg/L)	4.5	3.0	None	2.5	200.7	03/18/15	L1504789-01 & L1504789-02
TURBIDITY (NTU)	ND	0.23	None	0.20	180.1	03/14/15	L1504789-01 & L1504789-02
ALUMINUM (mg/L)	ND	ND	0.2	0.10	200.7	03/18/15	L1504789-01 & L1504789-02
CHLORIDE (mg/L)	93.2	87.8	250	2.50	300.0	03/16/15	L1504789-01 & L1504789-02
COLOR (C.U.)	ND	ND	15	5.0	2120B	03/14/15	L1504789-01 & L1504789-02
COPPER (mg/L)	ND	ND	1	0.010	200.7	03/18/15	L1504789-01 & L1504789-02
ODOR (T.O.N)	NO ODOR	NO ODOR	3	1	2150B	03/14/15	L1504789-01 & L1504789-02
pH	6.0	6.0	6.5-8.5	-	4500H+-B	03/14/15	L1504789-01 & L1504789-02
SILVER (mg/L)	ND	ND	0.10	0.007	200.7	03/18/15	L1504789-01 & L1504789-02
SULFATE (mg/L)	28.3	22.1	250	5.00	300.0	03/16/15	L1504789-01 & L1504789-02
TDS (mg/L)	330	310	500	10	2540C	03/16/15	L1504789-01 & L1504789-02
ZINC (mg/L)	0.547	1.37	5	0.050	200.7	03/18/15	L1504789-01 & L1504789-02

* 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	5x dilutions for chloride and sulfate
B	5x dilutions for chloride and sulfate

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: *Michael Ostrowski*
 Date: 03/30/15

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) <input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	Review Comments	<input type="checkbox"/> WQTS Data Entered
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Inorganic Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information <small>*Please note all samples are considered representative of finished water if there is no treatment applied</small>	Date Collected	Collected By
	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15 S.A.W.
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:		
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	(1) Reason for Resubmission	(2) Collection Date of Original Sample	
	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).				
New Source Approval				

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	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
ARSENIC	ND	0.010	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
BARIUM	0.0145	2	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
BERYLLIUM	ND	0.004	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
CADMIUM	ND	0.005	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
CHROMIUM	ND	0.1	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
CYANIDE	ND	0.2	0.005	4500CN-CE	03/17/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
FLUORIDE ¹	ND	4.0	0.20	4500F-C	03/17/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
MERCURY ²	ND	0.002	0.0002	245.1	03/16/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
NICKEL	ND	0.1*	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
SELENIUM	ND	0.05	0.0020	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
SODIUM	20	20*	2.0	200.7	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01
THALLIUM	ND	0.002	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-01

¹Fluoride 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.
²Please 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? Yes <input type="checkbox"/>	COMPOSITE SAMPLE NOTES List the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources per sample.
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: 

Date: **03/30/2015**

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) <input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	Review Comments	<input type="checkbox"/> WQTS Data Entered
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Inorganic Contaminant Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information <small>*Please note all samples are considered representative of finished water if there is no treatment applied</small>	Date Collected	Collected By
	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle <input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15	S.A.W.
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:		
		(1) Reason for Resubmission	(2) Collection Date of Original Sample	
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).				
New Source Approval				

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	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
ARSENIC	ND	0.010	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
BARIUM	0.0335	2	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
BERYLLIUM	ND	0.004	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
CADMIUM	ND	0.005	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
CHROMIUM	ND	0.1	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
CYANIDE	ND	0.2	0.005	4500CN-CE	03/17/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
FLUORIDE ¹	ND	4.0	0.20	4500F-C	03/17/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
MERCURY ²	ND	0.002	0.0002	245.1	03/16/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
NICKEL	ND	0.1*	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
SELENIUM	ND	0.05	0.0020	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
SODIUM	22	20*	2.0	200.7	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02
THALLIUM	ND	0.002	0.0010	200.8	03/18/15	M-MA086	ALPHA ANALYTICAL	L1504789-02

¹Fluoride 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.
²Please 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? Yes <input type="checkbox"/>	COMPOSITE SAMPLE NOTES List the composited sources by DEP Source Code (XXXXXXX-XXX), up to five individual sources per sample.
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:

Date: 03/30/2015

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) <input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____	Review Comments	<input type="checkbox"/> WQTS Data Entered
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Nitrate Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Sample Acidified?	Date Collected	Collected By
A	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input checked="" type="checkbox"/>	03/14/15	S.A.W.
B	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input checked="" type="checkbox"/>	03/14/15	S.A.W.
C		<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>		
D		<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	Yes <input type="checkbox"/>		
		If Resubmitted Report, list below:				
	Routine or Special Sample	Original, Resubmitted or Confirmation Report	(1) Reason for Resubmission		(2) Collection Date of Original Sample	
A	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
B	<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
C	<input type="checkbox"/> RS <input type="checkbox"/> SS	<input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
D	<input type="checkbox"/> RS <input type="checkbox"/> SS	<input type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list the sources that were on-line during sample collection).						
A	New Source Approval					
B	New Source Approval					
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	1.7	10	0.10	353.2	03/17/15	L1504789-01
B	2.4	10	0.10	353.2	03/17/15	L1504789-02
C		10				
D		10				

Finished water results equal to or exceeding 1/2 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	L1504789-01 was analyzed for Nitrite within the method required holding time. Aliquots of sample were then preserved and analyzed for Nitrate.
B	L1504789-02 was analyzed for Nitrite within the method required holding time. Aliquots of sample were then preserved and analyzed for Nitrate.
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:

Date: 03/30/15

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Perchlorate Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15	S.A.W.
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:			
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	(1) Reason for Resubmission	(2) Collection Date of Original Sample		
		<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during collection).					
New Source Approval					

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	03/17/15	L1504789-01
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 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: _____

Michael Oshawa

Date: **03/30/2015**

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Perchlorate Report

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

PWS ID #: **TBD** City / Town: **BOXBOROUGH**
 PWS Name: **JEFFERSON AT BEAVER BROOK** PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15	S.A.W.
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:			
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	(1) Reason for Resubmission	(2) Collection Date of Original Sample		
		<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during collection).					
New Source Approval					

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	0.059	µg/L	2.0	0.050	0.050	332.0	03/17/15	L1504789-02
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 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: _____

Michael Oshover

Date: **03/30/2015**

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



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:
 PWS Name: PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
	Day 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle <input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15	
Routine or Special Sample <input type="checkbox"/> RS <input checked="" type="checkbox"/> SS		Original, Resubmitted or Confirmation Report <input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation		
		If Resubmitted Report, list below: (1) Reason for Resubmission: <input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction (2) Collection Date of Original Sample:		
SAMPLE NOTES - Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection. New Source Approval Alpha Analytical L1504817-01				

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: Primary Lab Name: Subcontracted? (Y/N)

Analytical Methods (List All)	Date Extracted	Date Analyzed	Analysis Lab MA Cert#	Analysis Lab Name	Lab Sample ID #
EPA 504.1	03/19/2015	03/19/2015	M-IN035	EEA	3207373
EPA 505	03/18/2015	03/18/2015	M-IN035	EEA	3207374
EPA 515.3	03/20/2015	03/23/2015	M-IN035	EEA	3207375
EPA 525.2	03/18/2015	03/24/2015	M-IN035	EEA	3207376

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.
 Sample container was provided by the client.

CAS#	SOC Regulated Contaminants	Results µg/L	MCL µg/L	MDL µg/L	Analytical Method
1563-66-2	CARBOFURAN		40		
23135-22-0	OXAMYL (VYDATE)		200		
94-75-7	2,4-D	< 0.1	70	0.1	EPA 515.3
93-72-1	2,4,5-TP (SILVEX)	< 0.1	50	0.1	EPA 515.3
75-99-0	DALAPON	< 1.0	200	1.0	EPA 515.3
88-85-7	DINOSEB	< 0.1	7	0.1	EPA 515.3
1918-02-1	PICLORAM	< 0.1	500	0.1	EPA 515.3
87-86-5	PENTACHLOROPHENOL	< 0.04	1	0.04	EPA 515.3
15972-60-8	ALACHLOR	< 0.7	2	0.7	EPA 525.2
1912-24-9	ATRAZINE	< 0.3	3	0.3	EPA 525.2
72-20-8	ENDRIN	< 0.28	2	0.28	EPA 525.2
76-44-8	HEPTACHLOR	< 0.04	0.4	0.04	EPA 525.2
1024-57-3	HEPTACHLOR EPOXIDE	< 0.06	0.2	0.06	EPA 525.2
58-89-9	LINDANE	< 0.07	0.2	0.07	EPA 525.2
72-43-5	METHOXYCHLOR	< 0.8	40	0.8	EPA 525.2
118-74-1	HEXACHLOROBENZENE	< 0.1	1	0.1	EPA 525.2
77-47-4	HEXACHLOROCYCLOPENTADIENE	< 1.2	50	1.2	EPA 525.2
122-34-9	SIMAZINE	< 2.0	4	2.0	EPA 525.2
50-32-8	BENZO(A)PYRENE	< 0.1	0.2	0.1	EPA 525.2
103-23-1	DI(2-ETHYLHEXYL)ADIPATE	< 0.6	400	0.6	EPA 525.2
117-81-7	DI(2-ETHYLHEXYL)PHTHALATES	< 3.0	6	3.0	EPA 525.2



Synthetic Organic Contaminant Report

Lab Report #: 336483

CAS#	SOC Regulated Contaminants	Results µg/L	MCL µg/L	MDL µg/L	Analytical Method
57-74-9	CHLORDANE	< 0.2	2	0.2	EPA 505
8001-35-2	TOXAPHENE	< 1.0	3	1.0	EPA 505
12674-11-2	PCB AROCLOR 1016	< 0.08	---	0.08	EPA 505
11104-28-2	PCB AROCLOR 1221	< 20	---	20	EPA 505
11141-16-5	PCB AROCLOR 1232	< 0.23	---	0.23	EPA 505
53469-21-9	PCB AROCLOR 1242	< 0.26	---	0.26	EPA 505
12672-29-6	PCB AROCLOR 1248	< 0.1	---	0.1	EPA 505
11097-69-1	PCB AROCLOR 1254	< 0.1	---	0.1	EPA 505
11096-82-5	PCB AROCLOR 1260	< 0.2	---	0.2	EPA 505
2051-24-3	PCBS (DECACHLOROBIPHENYL)		0.5		
Monitoring requirements for DBCP and EDB have been waived statewide for SURFACE WATER SOURCES <u>ONLY</u> . All groundwater sources must monitor for these two contaminants.					
96-12-8	DIBROMOCHLOROPROPANE (DBCP)	< 0.02	0.2	0.02	EPA 504.1
106-93-4	ETHYLENEDIBROMIDE (EDB)	< 0.02	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 e-5		

CAS#	SOC Unregulated Contaminants	Results µg/L	ORSG µg/L	MDL µg/L	Analytical Method
116-06-3	ALDICARB		3*		
1646-88-4	ALDICARB SULFONE		2*		
1646-87-3	ALDICARB SULFOXIDE		4*		
63-25-2	CARBARYL		---		
16655-82-6	3-HYDROXYCARBOFURAN		---		
16752-77-5	METHOMYL		---		
1918-00-9	DICAMBA	< 0.10	---	0.10	EPA 515.3
309-00-2	ALDRIN	< 0.18	---	0.18	EPA 525.2
23184-66-9	BUTACHLOR	< 0.84	---	0.84	EPA 525.2
60-57-1	DIELDRIN	< 0.04	---	0.04	EPA 525.2
51218-45-2	METOLACHLOR	< 1.65	---	1.65	EPA 525.2
21087-64-9	METRIBUZIN	< 0.33	100*	0.33	EPA 525.2
1918-16-7	PROPACHLOR	< 1.1	---	1.1	EPA 525.2

Surrogate Name	% Recovery (70-130%)	Method
4,4'-DICHLOROBIPHENYL	101	525.2
2,4,5,6-TETRACHLORO-M-XYLENE	96	525.2
TRIPHENYLPHOSPHATE	111	525.2
2,4-DICHLOROPHENYLACETIC ACID	82	515.3

Note: This report may not be reproduced, except in full, without written approval from EEA.

Note: The results presented relate only to the samples provided for analysis.

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.

Authorized Signature: Joni Van Nieuw ASM

Date: 2015-04-01

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) <input type="checkbox"/> Accepted _____ <input checked="" type="checkbox"/> Approved _____	Review Comments	<input type="checkbox"/> WQTS Data Entered
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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:
 PWS Name: PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By	
	Day 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15	
Routine or Special Sample		If Resubmitted Report, list below:			
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	(1) Reason for Resubmission		(2) Collection Date of Original Sample	
		<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES - Such as, if a Manifold/Multiple sample, list the source(s) that were on-line during sample collection.					
New Source Approval Alpha Analytical L1504817-02					

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: Primary Lab Name: Subcontracted? (Y/N)

Analytical Methods (List All)	Date Extracted	Date Analyzed	Analysis Lab MA Cert#	Analysis Lab Name	Lab Sample ID #
EPA 504.1	03/19/2015	03/19/2015	M-IN035	EEA	3207377
EPA 505	03/18/2015	03/18/2015	M-IN035	EEA	3207378
EPA 515.3	03/20/2015	03/23/2015	M-IN035	EEA	3207379
EPA 525.2	03/18/2015	03/24/2015	M-IN035	EEA	3207380

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.

Sample container was provided by the client.

CAS#	SOC Regulated Contaminants	Results µg/L	MCL µg/L	MDL µg/L	Analytical Method
1563-66-2	CARBOFURAN		40		
23135-22-0	OXAMYL (VYDATE)		200		
94-75-7	2,4-D	< 0.1	70	0.1	EPA 515.3
93-72-1	2,4,5-TP (SILVEX)	< 0.1	50	0.1	EPA 515.3
75-99-0	DALAPON	< 1.0	200	1.0	EPA 515.3
88-85-7	DINOSEB	< 0.1	7	0.1	EPA 515.3
1918-02-1	PICLORAM	< 0.1	500	0.1	EPA 515.3
87-86-5	PENTACHLOROPHENOL	< 0.04	1	0.04	EPA 515.3
15972-60-8	ALACHLOR	< 0.7	2	0.7	EPA 525.2
1912-24-9	ATRAZINE	< 0.3	3	0.3	EPA 525.2
72-20-8	ENDRIN	< 0.28	2	0.28	EPA 525.2
76-44-8	HEPTACHLOR	< 0.04	0.4	0.04	EPA 525.2
1024-57-3	HEPTACHLOR EPOXIDE	< 0.06	0.2	0.06	EPA 525.2
58-89-9	LINDANE	< 0.07	0.2	0.07	EPA 525.2
72-43-5	METHOXYCHLOR	< 0.8	40	0.8	EPA 525.2
118-74-1	HEXACHLOROBENZENE	< 0.1	1	0.1	EPA 525.2
77-47-4	HEXACHLOROCYCLOPENTADIENE	< 1.2	50	1.2	EPA 525.2
122-34-9	SIMAZINE	< 2.0	4	2.0	EPA 525.2
50-32-8	BENZO(A)PYRENE	< 0.1	0.2	0.1	EPA 525.2
103-23-1	DI(2-ETHYLHEXYL)ADIPATE	< 0.6	400	0.6	EPA 525.2
117-81-7	DI(2-ETHYLHEXYL)PHTHALATES	< 3.0	6	3.0	EPA 525.2



Synthetic Organic Contaminant Report

Lab Report #: 336483

Table with 6 columns: CAS#, SOC Regulated Contaminants, Results µg/L, MCL µg/L, MDL µg/L, Analytical Method. Rows include CHLORDANE, TOXAPHENE, PCB AROCLOR 1016, 1221, 1232, 1242, 1248, 1254, 1260, PCBS (DECACHLOROBIPHENYL), DIBROMOCHLOROPROPANE (DBCP), ETHYLENEDIBROMIDE (EDB), DIQUAT, ENDOTHALL, GLYPHOSATE, 2,3,7,8-TCDD (DIOXIN).

Table with 6 columns: CAS#, SOC Unregulated Contaminants, Results µg/L, ORSG µg/L, MDL µg/L, Analytical Method. Rows include ALDICARB, ALDICARB SULFONE, ALDICARB SULFOXIDE, CARBARYL, 3-HYDROXYCARBOFURAN, METHOMYL, DICAMBA, ALDRIN, BUTACHLOR, DIELDRIN, METOLACHLOR, METRIBUZIN, PROPACHLOR.

Table with 3 columns: Surrogate Name, % Recovery (70-130%), Method. Rows include 4,4'-DICHLOROBIPHENYL, 2,4,5,6-TETRACHLORO-M-XYLENE, TRIPHENYLPHOSPHATE, 2,4-DICHLOROPHENYLACETIC ACID.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Note: The results presented relate only to the samples provided for analysis.

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.

Authorized Signature:

Jan Van Nieu ASM

Date: 2015-04-01

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



Synthetic Organic Contaminant Report

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

PWS ID #:	<input type="text"/>	City / Town:	BOXBOROUGH
PWS Name:	Jefferson At Beaver Brook	PWS Class:	COM <input checked="" type="checkbox"/> NTNC <input type="checkbox"/> TNC <input type="checkbox"/>

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
	Day 5 Ws-1	<input type="checkbox"/> (M)ultiple <input checked="" type="checkbox"/> (S)ingle	3/14/2015	
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:		
		(1) Reason for Resubmission	(2) Collection Date of Original Sample	
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).				
New source approval				

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #:	M-MA086	Primary Lab Name:	Alpha Analytical	Subcontracted? (Y/N)	Y
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Analytical Methods (List All)	Date Extracted	Date Analyzed	Analysis Lab MA Cert#	Analysis Lab Name	Lab Sample ID#
EPA 531.1	3/26/2015	3/27/2015	M-NH003	Granite State Analytical	150310291

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.
<input type="checkbox"/>	
LAB SAMPLE NOTES - Information on matrix spike/method blank sample information is on file at our office.	
Alpha Job L1504817-01	

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		70		
93-72-1	2,4,5-TP (SILVEX)		50		
75-99-0	DALAPON		200		
88-85-7	DINOSEB		7		
1918-02-1	PICLORAM		500		
87-86-5	PENTACHLOROPHENOL		1		
15972-60-8	ALACHLOR		2		
1912-24-9	ATRAZINE		3		
72-20-80	ENDRIN		2		
76-44-8	HEPTACHLOR		0.4		
1024-57-3	HEPTACHLOR EPOXIDE		0.2		
58-89-9	LINDANE		0.2		
72-43-5	METHOXYCHLOR		40		
118-74-1	HEXACHLORO BENZENE		1		
77-47-4	HEXACHLOROCYCLOPENTADIENE		50		
122-34-9	SIMAZINE		4		
50-32-8	BENZO(A)PYRENE		0.2		
103-23-1	DI(2-ETHYLHEXYL)ADIPATE		400		
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE		6		



Synthetic Organic Contaminant Report

PWS ID#: Lab Sample ID#:

150310291

CAS #	SOC Regulated Contaminants	Result µg/L	MCL µg/L	MDL µg/L	Analytical Method
57-74-9	CHLORDANE		2		
8001-35-2	TOXAPHENE		3		
12674-11-2	PCB AROCLOR 1016		---		
11104-28-2	PCB AROCLOR 1221		---		
11141-16-5	PCB AROCLOR 1232		---		
53469-21-9	PCB AROCLOR 1242		---		
12672-29-6	PCB AROCLOR 1248		---		
11097-69-1	PCB AROCLOR 1254		---		
11096-82-5	PCB AROCLOR 1260		---		
1336-36-3	PCBS (DECACHLOROBIPHENYL)		0.5		
Monitoring requirements for DBCP and EDB have been waived statewide for SURFACE WATER SOURCES <u>ONLY</u> . All groundwater sources must monitor for these two contaminants.					
96-12-8	DIBROMOCHLOROPROPANE (DBCP)		0.2		
106-93-4	ETHYLENEDIBROMIDE (EDB)		0.02		
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)		3.0x10 ⁻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		---		
309-00-2	ALDRIN		---		
23184-66-9	BUTACHLOR		---		
60-57-1	DIELDRIN		---		
51218-45-2	METOLACHLOR		---		
21087-64-9	METRIBUZIN		100*		
1918-16-7	PROPACHLOR		---		

* 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%)

Method	Surrogate Name	% Recovery (70 - 130%)

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: _____


4/15/15

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved		



Synthetic Organic Contaminant Report

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

PWS ID #:	<input type="text"/>	City / Town:	BOXBOROUGH
PWS Name:	Jefferson At Beaver Brook	PWS Class:	COM <input checked="" type="checkbox"/> NTNC <input type="checkbox"/> TNC <input type="checkbox"/>

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
	Day 5 Ws-2	<input type="checkbox"/> (M)ultiple <input checked="" type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	3/14/2015
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:		
		(1) Reason for Resubmission	(2) Collection Date of Original Sample	
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction		
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line during sample collection).				
New source approval				

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #:	M-MA086	Primary Lab Name:	Alpha Analytical	Subcontracted? (Y/N)	Y
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Analytical Methods (List All)	Date Extracted	Date Analyzed	Analysis Lab MA Cert#	Analysis Lab Name	Lab Sample ID#
EPA 531.1	3/26/2015	4/1/2015	M-NH003	Granite State Analytical	150310292

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.
<input type="checkbox"/>	
LAB SAMPLE NOTES - Information on matrix spike/method blank sample information is on file at our office.	
Alpha Job L1504817-02	

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		70		
93-72-1	2,4,5-TP (SILVEX)		50		
75-99-0	DALAPON		200		
88-85-7	DINOSEB		7		
1918-02-1	PICLORAM		500		
87-86-5	PENTACHLOROPHENOL		1		
15972-60-8	ALACHLOR		2		
1912-24-9	ATRAZINE		3		
72-20-80	ENDRIN		2		
76-44-8	HEPTACHLOR		0.4		
1024-57-3	HEPTACHLOR EPOXIDE		0.2		
58-89-9	LINDANE		0.2		
72-43-5	METHOXYCHLOR		40		
118-74-1	HEXACHLORO BENZENE		1		
77-47-4	HEXACHLOROCYCLOPENTADIENE		50		
122-34-9	SIMAZINE		4		
50-32-8	BENZO(A)PYRENE		0.2		
103-23-1	DI(2-ETHYLHEXYL)ADIPATE		400		
117-81-7	DI(2-ETHYLHEXYL)PHTHALATE		6		



Synthetic Organic Contaminant Report

PWS ID#: Lab Sample ID#:

CAS #	SOC Regulated Contaminants	Result µg/L	MCL µg/L	MDL µg/L	Analytical Method
57-74-9	CHLORDANE		2		
8001-35-2	TOXAPHENE		3		
12674-11-2	PCB AROCLOR 1016		---		
11104-28-2	PCB AROCLOR 1221		---		
11141-16-5	PCB AROCLOR 1232		---		
53469-21-9	PCB AROCLOR 1242		---		
12672-29-6	PCB AROCLOR 1248		---		
11097-69-1	PCB AROCLOR 1254		---		
11096-82-5	PCB AROCLOR 1260		---		
1336-36-3	PCBS (DECACHLOROBIPHENYL)		0.5		
Monitoring requirements for DBCP and EDB have been waived statewide for SURFACE WATER SOURCES <u>ONLY</u> . All groundwater sources must monitor for these two contaminants.					
96-12-8	DIBROMOCHLOROPROPANE (DBCP)		0.2		
106-93-4	ETHYLENEDIBROMIDE (EDB)		0.02		
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)		3.0x10 ⁻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		---		
309-00-2	ALDRIN		---		
23184-66-9	BUTACHLOR		---		
60-57-1	DIELDRIN		---		
51218-45-2	METOLACHLOR		---		
21087-64-9	METRIBUZIN		100*		
1918-16-7	PROPACHLOR		---		

* 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%)

Method	Surrogate Name	% Recovery (70 - 130%)

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: 4/15/15

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved		



Radionuclide Report

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

PWS ID #: **TDB** City / Town: **Boxborough**
 PWS Name: **Jefferson At Beaver Brook** PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15

Routine or Special Sample <input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	Original, Resubmitted or Confirmation Report <input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	If Resubmitted Report, list below:	
		(1) Reason for Resubmission <input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction	(2) Collection Date of Original Sample

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

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? <input type="checkbox"/>	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

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID#	Analysis Lab MA Cert#	Analysis Lab Name
GROSS ALPHA (pCi/L)	3.7	2.8		2.0	SM 7110 B	03/31/2015	C245/15-1	CO00008	Hazen Research
URANIUM – activity (pCi/L)	2.8			0.5	ICP-MS 200.2	03/24/2015	369182004	M-SC012	GEL Laboratories

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)	0.9	----		The MCL for <i>Adjusted Gross Alpha</i> (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.					
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URANIUM – mass (µg/L)	4.1			0.7	ICP-MS 200.2	03/24/2015	369182004	M-SC012	GEL Laboratories
-----------------------	------------	--	--	-----	--------------	------------	-----------	---------	------------------

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)	0.1	0.2		0.1	SM 7500-Ra B	04/01/2015	C245/15-1	CO00008	Hazen Research
RADIUM-228 (pCi/L)	0.0	0.5		0.5	EPA Ra-05	03/31/2015	C245/15-1	CO00008	Hazen Research
COMBINED RADIUM (pCi/L)	0.1	----	5	The MCL for <i>Combined Radium</i> (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)	1.5	3.2	*	3.1	SM 7110 B	03/31/2015	C245/15-1	CO00008	Hazen Research
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*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)			**						
---------------	--	--	----	--	--	--	--	--	--

**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:

Jerry Hogan, Hazen Research, Inc.

Date: **4/13/2015**

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Radionuclide Report

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

PWS ID #: **TDB** City / Town: **Boxborough**
 PWS Name: **Jefferson At Beaver Brook** PWS Class: **COM** **NTNC** **TNC**

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information	Date Collected	Collected By
	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	03/14/15
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:		
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	(1) Reason for Resubmission	(2) Collection Date of Original Sample	
<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction				
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line line during sample collection).				
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? <input type="checkbox"/>	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	

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID#	Analysis Lab MA Cert#	Analysis Lab Name
GROSS ALPHA (pCi/L)	3.9	2.6		1.8	SM 7110 B	03/31/2015	C245/15-2	CO00008	Hazen Research
URANIUM – activity (pCi/L)	2.5			0.5	ICP-MS 200.2	03/24/2015	369182005	M-SC012	GEL Laboratories
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 <input type="checkbox"/>									
ADJUSTED GROSS ALPHA (pCi/L)	1.4	----			The MCL for <i>Adjusted Gross Alpha</i> (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.				

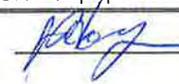
URANIUM – mass (µg/L)	3.6			0.7	ICP-MS 200.2	03/24/2015	369182014	M-SC012	GEL Laboratories
Report Uranium result and MDL in (µg/L) as analyzed, otherwise use formula to calculate [Uranium pCi/L / 0.67 = Uranium µg/L]. Check this box if result is calculated <input type="checkbox"/>									

RADIUM-226 (pCi/L)	0.1	0.2		0.1	SM 7500-Ra B	04/01/2015	C245/15-2	CO00008	Hazen Research
RADIUM-228 (pCi/L)	0.3	0.6		0.6	EPA Ra-05	03/31/2015	C245/15-2	CO00008	Hazen Research
COMBINED RADIUM (pCi/L)	0.4	----	5	The MCL for <i>Combined Radium</i> (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)	0.2	3.4	*	3.4	SM 7110 B	03/31/2015	C245/15-2	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)			**						
**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:  Jerry Hogan, Hazen Research, Inc.
 Date: **4/13/2015**

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Radionuclide Report

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

PWS ID #: City / Town:
 PWS Name: PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	DAY 5 WS-1	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	14-MAR-15	
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:			
		(1) Reason for Resubmission		(2) Collection Date of Original Sample	
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line line during sample collection).					
New Source Approval					

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: Primary Lab Name: Subcontracted? (Y/N)

Was this sample composited by the Lab?	COMPOSITE SAMPLE NOTES
<input type="checkbox"/>	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	

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID#	Analysis Lab MA Cert#	Analysis Lab Name
GROSS ALPHA (pCi/L)									
URANIUM – activity (pCi/L)									
Report Uranium result and MDL in (pCi/L) as analyzed, otherwise use formula to calculate [Uranium $\mu\text{g/L} \times 0.67 = \text{Uranium pCi/L}$]. Check this box if result is calculated <input type="checkbox"/>									
ADJUSTED GROSS ALPHA (pCi/L)		----	15		The MCL for <i>Adjusted Gross Alpha</i> (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 ($\mu\text{g/L}$)			30						
Report Uranium result and MDL in ($\mu\text{g/L}$) as analyzed, otherwise use formula to calculate [Uranium pCi/L / 0.67 = Uranium $\mu\text{g/L}$]. Check this box if result is calculated <input type="checkbox"/>									
RADIUM-226 (pCi/L)									
RADIUM-228 (pCi/L)									
COMBINED RADIUM (pCi/L)		----	5		The MCL for <i>Combined Radium</i> (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)			*						
*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)	4140		**		EPA 913.0	3/16/15	1207766	n/a	Accustar Labs
**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: Lisa L.

Date: Laflamme

Digitally signed by Lisa L. Laflamme
 DN: cn=Lisa L. Laflamme, o=Spruce
 Environmental and GeoStar Labs,
 email=llaflamme@accustarlabs.com, c=US
 Date: 2015.04.17 09:16:04 -0400'

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		



Radionuclide Report

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

PWS ID #: City / Town:
 PWS Name: PWS Class: COM NTNC TNC

DEP LOCATION (LOC) ID#	DEP Location Name	Sample Information		Date Collected	Collected By
	DAY 5 WS-2	<input type="checkbox"/> (M)ultiple <input type="checkbox"/> (S)ingle	<input checked="" type="checkbox"/> (R)aw <input type="checkbox"/> (F)inished	14-MAR-15	
Routine or Special Sample	Original, Resubmitted or Confirmation Report	If Resubmitted Report, list below:			
<input type="checkbox"/> RS <input checked="" type="checkbox"/> SS	<input checked="" type="checkbox"/> Original <input type="checkbox"/> Resubmitted <input type="checkbox"/> Confirmation	(1) Reason for Resubmission		(2) Collection Date of Original Sample	
		<input type="checkbox"/> Resample <input type="checkbox"/> Reanalysis <input type="checkbox"/> Report Correction			
SAMPLE NOTES – (Such as, if a Manifold/Multiple sample, list any sources that were on-line line during sample collection).					
New Source Approval					

II. ANALYTICAL LABORATORY INFORMATION:

Primary Lab MA Cert. #: Primary Lab Name: Subcontracted? (Y/N)

Was this sample composited by the Lab?	COMPOSITE SAMPLE NOTES
<input type="checkbox"/>	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	

Contaminant	RESULT	Std Dev (+/-)	MCL	MDL	Lab Method	Date Analyzed	Lab Sample ID#	Analysis Lab MA Cert#	Analysis Lab Name
GROSS ALPHA (pCi/L)									
URANIUM – activity (pCi/L)									
Report Uranium result and MDL in (pCi/L) as analyzed, otherwise use formula to calculate [Uranium $\mu\text{g/L} \times 0.67 = \text{Uranium pCi/L}$]. Check this box if result is calculated <input type="checkbox"/>									
ADJUSTED GROSS ALPHA (pCi/L)		----	15		The MCL for <i>Adjusted Gross Alpha</i> (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 ($\mu\text{g/L}$)			30						
Report Uranium result and MDL in ($\mu\text{g/L}$) as analyzed, otherwise use formula to calculate [Uranium pCi/L / 0.67 = Uranium $\mu\text{g/L}$]. Check this box if result is calculated <input type="checkbox"/>									
RADIUM-226 (pCi/L)									
RADIUM-228 (pCi/L)									
COMBINED RADIUM (pCi/L)		----	5		The MCL for <i>Combined Radium</i> (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)			*						
*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)	2950		**		EPA 913.0	3/16/15	1207767	n/a	Accustar Labs
**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: Lisa L.

Date: Laflamme

Digitally signed by Lisa L. Laflamme
 DN: cn=Lisa L. Laflamme, o=Spruce
 Environmental and GeoStar Labs,
 email=llaflamme@accustarlabs.com, c=US
 Date: 2015.04.17 09:16:04 -0400'

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	<input type="checkbox"/> WQTS Data Entered
<input type="checkbox"/> Accepted _____ <input type="checkbox"/> Disapproved _____		

APPENDIX E

WATER SYSTEM PRODUCT SHEETS



TECHNICAL BROCHURE

B5-75GSX R2



GS-CBM GS Xtreme™

60 HZ, 4" SUBMERSIBLE PUMPS

FEATURES

Field Proven Design: The GS Xtreme features super strong construction due to the welded casing joints at both ends. The proprietary engineered polymer bearings have been field proven with great success in some of the toughest submersible pump applications on the planet - coalbed methane extraction. They are the deepest set pumps we build, available up to 10 HP in many models. Capable of pumping over 1600' TDH.

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Sand Handling Design: Our face clearance, floating impeller stack has proven itself for over 50 years as a superior sand handling, durable pump design.

Stainless Steel Metal Parts: AISI types 302, 303 and 304 are corrosion resistant, non-toxic and non-leaching.

FDA Compliant Non-Metallic Parts: Impellers, diffusers and bearing spiders are constructed of glass filled engineered composites. They are corrosion resistant and non-toxic.

Discharge Head: Cast stainless steel discharge head features built-in safety loops and an upthrust limiting stud which is factory set to prevent the rotating assembly from upthrusting. These pumps require a separate field installed external check valve to prevent backflow.

"GS" SERIES MATERIALS OF CONSTRUCTION

Part Name	Material
Discharge Head	AISI 303 SS
Bearing Spider - Upper	Glass Filled Engineered Composite
Bearing	Proprietary Engineered Composite
Klipring	AISI 301 SS
Diffuser	Glass Filled Engineered Composite
Impeller	
Bowl	AISI 304 SS
Intermediate Sleeve*	AISI 304 SS, Powder Metal
Intermediate Shaft Coupling*	AISI 304 SS, Powder Metal
Intermediate Bearing Spider*	Glass Filled Engineered Composite
Intermediate Bearing Spider*	AISI 303 SS
Shim	AISI 304 SS
Screws - Cable Guard	AISI 304 SS
Motor Adapter	AISI 303 SS
Casing	AISI 304 SS
Shaft (up to 3 HP)	
Shaft (5 HP and larger)	
Coupling	AISI 304 SS, Powder Metal
Cable Guard	AISI 304 SS
Suction Screen	AISI 304 SS

* Used on larger models.

Bowls: Stainless steel for strength and abrasive resistance.

Check Valve: Not supplied, order separately, pumps have 2" NPT discharge threads.

Stainless Steel Casing: Polished stainless steel is strong, attractive and corrosion resistant.

Hex Shaft Design: Six sided shafts for positive impeller drive.

Shaft Coupling: Exposed for ease of field alignment to motor shaft and to check pump rotation.

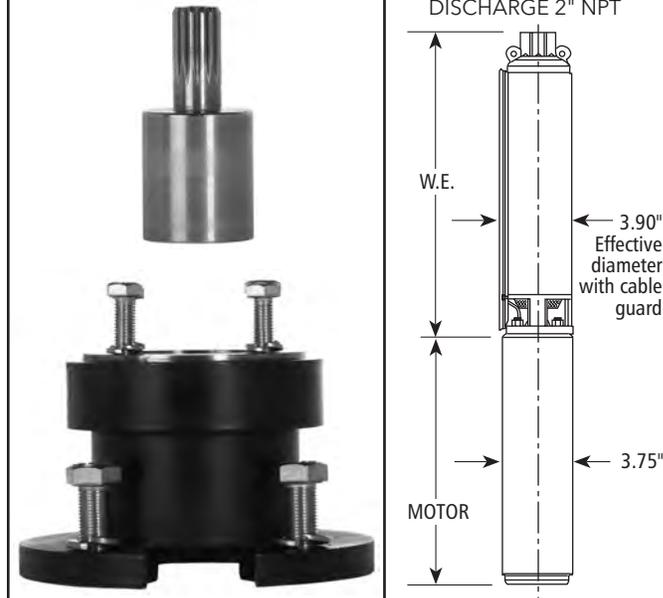
Bearings: Proprietary engineered polymer bearing material is a super strong, abrasion and heat resistant design.

MODELS AND SPECIFICATIONS

Model	Flow Range GPM	HP Range	Best Eff. GPM	Discharge Connection	Minimum Well Size
5GS	1.2 - 7.5	½ - 3	5	2"	4"
7GS	1.5 - 10	½ - 5	7	2"	4"
10GS	3 - 16	1 - 5	10	2"	4"
18GS	6 - 28	1 - 10	18	2"	4"
25GS	8 - 33	1 - 10	25	2"	4"
33GS	10 - 50	1 - 10	33	2"	4"
40GS	20 - 65	1½ - 7½	40	2"	4"
55GS	20 - 80	1½ - 10	55	2"	4"
75GS	40 - 100	3 - 10	75	2"	4"

Rotation on all units is counterclockwise when viewed from pump discharge end.

An optional 4" x 6" Adapter - Part No. **ADAPT46** is available for installations where a 6" motor is desired. The kit contains a 4" x 6" adapter, a 4" to 6" splined shaft extension and required bolts.



DIMENSIONS AND WEIGHTS

Model	HP	Stages	Length (W.E.)	W.E. Weight (lbs.)
5GS05CBM	½	12	14.8	9
5GS07CBM	¾	15	16.8	10
5GS10CBM	1	20	20.0	12
5GS15CBM	1½	26	25.3	15
5GS20CBM	2	33	30.1	19
5GS30CBM	3	46	42.7	25
7GS05CBM	½	10	13.3	8
7GS07CBM	¾	13	15.4	10
7GS10CBM	1	17	18.3	11
7GS15CBM	1½	22	21.9	13
7GS20CBM	2	27	26.6	16
7GS30CBM	3	34	31.6	20
7GS50CBM	5	54	49.6	28
10GS10CBM	1	12	14.4	10
10GS15CBM	1½	17	17.9	12
10GS20CBM	2	20	20.0	13
10GS30CBM	3	27	26.0	17
10GS50RCBM	5	35	32.5	21
10GS50CBM	5	42	36.3	22
18GS10CBM	1	8	13.0	8
18GS15CBM	1½	11	15.5	10
18GS20CBM	2	14	18.1	11
18GS30CBM	3	19	22.4	13
18GS50RCBM	5	24	27.8	16
18GS50CBM	5	30	33.9	19
18GS75CBM	7½	45	46.7	30
18GS100CBM	10	60	61.7	39

Model	HP	Stages	Length (W.E.)	W.E. Weight (lbs.)
25GS10CBM	1	7	12.8	7
25GS15CBM	1½	9	14.6	9
25GS20CBM	2	11	16.5	10
25GS30CBM	3	15	20.2	12
25GS50RCBM	5	22	28	16
25GS50CBM	5	25	30.9	19
25GS75CBM	7½	34	40.5	24
25GS100CBM	10	50	58.0	31
33GS10CBM	1	6	14.2	9
33GS15CBM	1½	8	16.6	10
33GS20CBM	2	10	19.1	11
33GS30CBM	3	14	24	14
33GS50CBM	5	22	35.1	20
33GS75CBM	7½	34	50.6	28
33GS100CBM	10	44	62.9	34
40GS15CBM	1½	5	13.0	8
40GS20CBM	2	6	14.2	9
40GS30CBM	3	8	16.6	10
40GS50CBM	5	14	24.0	14
40GS75CBM	7½	21	34.0	20
55GS15CBM	1½	5	17.1	10
55GS20CBM	2	7	21.2	13
55GS30CBM	3	9	25.3	16
55GS50CBM	5	15	39.0	23
55GS75CBM	7½	22	54.0	31
55GS100CBM	10	29	68.8	39
75GS30CBM	3	7	24.1	15
75GS50CBM	5	11	34.8	20
75GS75CBM	7½	16	48.2	28
75GS100CBM	10	21	64.0	35

← WS-1
← WS-2

CENTRIPRO 4" SINGLE PHASE MOTORS

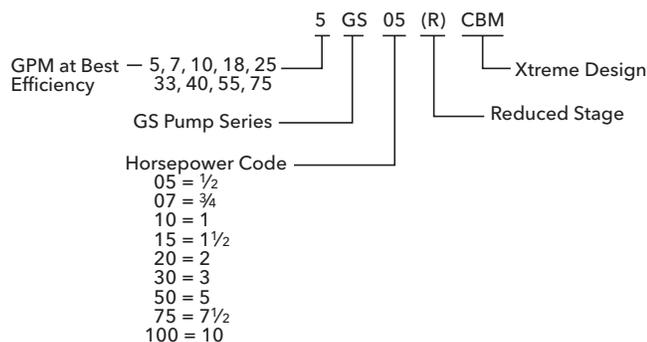
Order No.	Type	HP	Volts	Length		Weight	
				In.	MM	Lb.	Kg.
M05421	2-wire PSC	½	115	11.0	279	19.2	8.7
M05422		½	230	11.0	279	19.2	8.7
M07422		¾		12.4	314	22.7	10.3
M10422		1		13.3	337	24.5	11.1
M15422		1½		14.9	378	28.9	13.1
M05411	3-wire	½		115	10.0	253	18.9
M05412		½	9.7	246	18.1	8.2	
M07412		¾	10.8	275	21.4	9.7	
M10412		1	11.7	297	23.1	10.5	
M15412		1½	13.6	345	27.4	12.4	
M20412		2	15.1	383	31.0	14.1	
M30412		3	WS-1	18.3	466	40.0	18.1
M50412		5	WS-2	27.7	703	70.0	31.8



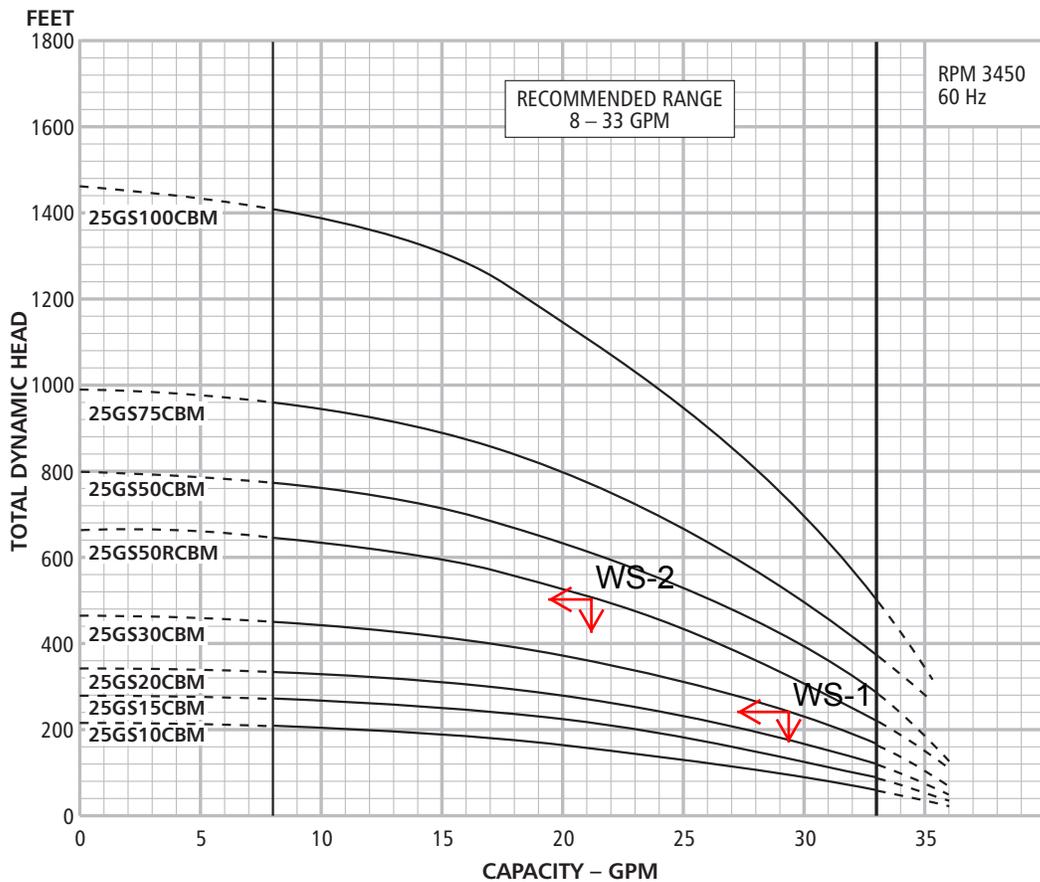
CENTRIPRO 4" THREE PHASE MOTORS

Order No.	HP	Volts	Length		Weight		
			In.	MM	Lb.	Kg.	
M05430	½	200	10.8	275	22	9.7	
M07430	¾		10.8	275	22	9.7	
M10430	1		11.7	297	23.1	10.5	
M15430	1½		11.7	297	23.1	10.5	
M20430	2		13.8	351	27.4	12.4	
M30430	3		15.3	389	32	14.5	
M50430	5		21.7	550	55	24.9	
M75430	7½		27.7	703	70	31.8	
M05432	½		230	10.8	275	22	9.7
M07432	¾			10.8	275	22	9.7
M10432	1	11.7		297	23.1	10.5	
M15432	1½	11.7		297	23.1	10.5	
M20432	2	13.8		351	27.4	12.4	
M30432	3	15.3		389	32	14.5	
M50432	5	21.7		550	55	24.9	
M75432	7½	27.7		703	70	31.8	
M05434	½	460		10.8	275	22	9.7
M07434	¾			10.8	275	22	9.7
M10434	1		11.7	297	23.1	10.5	
M15434	1½		11.7	297	23.1	10.5	
M20434	2		13.8	351	27.4	12.4	
M30434	3		15.3	389	32	14.5	
M50434	5		21.7	550	55	24.9	
M75434	7½		27.7	703	70	31.8	
M100434	10		30.7	780	78	35.4	

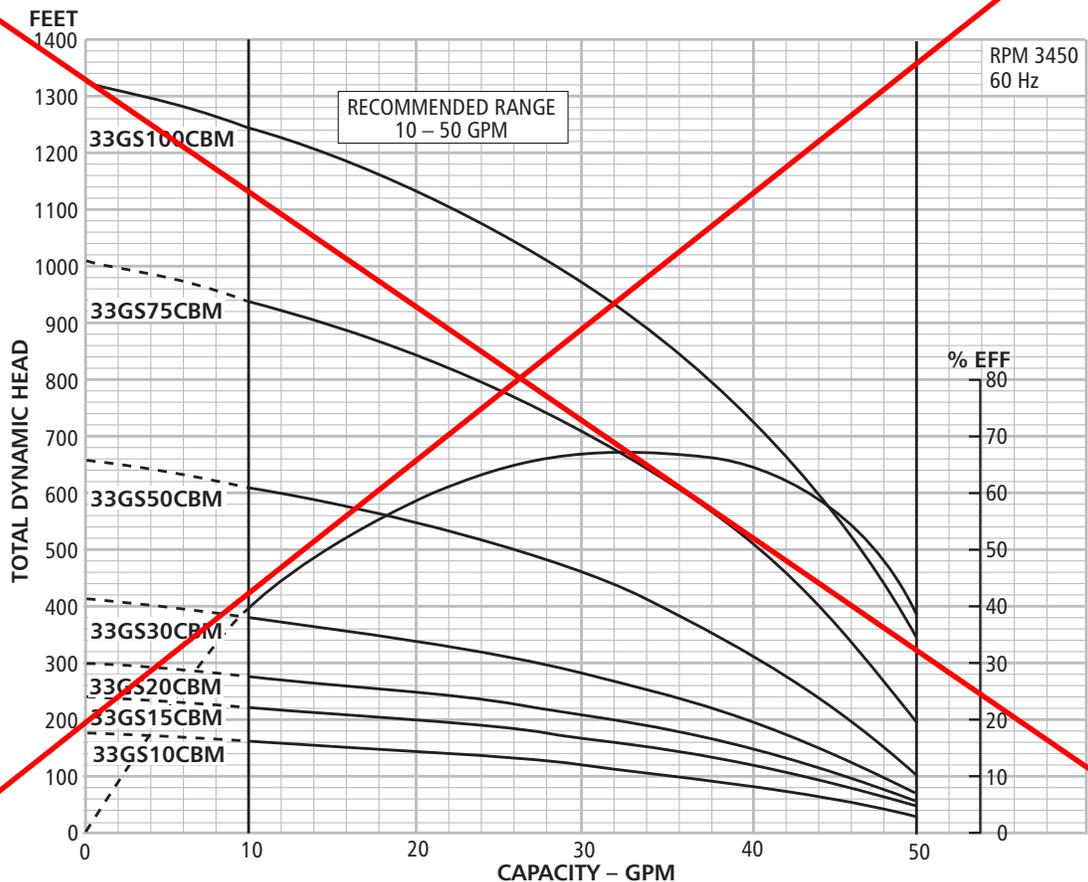
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