

LARGE GROUNDWATER WITHDRAWAL PERMIT APPLICATION NOTIFICATION FORM

**NOTICE OF SUBMITTAL TO THE
NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES**

PROJECT LOCATION

Site Name and Owner (if different than Applicant)	AQUARION Well 22
Address	Little River Road, Hampton, NH
Tax Map/Lot Number	Map 165 / Block 1
Municipality(s) in Potential Impact Area	Hampton, North Hampton
Community Water Supplier(s) in Potential Impact Area	Aquarion Water Co. of NH

APPLICANT

Name	Carl McMorrان
Affiliation	Aquarion Water Company
Mailing Address	7 Scott Road, Hampton, NH 03842
Phone Number	(603) 926-3319
Email Address	CMcMorrان@aquarionwater.com

APPLICATION PREPARER (provide imprint of professional license stamp)

Name	David Niemeyer, P.G.
Company Name	Geosphere Environmental Management, Inc.
Mailing Address	51 Portsmouth Avenue, Exeter, NH 03833
Phone Number	(603) 773-0075 ext. 12
Email Address	DNiemeyer@geospherenh.com

*Notice to application preparer: Provide copies of certified mail receipts to NHDES immediately following each submittal.

For additional information contact Christine Bowman at (603) 271-8866 or christine.bowman@des.nh.gov or Stephen Roy at (603) 271-3918 or stephen.roy@des.nh.gov.

SUBMITTAL INFORMATION

SUBMITTAL TYPE	DATED: _____	PROJECT TYPE
<input checked="" type="checkbox"/> Preliminary Application		<input checked="" type="checkbox"/> Public Water Supply
<input type="checkbox"/> Preliminary Application – Supplemental Information		<input type="checkbox"/> Bottled/Bulk Water Supply
<input type="checkbox"/> Final Report		<input type="checkbox"/> Irrigation Water Supply
<input type="checkbox"/> Final Report – Supplemental Information		<input type="checkbox"/> Process Water Supply
<input type="checkbox"/> Permit Renewal Application		<input type="checkbox"/> Other: _____
<input type="checkbox"/> Other: _____		

1. Type of proposed water source: X Bedrock well(s), Overburden well(s), Spring
2. Number of proposed water sources: 1
3. Proposed cumulative withdrawal volume in gallons per day: 1.35 x10⁶

Project Summary: (please provide a brief description of your proposed project in the space below)

AQUARION is seeking a Large Groundwater Withdrawal Permit for a new bedrock public water supply well in Hampton, NH. A preliminary estimates of the potential yield of Well 22 is up to 940 gallons per minute (gpm) or approximately 1,350,000 gallons per day (gpd). Well 22 is located approximately 120 feet from AQUARION's Well 7, a sand and gravel packed public water supply well which yields over 500 gpm. Aquarion Water Company provides drinking water to Hampton, North Hampton, and parts of Rye NH.

NOTE: Per RSA 485-C:21, the deadline to request a public hearing for this project is fifteen (15) days following receipt of the Preliminary Application or Final Report. See the attached NHDES fact sheet WD-DWGB-22-15 regarding the permitting process.



Large Production Wells and Wells for
Large Community Water Systems
Drinking Water and Groundwater Bureau



Rule: Env-Dw 302

REPORT COVER PAGE

PROJECT NAME	AQUARION Well 22
PROJECT TOWN	Hampton, NH
PWS ID	1051010

APPLICANT (Project/Water System Owner)

Name	Aquarion Water Company of New Hampshire
Mailing Address	7 Scott Road, Hampton, NH, 03842
Daytime Phone Number	603-926-3319
Email Address	cmcmorran@aquarionwater.com

WELL SITE OWNER (Property Owner)

Name	Aquarion Water Company of New Hampshire
Mailing Address	7 Scott Road, Hampton, NH 03842
Daytime Phone Number	603-926-3319
Email Address	cmcmorran@aquarionwater.com

PROJECT CONTACT/REPORT PREPARER

Name	David Niemeyer, P.G.
Company Name	Geosphere Environmental Management, Inc.
Mailing Address	51 Portsmouth Ave., Exeter, NH 03833
Daytime Phone Number	603-773-0075 ext. 12
Email Address	dniemeyer@geospherenh.com

PUMPING TEST PERFORMER/CONTACT

Name	David Niemeyer, P.G.
Mailing Address	Geosphere Environmental Management, Inc.
Daytime Phone Number	603-773-0075 ext. 12
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SUBMITTAL INFORMATION

1. Project Type:
 - a. New well(s) for New System
 - b. New well(s) for Existing System
 - c. Replacement well(s) for Existing System
 - d. Hydrofractured or Deepened well(s) for Existing System

2. Proposed permitted production volume in gallons per day: 1,300,000

REPORT CERTIFICATION STATEMENT

By signing this report, the signer certifies that the information contained in or otherwise submitted with this report is true, complete and not misleading to the best of the signer's knowledge and belief.

By signing this report, the signer understands that submission of false, incomplete or misleading information is grounds for:

- Not approving the report;
- Revoking any approval that is granted based on the information;
- Suspending or revoking the professional license held by the signer if the department is the licensing authority or referring the matter to the appropriate licensing authority for potential action against the professional license held by the signer if other than the department; and
- If the signer is acting as or on behalf of a listed engineer as defined in Env-C 502.10, debarring the listed engineer from the roster.

By signing this report, the signer understands that they are subject to the penalties specified in New Hampshire law, currently RSA 641:3, for making unsworn false statements.

By signing this report, the signer and applicant agree to comply with all applicable rules and conditions of the approval, if one is issued.

SIGNATURES

APPLICANT: Carl McMorran **DATE:** March 24, 2017

PRINTED NAME: Carl McMorran, Aquarion Water Co. of NH

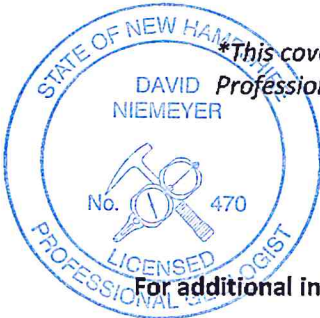
***REPORT PREPARER:** David C. Niemeyer **DATE:** March 24, 2017

PRINTED NAME: David Niemeyer, Geosphere Environmental Management, Inc.

PROFESSIONAL LICENSE TYPE: NH Professional Geologist

PROFESSIONAL LICENSE NUMBER: 470

**This cover page must bear the stamp or seal of the NH-licensed Professional Engineer (P.E.) or Professional Geologist (P.G.) who prepared the report.*



For additional information contact NHDES' Community Well Siting program manager at (603) 271-8866.

**Preliminary Report and Large Groundwater
Withdrawal Permit Application
(Env-Wq 403, Env-Ws 302)**

**Aquarion Water Company of New Hampshire
Well 22, Little River Road
Hampton, NH**

**Prepared For:
Carl McMorran
Aquarion Water Company of New Hampshire
7 Scott Road
Hampton, NH 03842
Phone: (603) 926-3319**

Prepared by:



51 Portsmouth Avenue, Exeter, NH 03833
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Project No. 12217

March 24, 2017



AQUARION

Water Company

Aquarion Water Company of New Hampshire
7 Scott Road
Hampton, NH 03842
603-926-3319 phone
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Stewards of the Environment™

Christine Bowman
New Hampshire Department of Environmental Services
Drinking and Groundwater Bureau
P.O. Box 95
Concord, NH 03302-0095

March 24, 2017

RE: Preliminary Report and LGWP application for Well 22, Little River Road, Hampton, NH
Aquarion Water Company of New Hampshire – PWSID 1051010

Aquarion Water Company of New Hampshire is proposing to develop a new production well for its public water system serving Hampton, North Hampton, and Rye (in part). The new well, designated Well 22, is located near Little River Road in Hampton. The well has been drilled and preliminary tests indicate a potential capacity as high as 1.35 MGD. Water quality sample results are also favorable; no parameters exceed current MCLs.

Attached are the Preliminary Hydrogeological Report and Large Groundwater Withdrawal Permit Application for this new bedrock public water supply well.

If you have any other questions, please contact me at 926-3319 extension 116.

Sincerely,
AQUARION WATER COMPANY OF NEW HAMPSHIRE

Carl McMorran
Operations Manager

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Figure 6	Potential Impact Area and Preliminary Wellhead Protection Area/Recharge Area

APPENDIX

Appendix A	Aquarion Water Conservation Plan
Appendix B	Well 22 Borehole Log
Appendix C	VLF Survey
Appendix D	Well 22 Step Test Graphs and Laboratory Water Quality Reports
Appendix E	NHDES Potential Contamination Source Inventory, Windshield Survey Results, Known Contamination Source File Review
Appendix F	NHDES Water User Inventory
Appendix G	Flood Insurance Rate Map for Hampton and North Hampton
Appendix H	NH Natural Heritage Bureau Correspondence
Appendix I	Private Well Owner Notification Letter and Questionnaire

1.0 INTRODUCTION, SITE CHARACTERIZATION AND HISTORY [(ENV-Dw 302.08 (a))]

Aquarion Water Company of New Hampshire (AQUARION) presents this Preliminary Hydrogeological Report to the New Hampshire Department of Environmental Services (NHDES) in support of a Large Groundwater Withdrawal Permit Application (LGWPA) for a new bedrock public water supply well, Well 22. The applicant's contact information is as follows:

Carl McMorran
Operations Manager
Aquarion Water Company of New Hampshire
7 Scott Road
Hampton, NH 03842
Phone: (603) 926-3319

If approved, Well 22 will provide a new source of groundwater to AQUARION's public water system which services Hampton, North Hampton, and parts of Rye, NH. Well 22, installed in 2012, is located on Assessors Map 165/Lot 1, located off Little River Road in Hampton, NH (see **Figure 1** for Site Locus). Current estimates of the potential yield of Well 22 is in excess of one million gallons per day (1 MGD).

This LGWPA was prepared in accordance with NHDES rules Part Env-Dw 302: Large Production Wells and Wells for Large Community Water Systems, and Part Env-Wq 403: Large Groundwater Withdrawals. According to Section Env-Wq 403.02 of the rules, "[Prior to] new extraction of drainage of groundwater from a shaft or hole in the Earth that equals or exceeds 57,600 gal over a 24 hour period..." a preliminary groundwater withdrawal application must be prepared and submitted to NHDES for review. Based on a proposed production volume of over 1 MGD, Well 22 constitutes a Large Groundwater Withdrawal (LGW).

1.1 Site Description and Use

AQUARION owns Map 165/Block 1 located at the end of Bonnie Lane, the entrance road leading into the well site from Little River Road in Hampton, NH. Block 1 is a predominately wooded lot approximately 12.1 acres in size, and contains Well 22, Well 7, and the pump house for Well 7 (see **Figure 2**). The Town of Hampton owns Map 165/Block 2, also located at the end of Bonnie Lane, located immediately southwest of Well 7. Block 2 is predominately wooded, undeveloped, and is approximately 6 acres in size.

Well 22 is a 560 ft. deep borehole which is located approximately 120 feet northwest of Well 7. Well 7 is a 48 ft. deep, 24-inch diameter gravel-packed well. Well 7 has been in operation as a public water supply well since 1950.

1.2 Topography and Drainage

The topography of well site is slightly sloped downward in the southeasterly direction, with elevations ranging from approximately 15 meters (50 ft) above mean sea level (MSL) on the west side of the property, to approximately 9 meters (30 ft) above MSL on the east side of the property. Surface water runoff on the property flows to the southeast towards wetlands and a stream located at the southeastern-most portion of Lot 1 (see **Figure 3**), approximately 1,200 ft. from Well 22. The stream flows to the southwest, beneath High Street, before turning east and discharging into Meadow Pond, a tidally-influenced pond located approximately 3,300 feet southeast of Well 22 (see **Figures 1 and 3**).

Well 22 is not located within 50 feet from the normal high water line of any surface water, nor is it located within 50 feet of any wetlands that are inundated with water for more than 30 continuous days.

1.3 Site Ownership and History

AQUARION, and its predecessors, has owned Lot 165/Block 1 for over 60 years. Block 2 was purchased by the Town of Hampton in 1992. Well 7 has been in operation since 1950. Well 22 was installed in October of 2012.

1.4 Site Vicinity

The well site is generally an undeveloped, wooded area set behind single family homes located on High Street and Little River Road. The closest residences are located approximately 475 – 600 feet to the north and northwest, and approximately 600 feet to south of Well 22. A residential condominium complex (Sea Oaks, 400 High St.) abuts the property to the east, approximately 1,500 from Well 22 (see **Figure 2**).

2.0 SANITARY PROTECTION RADIUS (ENV-DW 302.10)

The proposed 400 ft. sanitary protection radius (SPR) is shown on **Figure 2** and **Figure 3**. Approximately 50% of the SPR is comprised of Blocks 1 and 2, owned by AQUARION and the Town of Hampton. The remainder of the SPR encompasses portions of Map 147/Blocks 19 & 23 and Map 164/Block 3A (owned by Paul F. & Martha Leary), and Map 147/Block 14 (owned by Betsy A. Davis Lamie Family Trust). An engineering survey of the SPR will be conducted to confirm the SPR boundary prior. Easements, or legal ownership, of the portions of the private land within the SPR will need to be obtained in order for AQUARION to maintain control and natural state of the SPR in accordance with Env-Dw 302.10(d-f).

3.0 CONSERVATION MANAGEMENT PLAN (ENV-WQ 2102)

Appendix A contains the Water Conservation Plan for AQUARION, which was updated on February 21, 2017. Conservation Management Plans are updated every three years and submitted to NHDES. According to NHDES, AQUARION is in compliance with Conservation Management Plan requirements.

4.0 PRELIMINARY CONCEPTUAL HYDROLOGIC MODEL (ENV-DW 403.07)

In order to develop a working hypothesis describing the components of the hydrologic system associated with the proposed withdrawal, the following preliminary conceptual hydrologic model (CHM) was prepared. The CHM is intended to:

- 1) Describe the geology of the region;
- 2) Estimate a study area (Potential Impact Area) for the withdrawal, which includes the maximum extent of the cone of depression for the withdrawal, the recharge area for the withdrawal, and the downgradient area of the withdrawal;
- 3) Describe the hydrogeologic cycle for the study area;
- 4) Develop a water budget for the estimated study area; and
- 5) Provide a comprehensive description of the groundwater flow regime for the withdrawal.

4.1 Regional Surficial Geology

The surficial geology in the area of Well 22 is well documented in: 1) United States Geological Survey (USGS) Water Resources Investigation (WRI) Report 91-4025 (*Geohydrology and Water Quality of Stratified Drift Aquifers in the Lower Merrimack and Coastal River Basins, Southeastern New Hampshire, 1992*); 2) *Suburban and Rural Water Supplies in Southeastern New Hampshire (Part XVIII – Mineral Resources Survey)*, New Hampshire State Planning and Development Commission, 1960); and 3) *The Geology of the Seacoast Region New Hampshire* (Robert F. Novotny, 1969). The area is underlain by ice contact stratified drift deposits consisting of stratified sand, gravel, cobbles, and boulders. These deposits are typically shallow (0-50 ft. deep), but can yield relatively large quantities of water. AQUARION operates 5 public water supply wells (Wells 6, 7, 8A, 9, 11) within the Potential Impact area (see Section 4.5, below) which withdraw groundwater directly from these stratified drift deposits. These deposits are delineated by their ability to transmit water (transmissivity values) and are shown in **Figure 6**.

4.2 Bedrock Geology

The bedrock in the vicinity of Well 22 is mapped as the lower metasedimentary member of the Rye Formation, which is described as: a fine- to coarse-grained, light- to dark-gray and black mica schist and quartzo-feldspathic schist, commonly containing garnet and sillimanite; fine- to medium-grained, thin-bedded to massive, gray quartzite, commonly feldspathic and garnetiferous; fine- to coarse-grained, dark-green to black amphibolites, commonly containing diopside and garnet.

Drilling of Well 22 confirmed the presence of sand and gravel deposits to depths of up to approximately 50 feet deep, followed by the Rye Formation. Another rock type, a granite, was encountered in Well 22 at a depth of 420 – 560 ft. below ground surface (bgs). This rock is believed to represent the Breakfast Hill Granite, an intrusive quartz feldspar granite rock found adjacent to and intruded into the Rye formation (see **Appendix B** for Well 22 borehole log).

Figure 4 presents a geologic cross-section through the site (see **Figure 3** for location of Cross-Section Line A-A'). The wells that were used to construct the cross-section include one identified private bedrock well located at 117 Little River Road approximately 1,000 feet northwest of Well 22, one 44-foot deep overburden observation well (OBS-1) located approximately 500 feet to the north of Well 22, Well 22, Well 7, and Well 7-Obs, a 19 ft. deep observation well located adjacent to Well 7. As shown in **Figure 4**, glacial till was encountered to depths of approximately 43 feet at OBS-1.

4.3 Subsurface Exploration

4.3.1 Fracture Trace Analysis

In order to identify and locate bedrock fractures favorable for the installation of high yield water wells for AQUARION, a fracture trace analysis (FTA) was conducted by GEOSPHERE for the well site. A FTA is a remote sensing (i.e. use of aerial photographs) method used to identify and map the locations of fracture traces. A fracture trace or photolinear is a line that marks the intersection of a fracture in bedrock with the ground surface.

Groundwater in bedrock flows through open fractures. As such, the goal of the FTA is to identify areas on aerial photographs that contain a high concentration of photolinears (i.e. potential bedrock fractures) that may yield large amounts of groundwater to pumping wells. Because water is one of the major weathering agents in rock, flow of water through open fractures, in general, causes increased weathering and weakening of the bedrock along the fractures. This increased weathering causes geomorphic and soil moisture changes as well as changes in soil color, supporting biological processes, and vegetation. The weathering processes may manifest as straight stream segments, an abrupt change in the course of a stream, alignment in a vegetation pattern, and alignment of topographic features.

An integral part of a FTA is the review of existing topographic maps, surficial geology maps, and bedrock geology maps. These maps aid in identifying photolinear features on the aerial photograph that meet the criteria as a fracture trace.

The most favorable locations for high yield bedrock wells are at the intersections of multiple photolinears (fracture traces). The FTA identified an area of interest where several intersecting photolinears were identified at the well site (see **Figure 5** for locations of identified photolinears).

4.3.2 Very Low Frequency Geophysical Survey

In August of 2012 Hager-Richter Geoscience, Inc. (Hager-Richter) conducted a very low frequency (VLF) geophysical survey of the well site in Hampton. The objective of the VLF survey was to provide data that could be integrated with the FTA data to identify locations for exploration drilling. The results of the VLF survey identified possible fractures coincident with photolinears identified by GEOSPHERE. Survey lines were prepared by GEOSPHERE in GIS format and a GPS unit was used to stake the intersections and endpoints of identified possible fractures (see **Figure 5**). **Appendix C** contains Hager-Richter's VLF survey report prepared for the well site (The Hager-Richter report also contains results from two other AQUARION well sites).

4.3.3 Exploration Drilling

Between October 1 and October 9, 2012, GEOSPHERE supervised the installation of Well 22 (then referred to as BTW-7A). Viera Artesian Well Company of Georgetown, Massachusetts, installed the well. The well was completed to a depth of 560 feet bgs. Following completion of drilling activities a potential well yield could not be obtained through an airlift test due to high flow rates and flooding around the drill rig. The well was constructed with a 14-inch diameter socket hole drilled 17 feet into competent bedrock to a depth of 67 feet bgs. Bedrock was encountered at 50 feet bgs. A 10-inch diameter 67-foot length steel casing was set into the socket hole, and a concrete sanitary seal was set around the casing from ground surface to 67 feet bgs. Initially a 6-inch diameter open borehole was drilled from 67 feet bgs to 300 feet bgs. Due to high amounts of water and back pressure on the rods, the 6-inch diameter rods were pulled and a 10-inch diameter open borehole was drilled from 67 feet bgs to 320 feet bgs. An 8-inch diameter open borehole was then drilled from 320 feet bgs to the completion depth of 560 feet bgs.

The uppermost water-bearing fracture was encountered at 219 feet bgs. During advancement of the open borehole, airlift tests were performed and flow rates measured with a 5-gallon bucket and stopwatch. The well yields measured indicated flow rates greater than 300 gallons per minute (gpm).

Groundwater levels in Well 7-Obs, a 2-inch diameter monitoring well installed to a depth of 19.9 feet bgs and located 8 feet from production Well 7, were recorded during drilling using electronic water level recording devices (pressure transducers). There were no observable fluctuations in groundwater levels in the sand and gravel aquifer in response to the bedrock

drilling and groundwater withdrawals from the bedrock aquifer. Production Well 7 was not operating during drilling activities.

A Boring Log for Well 22 detailing well construction, water-bearing zones, and geologic descriptions is presented in **Appendix B**. A well completion report has been submitted to NH DES by Viera Artesian Well Company.

4.4 Preliminary Pumping Test Results

4.4.1 October 2012 Step Test on Well 22

Following well installation activities in October 2012, GEOSPHERE supervised the performance of a step-drawdown withdrawal test on the newly installed bedrock well (Well 22). The step-drawdown test on Well 22 was run at 4 different pumping rates (103 gpm, 206 gpm, 305 gpm, and 401 gpm) in order to determine a potential well yield and suitable pumping rate for a long-term (7-10 day) continuous withdrawal test, as well as determine if there are any potential groundwater level interference effects between the bedrock and the sand and gravel aquifer. Groundwater levels were recorded in Well 22 as well as Well 7-Obs, screened within the sand and gravel aquifer. All groundwater levels were recorded utilizing electronic water level devices (pressure transducers).

Water levels observed in Well 22 during the 2012 step-drawdown test are presented in **Figure D-1** in **Appendix D**. This graph also shows the static groundwater level (10.1 feet below top of casing [btoc]), the total depth of the well (560 feet bgs), and the upper most water-bearing zone (219 feet bgs). The upper most water-bearing zone represents the critical pumping level as defined by the NH DES LGWP regulations. The NH DES LGWP regulations require that for any groundwater withdrawal wells, the pump must be set above the upper most water-bearing fracture to reduce the risk of de-watering fracture zones currently utilized by other users (private wells). As shown, the groundwater levels in Well 22 during each pumping rate remained well above the uppermost water-bearing zone. In fact, the groundwater level under the highest rate of 401 gpm did not drop below 58.08 feet, which is above the bottom of the well casing (67 feet bgs).

Figure D-2 in **Appendix D** presents the groundwater level data recorded during the highest pumping rate of 401 gpm. The groundwater levels are presented against elapsed time on the log scale in order to extrapolate a pumping level under the NH DES defined 180-day continuous pumping with no recharge groundwater withdrawal conditions. As shown, the extrapolated groundwater level under the 180-day conditions is approximately 90 feet btoc. Based upon extrapolation of the groundwater level data recorded during the step-drawdown test, Well 22 can produce well over 400 gpm over an extended period of time (180-days) without dropping the water level below the critical level of 219 feet bgs.

Groundwater level data recorded in Well 7-Obs during the step-drawdown test indicated no observable fluctuations in groundwater levels in the sand and gravel aquifer.

Prior to shutdown of the step-drawdown test, GEOSPHERE collected groundwater samples from Well 22 for laboratory analysis of inorganic compounds, secondary contaminants, metals, radionuclides, volatile organic compounds (VOCs), and synthetic organic compounds (SOCs). **Table 1** summarizes the 2012 groundwater quality testing results.

4.4.2 December 2016 Step Test on Well 22

A second step-drawdown test on Well 22 using a larger submersible well pump was conducted on December 13, 2016. The test was conducted for 6 hours at 3 different pumping rates (215 gpm, 400-405 gpm, and 683 gpm). Using automated pressure transducers, GEOSPHERE collected water levels from Well 22 and Well 7-Obs, a 2-inch diameter observation well located 8 feet from production Well 7 and screened within the sand and gravel aquifer. Well level data from Well 7 was also recorded continuously by AQUARION's SCADA telemetry system.

Water levels observed in Well 22 during the 2016 step-drawdown test are presented in **Figure D-3** in **Appendix D**. As shown, the groundwater levels during each pumping rate remained well above the uppermost water-bearing zone. In fact, the pumping level under the highest rate of 683 gpm did not drop below 116.43 feet.

After shutdown of the pump, groundwater level recovery readings were recorded for a period of 30 minutes. The groundwater level recovered 87% from the last step in 30 minutes.

Figure D-4 in **Appendix D** presents the groundwater level data recorded during the highest pumping rate of 683 gpm. The groundwater levels are presented against elapsed time on the log scale in order to extrapolate a pumping level under the NH DES defined 180-day continuous pumping with no recharge groundwater withdrawal conditions. As shown, the extrapolated groundwater level under the 180-day conditions is approximately 163 feet btoc. Based upon extrapolation of the groundwater level data recorded during the step-drawdown testing, Well 22 can produce over 683 gpm over an extended period of time (180-days) without dropping the water level below the critical level of 219 feet bgs. Based upon a specific capacity calculation of 4.5 gpm/ft for the 180-day extrapolation point (683 gpm/150 ft of drawdown), Well 22 theoretically could produce up to 940 gpm (4.5 gpm/ft. x 209 ft.) before drawdown in the well would fall below the upper most water-bearing fracture located at 219 ft. bgs (209 ft. below static water level).

Groundwater level data recorded in Well 7-Obs during the step-drawdown testing indicated negligible observable fluctuations in groundwater levels (0.6 feet) in the sand and gravel aquifer due to the bedrock aquifer groundwater withdrawals. Well 7 was not operational during this test, however water level data was collected by AQUARION's SCADA system.

Prior to shutdown of the step-drawdown test, GEOSPHERE again collected groundwater samples from Well 22 for laboratory analysis of inorganic compounds, secondary contaminants, metals, radionuclides, VOCs, and SOCs. **Table 2** summarizes the 2016 groundwater quality testing results.

4.5 Proposed Potential Impact Area Delineation

As part of the CHM, the LGW rules (Env-Wq 403) require that a Potential Impact Area for the withdrawal be delineated. The Potential Impact Area is the area where water resources may be adversely impacted by the withdrawal operating continuously for 180-days at maximum volumes without recharge from rainfall or snowmelt, and includes the following three components:

- 1) The maximum extent of the cone of depression created by the withdrawal;
- 2) The maximum extent of the recharge area for the withdrawal; and
- 3) The downgradient area of the withdrawal.

4.5.1 Cone of Depression

A default 4,000-foot radius was chosen as the basis of a preliminary cone of depression (COD) for Well 22, given that insufficient data is currently available to calculate the COD (see **Figure 6** for COD). However, the presence of mapped lineaments extending from the area surrounding Well 22 to areas outside the preliminary COD indicates that the maximum COD under continuous pumping conditions with no recharge will likely extend beyond the preliminary COD.

4.5.2 Recharge Area

The recharge area for the withdrawal was estimated based on several factors including the characteristics of the topography of the area, the surficial and bedrock geology of the site vicinity, and the locations and alignments of mapped lineaments indicative of bedrock fractures. The recharge area was extended in the upgradient direction to the adjacent watershed boundary to the northeast in order to incorporate recharge areas to the mapped lineaments (both GEOSPHERE and USGS) that were observed to extend beyond the watershed boundary and that emanate from the Well 22 withdrawal location (see **Figure 6** for the Preliminary WHPA/recharge area). The total area of the recharge area is approximately 4.10 sq. mi. This recharge area also coincides with the Preliminary Wellhead Protection Area (WHPA).

4.5.3 Downgradient Area (RSA 485-C:21 V-e)

According to the LGW rules, the three components of the downgradient area include the following:

1. The area where water taken by the withdrawal would flow if the withdrawal did not operate;
2. The area that will provide water to the downgradient area when the withdrawal is operating; and
3. The point where the amount of water to be withdrawn is negligible when compared to the amount of water crossing the boundary using one of the following methods:

- a. An existing or new delineation of a watershed large enough so that the size of the entire study area for the withdrawal is at least 10 times the size of the recharge area for the withdrawal;
- b. An existing or new delineation of a watershed where the amount of water crossing the downgradient boundary, that is, leaving the study area under current conditions, is at least 10 times the amount to be withdrawn; or
- c. An alternative method of estimating a study area provided it:
 - i. Relies on conservative assumptions;
 - ii. Is demonstrated as appropriate for the site by testing results; and
 - iii. Is clearly explained and justified using test results in the report developed pursuant to Env-Wq 403.

The downgradient extent was identified by delineating the watersheds that encompass the COD and Recharge Areas to the south of Well 22, while truncating any tidally influenced areas such as Meadow Pond and tidal marshes to the south and southwest. The boundaries of the downgradient basins were used to construct the western and southern boundary of the Potential Impact Area (see **Figure 6**). The water budget analysis that follows demonstrates that the annual recharge volume of water for the entire Potential Impact Area [minus water that is withdrawn from existing withdrawals (water users)] is 2 – 4 times greater than the maximum withdrawal volume proposed for Well 22.

4.5.4 Preliminary Wellhead Protection Area

In order to estimate Preliminary Wellhead Protection Area (WHPA) for Well 22, GEOSPHERE has assumed the following areas may contribute water to the large groundwater withdrawal, and therefore, comprise the boundary of the Preliminary WHPA for Well 22:

- a. The area representing the 4,000 ft. radius / default cone of depression surrounding Well 22, including all identified FTA and VLF fractures/lineaments the immediate vicinity of Well 22, but not including Meadow Pond, which is tidally influenced;
- b. An extended 5,000 ft. radius surrounding Well 22 to the east, south and west, incorporating intersections of mapped USGS lineaments that extend from the Well 22 area beyond the 4,000 ft. radius (not including tidally influenced areas);
- c. An area to the north, beyond the sub-basin in which Well 22 is located, incorporating intersections of mapped USGS lineaments that extend greater than 5,000 ft. from Well 22, and the watershed above the lineaments that is presumed to be the recharge area for the lineaments that extend in the northeastern direction from the withdrawal location.

The resulting Preliminary WHPA is anticipated to provide maximum protection for the withdrawal relative to potential contamination sources located in these areas (see **Figure 6** for Preliminary WHPA boundary).

4.5.5 Hydrologic Cycle

The hydrologic (water) cycle involves the following five processes: condensation (process of water changing from a vapor to a liquid), precipitation (water being released from clouds as rain, sleet, snow, or hail), infiltration (water from precipitation which seeps into the soil), runoff (water from precipitation which does not infiltrate the soil and flows overland into streams, rivers, and lakes), and evapotranspiration (water released back into the atmosphere by evaporation from rivers and lakes; and transpiration - water taken in by plant roots and released back to the atmosphere by leaves).

The major source of recharge to the unconsolidated materials in the Potential Impact Area is through precipitation directly on the land surface. The USGS Stream Stats application is an online GIS-based tool which utilizes data collected at USGS Stream Gage sites to predict ungaged streamflow and basin characteristics using regression analysis. Stream Stats estimates that the Potential Impact Area experiences approximately 45.8 inches of precipitation annually. Stream Stats also estimates the amount of precipitation that recharges the aquifer in the local basin to be 22.9 inches, based on a report by Robert H. Flynn and Gary D. Tasker (USGS): *Generalized Estimates from Streamflow Data of Annual and Seasonal Ground-Water-Recharge Rates for Drainage Basins in New Hampshire*. According to a report by the Army Corps of Engineers (ACOE); *Southeastern New Hampshire Water Resources Study, Groundwater Assessment-Main Report, March, 1981*, for a sand and gravel aquifer in the seacoast region of New Hampshire, approximately 43.5% of the annual precipitation is lost to evapotranspiration, 20.5% is lost to runoff, and 5% is lost to groundwater evaporation (water which evaporates from the zone of aeration). This leaves approximately 31% of the total precipitation, or 14.2 inches, to recharge the groundwater. The difference between these two recharge estimates is due to the availability of new data since the ACOE report was published and the methods of estimation. An average of the two recharge estimates was used in the water balance calculation to incorporate the more conservative ACOE estimate with the more liberal USGS estimate derived from the Stream Stats method.

4.5.6 Water Budget

A water budget reflects the relationship between input and output of water through a region. The following estimates were used for water budget calculations relative to the Potential Impact Area:

Total land area of the Potential Impact Area -	4.80+/- square miles (1.33x10 ⁸ ft ²)
Average thickness of overburden materials - (Depths to bedrock used in averaging were taken From NH DES Well Inventory database for towns of Greenland, Hampton, Hampton Falls, Northampton, Rye and Stratham, New Hampshire)	26 feet

Average thickness of bedrock aquifer in Potential Impact Area - (Using deepest well drilled at the site minus the average thickness of overburden in Potential Impact Area: [820 ft – 32 ft = 788 ft])	788 feet
Average depth to groundwater in overburden wells in Potential Impact Area - (Groundwater depths used in averaging were taken from overburden monitoring wells located at AQUARION's Mill Road Facility, located approximately 3,500 feet north of the Well 22 site. Static water levels for 3 piezometers including P1-S, P1-D, P2I, were recorded during non-pumping periods and averaged to yield the average depth to groundwater bgs)	6.3 feet
Depth to groundwater in bedrock wells in Potential Impact Area - (Static water level of Well 22 prior to the 2016 step test activities)	9.8 feet
Average saturated thickness of overburden aquifer (32 ft – 6.3ft) -	26 feet
Average saturated thickness of bedrock aquifer -	788 feet
Estimated porosity of overburden aquifer -	25% (0.25)
Estimated porosity of bedrock aquifer - Based on porosity of plutonic rocks (Fetter 1988)	2% (0.02)
Average yearly precipitation - (Source: USGS Stream Stats)	45.8 inches
Amount of precipitation lost to evapotranspiration and runoff - (Based on ACOE study)	31.6 inches (70%)
Amount of precipitation infiltrating soils and recharging groundwater - (Based on ACOE study)	14.2 inches (30%)
Amount of precipitation infiltrating soils and recharging groundwater – (Based on USGS Stream Stats application estimate of groundwater recharge values for the Piscataqua-Salmon Falls watershed)	22.9 inches

Proposed Maximum Withdrawal Volume of Well 22 (gallons per minute) -	940 gpm
(million gallons per day)	(1.35 MGD)
(million gallons per year)	(494 MGY)

Existing Withdrawals of AQUARION's Wells
(6, 7, 8A, 9, 11, 20, 21) in Potential Impact Area - 487 MGY

Well 6 Avg. Rate of 65,383,197 gpy +
Well 7 Avg. Rate of 109,328,866 gpy +
Well 8A Avg. Rate of 44,344,447 gpy +
Well 9 Avg. Rate of 92,928,926 gpy +
Well 11 Avg. Rate of 129,742,241 gpy +
Well 20 Avg. Rate of 15,400,902 gpy +
Well 21 Avg. Rate of 29,856,041 gpy

Estimate of all other withdrawals by water users in Potential Impact Area -	11 MGY
50 private wells (NHDES, App. G)	
= 50 * 600 gpd * 365 days	

Water in Storage in Overburden Aquifer in Potential Impact Area

Using an area of 4.80 mi.² (1.33 x 10⁸ ft²) for the Potential Impact Area, the total volume of water in storage was calculated as follows:

$$(1.33 \times 10^8 \text{ ft}^2) \times (26\text{ft}) = 3.46 \times 10^9 \text{ ft}^3 \text{ of saturated thickness of overburden aquifer}$$

$$(3.46 \times 10^9 \text{ ft}^3) \times (0.25) = 8.65 \times 10^8 \text{ ft}^3 \text{ of void space containing water}$$

$$(8.65 \times 10^8 \text{ ft}^3) \times (7.481 \text{ gallons/ft}^3) = \underline{\underline{6.47 \times 10^9 \text{ gallons of water in storage in overburden aquifer}}}$$

Water in Storage in Bedrock Aquifer in Potential Impact Area

$$(1.33 \times 10^8 \text{ ft}^2) \times (788\text{ft}) = 1.05 \times 10^{11} \text{ ft}^3 \text{ of saturated thickness of bedrock aquifer}$$

$$(1.05 \times 10^{11} \text{ ft}^3) \times (0.02) = 2.10 \times 10^9 \text{ ft}^3 \text{ of void space containing water}$$

$$(2.10 \times 10^9 \text{ ft}^3) \times (7.481 \text{ gallons/ft}^3) = \underline{\underline{1.57 \times 10^{10} \text{ gallons of water in storage in bedrock aquifer}}}$$

Total Water in Storage in Potential Impact Area

$$6.47 \times 10^9 \text{ gallons of water in storage in overburden aquifer} +$$

$$1.57 \times 10^{10} \text{ gallons of water in storage in bedrock aquifer} =$$

$$\underline{\underline{2.22 \times 10^{10} \text{ gallons of water in the combined overburden and bedrock aquifers in the Potential Impact Area.}}}$$

Recharge to the Potential Impact Area (Stream Stats Recharge)

Using an estimate of 22.9 inches (1.9 ft) of water from precipitation to recharge the groundwater, the volume of recharge to the groundwater within the Potential Impact Area was calculated as follows:

$$(1.9 \text{ ft}) \times (1.33 \times 10^8 \text{ ft}^2 \text{ of area}) = 2.53 \times 10^8 \text{ ft}^3 \text{ of recharge.}$$

$$(2.53 \times 10^8 \text{ ft}^3) \times 7.481 \text{ gallons/ft}^3 = 1.89 \times 10^9 \text{ gallons of recharge per year to recharge the groundwater within the Potential Impact Area.}$$

Recharge to the Potential Impact Area (ACOE Recharge)

Using an estimate of 14.2 inches (1.18 ft) of water from precipitation to recharge the groundwater, the volume of recharge to the groundwater within the Potential Impact Area was calculated as follows:

$$(1.18 \text{ ft}) \times (1.33 \times 10^8 \text{ ft}^2 \text{ of area}) = 1.57 \times 10^8 \text{ ft}^3 \text{ of recharge per year.}$$

$$(1.57 \times 10^8 \text{ ft}^3) \times (7.481 \text{ gallons/ft}^3) = 1.17 \times 10^9 \text{ gallons of recharge per year to recharge the groundwater within the Potential Impact Area.}$$

Average of Recharge Volume Estimates

$$1.89 \times 10^9 + 1.17 \times 10^9 / 2 = 1.53 \times 10^9 \text{ gallons per year of recharge per year to recharge the groundwater within the Potential Impact Area.}$$

Remaining Recharge after Existing Water User Withdrawals

$$1.53 \times 10^9 \text{ gpy} - 4.98 \times 10^8 \text{ gpy} = 1.03 \times 10^9 \text{ gallons per year of recharge remaining after existing water user withdrawals}$$

Discussion

Using an estimated maximum proposed daily production volume of 1.35 MGD for Well 22, the maximum yearly volume is 494 million gallons per year (MGY). The ratio of remaining yearly recharge (after existing water users) to the maximum proposed yearly production volume is 2.1:

$$(1.03 \times 10^9) / (4.94 \times 10^8) = 2.1$$

Thus, the annual recharge volume is 2.1 times greater than the proposed withdrawal volume. With this surplus of groundwater, the proposed groundwater withdrawals should not adversely impact the water resources within the Potential Impact Area.

Well 22 will provide supplemental water to AQUARION's system during high demand months – particularly in July and August. A more realistic estimate of the actual yearly withdrawal volume for Well 22 for the purpose of the annual water budget would be based on a maximum,

constant pumping rate (940 gpm) for the duration of July and August, and a 50% on/off cycle for the remainder of the year. A summary of the calculations can be found below.

Operating Schedule	Rate (gpm)	# Days of Operation	Total Volume (gpy)
July & August	940	62	940 gpm x1440 min x 62 days = 8.39E+07 gpy
Sept., Oct., Nov., Dec., Jan., Feb., March, April, May, June; Operating 50% of the time	470 (avg)	303	470 gpm x1440 min x 303 days = 2.05E+08 gpy
Total Well 22 Withdrawal			2.89E+08 gpy
Recharge after withdrawals			1.03E+9 gpy
Recharge ratio			3.6

Considering the more realistic estimate of the yearly withdrawal volume for Well 22, the remaining recharge volume is estimated at 3.6 times the total annual withdrawal volume.

4.5.7 Surface Water

Surface water bodies within the Potential Impact Area include Dow's River to the south of Well 22, which flows into Meadow Pond, Nilus Brook to the northeast of Well 22 which flows into Old Millpond, an unnamed tributary of the Little River north of Well 22, and several small ponds and wetlands areas. The majority of surface waters in the Potential Impact Area discharge into the Little River to the east, or the Hampton River to the south; both rivers discharge into the Atlantic Ocean (see **Figure 6** for locations of streams and water bodies in the Potential Impact Area).

4.5.8 Groundwater Flow Regime

The general direction of groundwater flow can be derived by observation of the land surface topography. The driving force of groundwater flow is gravity, i.e., groundwater flows from higher elevations to areas of lower elevations where it discharges to streams, ponds, and lakes. Generally, the slope of the land surface is toward streams or coastal areas, and water table elevations are higher between streams and lower at the streams or other surface water bodies. As a result, the water table generally is a subdued image of the land surface topography. Therefore, examination of topographic maps can give fairly reliable information regarding the direction of groundwater flow for a specified area.

Based on a review of the USGS Topographic Quadrangle for Hampton, NH, the general direction of groundwater flow in the overburden material in the Potential Impact Area is easterly towards the Atlantic Ocean. Local groundwater flow directions within the Potential Impact Area vary with topography. Groundwater flow at the well site is estimated to be toward the southeast in the direction of Meadow Pond.

Groundwater flow in fractured crystalline bedrock occurs primarily through interconnected fractures but generally follows the same rule of flow as that of overburden aquifers, i.e., flow is from areas of higher land elevations to areas of lower elevations. A review of the USGS lineament map for the Potential Impact Area indicates the presence of numerous lineaments in the area, indicating the possible presence of faults and fractures. Based on a preferred northwest-southeast trend of the lineaments, and the general decline in topographic elevation toward the east, groundwater flow through the bedrock aquifer in the Potential Impact Area is also estimated to be toward the east-southeast, eventually discharging into the Atlantic Ocean.

5.0 PRELIMINARY CONTAMINATION SOURCE INVENTORY, WATER RESOURCE AND USE INVENTORY (ENV-WQ 403.05(A)(7), ENV-WQ 403.05(A)(8))

In accordance with Env-Ws 403.08 and 403.09, an inventory of known and potential contamination sources (PCS) shall be completed for an area that extends a distance of 1,000 feet outside of the estimated limit of the cone of depression, and an inventory of water resources and uses in the Potential Impact Area shall be completed. The inventories are required to be performed within 90 days of submittal of the LGWP application and are used to identify and notify water users and resources within the Potential Impact Area that could be affected by the proposed withdrawal, and identify PCSs within the WHPA that have the potential to impact the water quality of the withdrawal. The PCS inventory was also cross-checked against AQUARION's Best Management Practices and PCS Survey Program for AQUARION's current Wellhead Protection Area, which is conducted and submitted to NHDES every three (3) years for the existing WHPA. The inventory included the following:

- Inventory of Public Water Supply Sources, Registered Water Users, Private Water Wells, and National Pollutant Discharge Elimination Systems (NPDES) in the Hampton /North Hampton Potential Impact Area, NHDES, March 1, 2017.
- Inventory of Underground and Aboveground Storage Tanks, Automobile Salvage Yard Facilities, Local Potential Contamination Sources, RCRA Hazardous Waste Generators, Source Water Hazards Inventory and Remediation Sites in the Hampton /North Hampton Preliminary WHPA, NHDES, March 1, 2017.
- Private Water Well Inventory Query, NHDES One Stop Database.
- Registered Water Users Inventory Query, NHDES One Stop Database.
- Remediation Site Information Query, NHDES One Stop Database.
- AQUARION BMP and PCS Windshield Surveys, GEOSPHERE, November 2016.
- Well site vicinity windshield survey, GEOSPHERE, March 1, 2017.
- Hampton, NH, Assessors Records.

5.1 Potential Contamination Source Inventory

According to the NHDES PCS inventory, a total of 113 individual PCS sites were identified within the Preliminary WHPA, the majority of which are located along Lafayette Road (Route 1), which coincides with the far western boundary of the Preliminary WHPA. The closest PCSs to the withdrawal were identified as the Oaks of Hampton/Pacheco Property, Plouffe residence,

and GMS Excavating located approximately 1,100 ft., 1,200 ft., and 1,300 ft. from Well 22, respectively (see **Appendix E** for PCS Inventory and Map). A windshield survey was conducted by GEOSPHERE in November 2016 for the existing WHPA for all of AQUARION's water supply wells, as part of the required BMP Compliance monitoring required by NHDES for source water protection. Details from the 2016 windshield survey were cross referenced with the output of the PCS inventory produced by NHDES on March 1, 2017 and pertinent notes are included in the PCS Windshield Survey Results table available in **Appendix E**. According to the NHDES inventory, the Oaks of Hampton/Pacheco is closed. The Plouffe Residence (NHDES ID PCS01175) is categorized by NHDES as a General Service & Repair Shop, which poses a low risk to groundwater source contamination. A query of NHDES files on GMS Excavating (NHDES ID # 1888) confirmed that there had been two underground storage tanks (USTs) on site, one for heating oil and one for gasoline fuel, and the records indicate that both USTs were closed in compliance with NHDES tank closure procedures on September 4, 1991. Monitoring reports following tank closure indicate that soil samples taken from below the tank after removal showed no detection of contamination in the subsurface. The windshield survey confirmed the presence of most of the PCSs identified for the Preliminary WHPA, however, some of the PCSs were not able to be located and were presumed to have either moved or closed as indicated on the table in **Appendix E**. An on-line review of the NHDES' One Stop Environmental Site Information/Remediation Sites for North Hampton and Hampton was performed to cross-check the Known Contamination Sources (KCSs) listed in the Inventory for the WHPA (see **Appendix E, Table 2** for Known Contamination Source listings). **Appendix E** contains the site summaries for the KCSs that were identified in the Preliminary WHPA. Based on the distance of these Known Contamination Sources from Well 22, GEOSPHERE is of the opinion that the PCSs represent a low risk of potential impact to Well 22 during extended pumping. Water quality sampling and analysis in accordance with Env-Dw 302.15 will confirm the presence of any contamination present in the groundwater withdrawn from Well 22.

5.2 Water Resource and Use Inventory

An inventory of all registered water users and private wells in the Potential Impact Area (PIA) was prepared by NHDES in support of this LGW permit application. According to the Water User Inventory Map (**Appendix F**), there are 7 active public water supply sources located within the Potential Impact Area, all of which are operated by one (1) water user, Aquarion Water Company of New Hampshire (AQUARION). AQUARION operates the following active public water supplies within the PIA: Well 6, Well 7 (located 122 feet from Well 22), Well 8A, Well 9, Well 11, Well 20, and Well 21.

The NHDES Water Well Inventory identified 50 private wells in the Potential Impact Area, including 1 private well within 1,000 feet of the Well 22 withdrawal site. The address, Well ID number, owner name, depth, and yield are listed on the Water Use Inventory Map provided by NHDES for each of the private wells within 1,000 ft. of the default 4,000 ft. COD (see **Appendix F** for Water Use Inventory maps and tables).

AQUARION's water service records indicate the presence of several properties located within 1,000 feet of Well 22 which are not connected to the AQUARION water system. These include: 7, 8, 10, and 12 Springhead Lane to the south, and 82 Woodland Road to the north (see **Figure**

3). No well construction logs are available in the NHDES Water Well Inventory. A windshield survey conducted by GEOSPHERE on March 1, 2017 confirmed that these addresses are single family homes which likely have private water supply wells.

5.3 Wetlands

According to the National Wetland Inventory (NWI), wetland areas are located on the well site property in the southeast end of the lot, approximately 1,200 feet from Well 22, and on the abutting property to the north, approximately 800 feet east of Well 22 (see **Figure 3** for boundaries of wetlands). GEOSPHERE will engage a NH certified wetlands scientist to certify whether or not wetlands are located within 100 feet of Well 22 and to determine the nearest wetlands to Well 22. In the event that wetlands are identified within 1,000 feet of Well 22, GEOSPHERE will install a shallow piezometer by hand and monitor water levels, if present, for impacts during the proposed withdrawal pumping test. Currently, two piezometers (PZ-1, PZ-2) are proposed to be installed within the nearest estimated wetland areas as shown on **Figure 3**.

5.4 Flood Plain, 100-Year Flood Elevation, Flood Insurance Rate Map

The 100-Year Flood Plain and its proximity relative to Well 22 can be found in **Figure 3**. The 100-Year Flood Plain Elevation is 9 ft. above sea level, which is well below the elevation of the western edge of the site at 45 ft. The flood plain boundary is located 1,500 ft. from Well 22 and does not encroach the well site property. The Flood Insurance Rate Map can be found in **Appendix G**.

5.5 Stormwater Discharge Areas and Drainage Structures

There are no stormwater discharge areas or drainage structures located within the 400-foot Sanitary Protection Radius.

5.6 Natural Heritage Bureau

Enclosed in **Appendix H** is a response letter from the New Hampshire Natural Heritage Bureau (NHB) confirming clearance for the project. Although there was a NHB record (of a rare wildlife, plant or natural community) in the vicinity, the NHB does not expect it to be impacted by the proposed project.

6.0 ESTIMATE OF THE EFFECTS OF THE WITHDRAWAL ON WATER RESOURCES AND USES (ENV-WQ 403.10)

The estimate of the effects of the withdrawal on water resources and users in the study area is based on the preliminary conceptual hydrologic model, the preliminary (default) cone of depression, an estimate of the maximum extent of the cone of depression under pumping conditions, the geology and hydrology associated with the Potential Area of Impact (study area), and the results of short term pumping tests and extended pumping tests performed (or to be performed) on existing and proposed large groundwater withdrawal wells.

Based on drawdown measurements collected from Well 7-Obs during two short-term pumping tests performed on Well 22 in 2012 and 2016, no significant drawdown was observed in either Well 7 or Well 7-Obs, screened within the shallow sand and gravel aquifer at the Well 7 and Well 22 well site. This indicates a lack of significant hydraulic connection or communication between the bedrock aquifer and the sand and gravel aquifer on site.

At the completion of the short-term pumping tests performed on Well 22, Well 22 experienced rapid recovery (i.e. 82.5% recovery within 48 minutes, and 87% recovery within 30 minutes). This indicates the potential of a sustainable yield of groundwater exists within the bedrock aquifer, the direct result of water-bearing fractures encountered during the drilling of Well 22 to a depth of 565 feet bgs. As shown in the well log for Well 22 (**Appendix B**), water producing fractures were encountered at depths of 219-256 ft. bgs, 285-330 ft. bgs, 390-420 feet bgs, 480-510 ft. bgs.

An abundant number of lineaments were identified in the immediate vicinity of Well 22 and Well 7 during a very low frequency (VLF) survey of the well site, in addition to fracture trace analysis (FTA) lineaments identified in aerial photographs of the well site area (see **Figure 5**). Interconnectedness of the bedrock aquifer's water-bearing fractures in the immediate vicinity of the proposed new source of supply can therefore be assumed.

Water level monitoring in bedrock wells beyond the well site during pumping of Well 22 has yet to be conducted. The potential for impacts to private wells and/or other water users within the Preliminary WHPA exists. The proposed withdrawal testing program will address and evaluate potential impacts to these users, by monitoring those within 1,000 ft. of Well 22, and a representative selection of those within the Preliminary WHPA.

No significant impacts to shallow groundwater resources, including the sand and gravel aquifer on site, are anticipated. Nearby shallow overburden monitoring wells (one screened in glacial till, the other screened in stratified drift deposits), two wetlands piezometers, and a surface water staff gauge will be monitored prior to and during the withdrawal test. The nearest surface water is located 1,200 ft. from the proposed withdrawal location and is located in the wetlands area in the southeast corner of the property.

The discharge of groundwater withdrawn from Well 22 is not anticipated to affect the performance of the withdrawal test. AQUARION proposes to connect the discharge from Well

22 to a hydrant at Well 7 and pump directly into AQUARION water distribution system, following treatment.

7.0 DESIGN OF WITHDRAWAL TESTING PROGRAM (ENV-WQ 403.11, ENV-DW 302.14) AND GROUNDWATER QUALITY SAMPLING AND TESTING (ENV-DW 302.15)

The proposed pumping test for AQUARION's Well 22 will be performed in accordance with NHDES Code of Administrative Rules Env-Dw 302 *Large Production Wells and Wells for Large Community Water Systems* and Env-Wq 403 *Large Groundwater Withdrawal*. Specifically, Env-Dw 302.14 *Proposal for Pumping Test* and Env-Wq 403.11 *Withdrawal Testing Program Design*. On behalf of the following individual is responsible for performing the pumping test:

Mr. David Niemeyer, P.G.
Senior Hydrogeologist
Geosphere Environmental Management, Inc.
51 Portsmouth Avenue
Exeter, NH 03833
Phone: (603) 773-0075 ext. 12, dniemeyer@geospherenh.com

7.1 Proposed Pumping Wells

AQUARION proposes to perform the withdrawal test on bedrock Well 22, only. Prior step tests on Well 22 have determined that there is minimal communication between the bedrock aquifer on site and the sand and gravel aquifer. Measurements of drawdown in Well 7-Obs and production Well 7 were minimal during pumping of Well 22. AQUARION and GEOSPHERE believe that operation of Well 7 will not affect aquifer response to pumping Well 22. This is consistent with AQUARION's Wells 6 and 8A, sand and gravel production wells that do not affect the operations or aquifer response to pumping of AQUARION's Wells 20 and 21, located immediately proximate to Wells 6 and 8A (*In accordance with Env-Dw 302.14(e)(6), the system's other wells shall be operated continually, at constant rates during the pumping period unless data is provided which shows these wells will not affect aquifer response to pumping the proposed production well*).

7.2 Proposed Pumping Test Rate

In accordance with Env-Dw 302.14(e)(5), each test well shall be pumped at a single, constant rate that, when multiplied by 24 hours, produces the proposed permitted production volume. Based on the results of the step drawdown tests performed on Well 22 in 2012 and 2016, Well 22 is capable of producing up to 940 gpm (1.35 MGD) over 180 days without dewatering the upper most water bearing fracture at 219 ft bgs. Therefore, AQUARION intends to install a submersible pump capable of pumping at a rate of 940 gpm against system pressures and a total dynamic head of at least 200 ft. The final pumping rate will be determined and established during the first 48 hours of pumping and is not anticipated to exceed 940 gpm. The final pumping rate, under which the pumping test will be performed, will likely be less than 940 gpm.

7.3 Monitoring Locations

AQUARION proposes to monitor water levels at the following on-site points during the withdrawal test: Well 22 (pumping), Well 7 (not pumping), Well 7-Obs.

GEOSPHERE will install two piezometers (PZ-1, PZ-2) to monitor groundwater fluctuations in wetland areas if wetlands are confirmed to be present on or near the well site property. PZ-1 will be installed approximately 800 feet to the east of Well 22, and PZ-2 will be installed approximately 1,200 feet southeast of Well 22. They will be constructed of 1-inch or 1¼-inch diameter steel pipe with a 1-foot section of stainless steel wound screen (typ. slot size = 0.015 inches), and hand driven using a slide hammer. The screen interval will be installed to a depth that would intersect the groundwater table within the wetland deposits closest to Well 22.

A staff gage (SG-1) will be installed if surface water is present in the wetlands area to the south eastern part of the property. This staff gage will be monitored at least twice daily during the antecedent, pumping, and recovery periods of the pumping test, subject to increased monitoring frequency based on the opinion of the hydrogeologist.

Well 7-Obs and Well 7 will be used to monitor water levels within the sand and gravel aquifer during pumping, as both are screened within the sand and gravel aquifer on the well site property. OBS-1, located approximately 500 feet north of Well 22 on McCarron Drive, will be used to monitor water levels within the glacial till overburden (see **Figure 3** for locations of all proposed monitoring points [known at this time]). The above monitoring locations will be surveyed to the National Geodetic Vertical Datum (NGVD).

Figure 3 shows the number of private wells located within 1,000 feet of Well 22, based on AQUARION's records, NHDES records, and a windshield survey conducted by GEOSPHERE on March 1, 2017. In accordance with Env-Wq 403.11(j) and Env-Dw Dw 302.11(h), all water users located within 1,000 feet of the proposed withdrawal, and representative water users located within 1,000 feet of the estimated maximum extent of the cone of depression (= Preliminary WHPA)(based on 180 days of pumping at maximum rate with no recharge) must receive a written request for permission to access the property and monitor water levels.

AQUARION has prepared a transmittal letter along with a well questionnaire to be sent certified mail with return receipt requested at least 14-days prior to commencing the pumping test for each private well owner located within 1,000 feet of the proposed withdrawal. Copies of the transmittal letter and well questionnaire are provided in **Appendix I**. In addition, select water users within the Preliminary Wellhead Protection Area (WHPA) will be selected to monitor impacts to bedrock water levels during pumping, at distances greater than 1,000 feet. AQUARION is prepared to monitor up to eight private wells, including one (preferably an inactive bedrock supply well or bedrock monitoring well) outside the WHPA to act as an ambient well outside the potential influence of pumping. Inclusive of AQUARION's water supply wells located within the WHPA, any public water supplies selected for water level monitoring during the withdrawal test will also be requested to supply or monitor extraction rates. AQUARION's SCADA system will monitor water levels and extraction rates for all of

AQUARION's public water supplies. The data collected by AQUARION will be evaluated to estimate the effects, if any, of the withdrawal from Well 22.

Table 7-1 lists each proposed monitoring location and summarizes the type of well, type of aquifer, and horizontal distances from Well 22.

Table 7-1

Monitoring Point ID	Well Type	Resource Type	Distance / Direction from Well 22
Well 22 (Pumping)	Proposed PWS	Bedrock	0 / -
Well 7 (off)	PWS	Sand & Gravel	122 / SE
Well 7-Obs	Observation Well	Sand & Gravel	124/ SE
Piezometer (PZ-1)	Proposed Observation Point	Wetland	800 / E
Piezometer (PZ-2)	Proposed Observation Point	Wetland	1,200 / SE
Staff Gauge (SG-1)	Proposed Staff Gauge	Surface Water	1,200 / SE
OBS-1	Observation Well	Till	500 / N
AMBIENT	TBD	Bedrock	> 5,000 (TBD)
7 Springhead Lane*	Private Water Supply	Bedrock	< 850 / S
8 Springhead Lane*	Private Water Supply	Bedrock	< 850 / S
10 Springhead Lane*	Private Water Supply	Bedrock	< 850 / S
12 Springhead Lane*	Private Water Supply	Bedrock	< 850 / S
TBD*	Private Water Supply	Bedrock	850- 5,000 / W
TBD*	Private Water Supply	Bedrock	850- 5,000 / N
TBD*	Private Water Supply	Bedrock	850- 5,000 / E
AQUARION Wells 6, 8A, 9, 11, 20, 21	PWS	Bedrock/Sand and Gravel	6,000-7,000 / N

NOTES: TBD = To be determined, PWS = Public Water Supply, * = pending selection and approval from NHDES and private well owner

7.4 Pumping Test Performance

GEOSPHERE will conduct a 7-day pumping test on Well 22 at a pumping rate of approximately 1.35 MGD on Well 22. The pumping test will be performed in accordance with Env-Dw 302.14 and will consist of the following periods:

1. Antecedent Period: 7-day Antecedent Monitoring;
2. Pumping Period: 7-day pumping test of Aquarion's Well 22;
3. Recovery Period: Recovery of Well 22 to 90% of pre-pumping water levels, provided the recovery period is at least 24 hours.

Table 7-2 lists each proposed monitoring location and summarizes the method and frequency of water level monitoring during the antecedent, pumping, and recovery periods of the pumping test in compliance with Env-Dw 302.11(c)(3)d . Also noted in **Table 7-2** is the operating schedule of

any Aquarion public water supply wells that were selected for monitoring during the pumping test.

Table 7-2

Monitoring Point ID	Water Level Monitoring Method	Frequency of Water Level Monitoring	Operating Schedule
Well 22	Pressure Transducer	Every minute	Constant Rate for 7 Days
Well 7	SCADA	Every minute	Off
Well 7-Obs	Pressure Transducer	Every minute	N/A
Piezometers PZ-1, PZ-2	Pressure Transducer	Every minute	N/A
Staff Gauge (SG-1)	Observation	At least twice daily	N/A
OBS-1	Pressure Transducer	Every minute	N/A
AMBIENT	Pressure Transducer	Every minute	TBD
7 Springhead Lane*	Pressure Transducer	Every minute	Regular operation
8 Springhead Lane*	Pressure Transducer	Every minute	Regular operation
10 Springhead Lane*	Pressure Transducer	Every minute	Regular operation
12 Springhead Lane*	Pressure Transducer	Every minute	Regular operation
TBD*	Pressure Transducer	Every minute	Regular operation
TBD*	Pressure Transducer	Every minute	Regular operation
TBD*	Pressure Transducer	Every minute	Regular operation
AQUARION Wells 6, 8A, 9, 11, 20, 21	SCADA Telemetry System	Every minute	Regular operation

NOTES: TBD = To be determined, * = pending selection and approval from NHDES and private well owner, N/A = Not Applicable

Rainfall measurements will be made to the nearest 0.1 foot throughout the program at AQUARION’s Mill Road Facility located approximately 3,500 feet northwest of the well site. Site activities and weather conditions will be observed and logged at the site throughout the pump test program. Prior to the start of the antecedent period, automatic pressure transducers will be installed in Well 22, Well 7 (unless AQUARION’s SCADA system is operating), Well 7-Obs, OBS-1 located off McCarron Drive, piezometer PZ-1, PZ-2, all private bedrock wells located within 1,000 feet of Well 22 (provided access for monitoring is approved by each homeowner), and select, representative private wells (bedrock, or shallow, used, or not-in-use) within 1,000 feet of the WHPA (representing the area that extends 1,000 feet outside the estimated maximum extent of the cone of depression during pumping). Selection of private wells will be based upon: 1) direction from Well 22, in order to represent various directions; 2) depth of wells, in order to represent shallow and deep bedrock conditions; 3) aquifer type, and 4) distance from delineated fractures.

A bedrock monitoring well (to be determined) that is located outside the Potential Impact Area will be selected and monitored with a pressure transducer to act as an ambient bedrock monitoring well.

Transducers will be programmed to collect water levels (accurate to 0.01 ft.) every minute in all monitoring wells detailed in **Table 7-1**. Hand measurements will also be recorded (using an electronic water level meter) at each of the monitoring points located on or near the well site property at least twice daily.

Water levels and withdrawal rates for all AQUARION production wells located within the Preliminary WHPA will be collected and presented against the pumping test data to evaluate the effects of pumping Well 22 on these other sources, as well as the effects of pumping of these other wells on Well 22.

The pumping test will continue for seven (7) days. The water from the pumping well will be discharged into a hydrant located at Well 7 and directed into AQUARION's distribution system in an effort to minimize the potential for infiltration of the withdrawn groundwater into the ground and the shallow and bedrock aquifers near Well 22. AQUARION is prepared to treat the groundwater withdrawn from Well 22 prior to entering the distribution system if treatment is deemed necessary.

At the completion of the withdrawal test, the automatic pressure transducers will be removed and/or data from the transducers will be downloaded. The pumping test data will be analyzed to determine the aquifer characteristics and impacts on local wetlands and surface waters, existing sand and gravel public water supply wells, existing bedrock public water supply wells, and existing private bedrock wells located within or proximate to the Preliminary Wellhead Protection Area. The data will be evaluated with regards to the NHDES Large Groundwater Withdrawal Impact Criteria.

7.4.1 Antecedent Period

Antecedent monitoring will commence 7 days immediately preceding the start of pumping and will continue until the start of pumping to establish static conditions and diurnal changes in water levels. Automatic water level measurements from down-hole pressure transducers will be recorded every minute to satisfy the requirements in Env-Dw 302.14(f). A schedule for monitoring point measurements as proposed for the antecedent period of the pumping test is provided in **Table 7-2**.

7.4.2 Pumping Period

The pumping test will continue for seven (7) days. Automatic water level measurements from down-hole pressure transducers will be recorded every minute to satisfy the requirements in Env-Dw 302.14(f). A schedule for monitoring point measurements as proposed for the withdrawal period of the pumping test is provided in **Table 7-2**.

7.4.3 Recovery Period

Automatic water level measurements from down-hole pressure transducers will be recorded every minute to satisfy the requirements in Env-Dw 302.14(f). A schedule for monitoring point measurements as proposed for the recovery period of the pumping test is provided in **Table 7-2**.

The recovery period of the withdrawal test will commence immediately at shut-down of the pumping well and continue until the water level in Well 22 has recovered to 90% of pre-pumping water level, provided the recovery period is at least 24 hours.

7.5 Permits

Currently AQUARION is proposing to discharge all groundwater withdrawn from Well 22 into AQUARION's water distribution system. If necessary, GEOSPHERE will prepare an application for a Temporary Discharge Permit for the surface discharge of any groundwater generated during the withdrawal test. The application will be submitted to the NH DES, Waste Management Division for subsequent approval. No pumped water may be discharged to the surface prior to receiving approval from the NH DES Temporary Surface Water Discharge Permit Coordinator.

7.6 Discharge/Flow Measurement

The discharge rate will be measured by an in-line totalizing flow meter (calibrated to manufacturers specifications within 5% error prior to the pumping test) at the start of pumping, every 15-minutes for the first hour and every hour after that (frequency may increase or decrease as determined by hydrogeologist). A calibration test report for the flow meter used during the pumping test will be available during the pumping test and provided in the Final Report.

7.7 Correction for Barometric Pressure

Barometric pressure to the nearest 0.001 psi (0.05% accuracy) will be recorded at the ambient well. Water levels collected using pressure transducers (LevelTROLL 400TM) will be corrected by removing the effects associated with barometric pressure changes recorded at the ambient well using the barometric pressure transducer (BaroTROLLTM).

7.8 Private Wells Monitoring Requirements

In accordance with Env-Wq 403.11 (j), the owners of all private wells located within 1,000 feet of Well 22, and select, representative private wells within the WHPA (representing the area that extends 1,000 feet outside the estimated maximum extent of the cone of depression during pumping) will be notified in writing at least fourteen days prior to the beginning of the withdrawal test. Included with the written notification will be an informational form letter (supplied by NHDES). The letter will request monitoring permission and a written response, will define responsibility to prepare the source for monitoring, state the monitoring requirements, and include an offer to disinfect and reseal the source when the monitoring ends. In addition, any residential well owner will be informed that AQUARION of New Hampshire (the applicant) will supply potable water or cease the pumping test should their water supply needs not be met, and identify the name and phone number of the contact person in the event of a water outage during the testing.

7.9 Wetlands Monitoring

Two proposed piezometers (PZ-1, PZ-2) will be installed by hand or slide hammer and will consist of 1-inch or 1¼-inch diameter steel casing with a 1-foot stainless steel wound screen and point at the base. The newly installed piezometers will be used to measure any impact to

wetlands due to pumping of the production well. The proposed piezometers will be located in wetland area to the rear of Lot 147-14 and the rear of Lot 165-1.

7.10 Surface Water Monitoring

No surface waters are located within 1,000 feet of Well 22. The nearest potential surface waters are located approximately 1,200 feet to the southeast, and a staff gage (SG-1) will be installed if surface water is deemed present and water levels will be monitored as described in **Table 7-2**.

7.11 Water Quality Sampling Program

Water quality samples from Well 22 will be collected directly from a sample port installed with the wellhead assembly and in line with the discharge hoses and flow meter at the following times:

- 1) between the first and the fifth hour of the pumping period;
- 2) midway through the pumping period; and,
- 3) within the last 3 hours of the pumping period.

The first 2 water quality samples collected shall be analyzed for the following parameters (at a minimum):

- Volatile organic compounds
- Iron
- Manganese
- pH
- Specific conductance
- Hardness
- Chloride
- Sodium
- Nitrate

The third sample shall be analyzed for those parameters required to be monitored in groundwater systems per Env-Dw 707, as well as perfluorinated compounds, 1,4-Dioxane and Radon. All analyses shall be performed by a laboratory that is accredited for all applicable drinking water categories and methods in accordance with Env-C 300. Microscopic particulate analysis is not required as Well 22 is not located within 200 feet of any surface water high water line.

8.0 PUBLIC NOTIFICATION (ENV-WQ 403.05(A)(12))

After NH DES review and determination that the Preliminary Report and Application are complete, in accordance with RSA 485-C:21, II, copies of the Preliminary Report, the Application Form, and any subsequent materials submitted to the NH DES shall be forwarded by certified mail by the applicant to the governing bodies of each municipality and each supplier of

water within the estimated potential impact area of the proposed withdrawal. The municipalities located within the estimated potential impact area include the Towns of North Hampton and Hampton, New Hampshire. The active water suppliers located within the potential impact area include only the applicant, AQUARION. The names and addresses of the contact persons for the municipalities to be notified are as follows:

1. Town of Hampton, Town Clerk, 100 Winnacunnet Road, Hampton, NH, 03842;
2. Town of North Hampton, Town Clerk, 233 Atlantic Avenue, North Hampton, NH 03862;

9.0 PRELIMINARY GROUNDWATER QUALITY RESULTS (ENV-WQ 403.26)

On October 16, 2012 prior to shutdown of a preliminary step-drawdown withdrawal test, GEOSPHERE collected groundwater samples from Well 22 for laboratory water quality analysis of inorganic compounds, secondary contaminants, metals, radionuclides, VOCs, and SOCs. The samples were transported to Eastern Analytical Laboratories of Concord, New Hampshire under proper chain of custody protocols.

On December 14, 2016 prior to shutdown of a second step-drawdown withdrawal test, GEOSPHERE collected groundwater samples from Well 22 for laboratory water quality analysis of inorganic compounds, secondary contaminants, metals, radionuclides, VOCs, and SOCs. The samples were transported to Eastern Analytical Laboratories of Concord, New Hampshire under proper chain of custody protocols.

The laboratory water quality analysis reports are included in **Appendix D** and the results are tabulated in **Table 1** and **Table 2**. As shown, all water quality parameters were detected at levels below the New Hampshire Maximum Contaminant Levels (NHMCLs). The water quality analysis results were very favorable.

Water samples will be collected from Well 22 during the extended withdrawal test in accordance with Env-Dw 302.15.

10.0 CONCEPTUAL HYDROLOGIC MODEL REFINEMENT (ENV-WQ 403.15)

The conceptual hydrologic model and preliminary estimate of the Potential Impact Area, prepared in accordance with Env-Wq 403.07, as presented in Section 4.0 of this report, will be refined based on the results of the extended-day withdrawal test. The results of the refinement will be included in the final report prepared in accordance with Env-Wq 403.15 and Env-Dw 302.21.

11.0 PRELIMINARY WATER RESOURCE AND USE INVENTORY REFINEMENT (ENV-WQ 403.16)

The preliminary water resource and water use inventory will be updated if the inventory is more than 90 days old at the time the final report is prepared. The preliminary inventory will be revised to reflect any expansion or decrease in the size of the refined Potential Impact Area. The

results of the updated inventory will be included in the final report prepared in accordance with Env-Wq 403.16 and Env-Dw 302.23.

12.0 IMPACT DESCRIPTION (ENV-WQ 403.17)

Upon completion of withdrawal testing, the withdrawal test data will be analyzed to estimate the impact of the withdrawal on water resource and use. Impacts will be defined based on the refined conceptual hydrologic model withdrawal conditions and the updated water resource and use inventory. Impacts will be quantified to determine if adverse impacts might occur. If it is determined that adverse impacts may occur, a monitoring and reporting program will be developed to accompany the operation of the proposed withdrawal in order to provide data that will assess whether adverse impacts are or will occur.

If it is determined that adverse impacts are occurring as a result of the proposed withdrawal, mitigation measures will be developed in accordance with Env-Wq 403.24, which describes the procedures and criteria to be used for impact mitigation. Any unmitigated adverse impacts will be reported to the NHDES within 5 days of discovery in accordance with Env-Wq 403.23, which describes the procedures for adverse impact reporting and responses. If necessary, a program will be developed to provide an alternative water supply to water sources that are adversely impacted by the withdrawal in accordance with Env-Wq 403.30, which describes the procedures and criteria for source replacement.

13.0 CONTAMINATION CONTROL PROGRAM (ENV-DW 302.24) AND WELLHEAD PROTECTION PROGRAM (ENV-DW 302.25)

In accordance with Env-Ws 302.24 and 302.25, a contamination control program and wellhead protection program is required for the final report. AQUARION currently has contamination control and wellhead protection program in place for its existing water supplies. The program will be modified, if necessary, to incorporate any expansion of the wellhead protection area to accommodate withdrawals from Well 22.

14.0 CONSTRUCTION DESIGN (ENV-DW 302.26)

Well 22 was installed in accordance with Env-Ws 302.26; well construction complies with RSA 482-B, We 100 et seq. A copy of the well construction log for Well 22 can be found in **Appendix B**.

15.0 REFERENCES

Towns of Hampton and North Hampton, NH, Assessors records file search, February 2017.

Potential Contamination Source Windshield Survey, GEOSPHERE, November 2016 & March 2017.

Water User Inventory Map for Hampton and North Hampton, NH Potential Impact Area, New Hampshire Department of Environmental Services (NHDES), March 2017.

Potential Contamination Source Inventory Map for Hampton/North Hampton Preliminary WHPA, NHDES, March 2017.

One Stop Environmental Site Information, On-Line Remediation Sites Query Results, NHDES, March 2017.

Hampton Aerial Photo Quadrangle (1210001600), 1-foot color, UNH GRANIT.

Topographic Quadrangle Map for Hampton, NH, United States Geologic Survey, 1987, Scale 1:24,000. Contour interval = 3 meters.

Southeastern New Hampshire Water Resources Study, Groundwater Assessment-Main Report, Army Corps of Engineers, March, 1981.

Applied Hydrogeology, Second Edition, Macmillan Publishing Company, New York, C.W. Fetter, 1988.

VLF Survey, AQUARION Wellfields SB-1, Well 7, Well 14, Hampton & North Hampton, NH, Hager-Richter Geoscience, September 2012.

Bedrock Geologic Map of New Hampshire, John Lyons, et al, 1997.

Geohydrology and Water Quality of Stratified Drift Aquifers in the Lower Merrimack and Coastal River Basins, Southeastern New Hampshire, U.S. Department Of The Interior, U.S. Geological Survey, 1992.

The Geology of the Seacoast Region, New Hampshire, Robert F. Novotny, 1969.

Generalized Estimates from Streamflow Data of Annual and Seasonal Ground-Water-Recharge Rates for Drainage Basins in New Hampshire, Robert H. Flynn and Gary D. Tasker. U.S. Geological Survey, 2004.

TABLES

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- Table 1 – Summary of Water Quality Analysis Results During Step Test 1 (2012)
Table 2 – Summary of Water Quality Analysis Results During Step Test 2 (2016)

TABLE 1
 Well 22 Water Quality Analysis Results
 Step-Drawdown Withdrawal Testing
 Aquarion Water Company, Hampton, NH

Compound	Units	Well 22	
		10/16/2012	NHMCLs
1:15 PM			
Inorganics			
Fluoride	mg/L	0.55	4 / 2*
Sulfate	mg/l	29	250*
Chloride	mg/L	64	250*
Nitrite	N, mg/L	<0.5	1
Nitrate	N, mg/L	<0.5	10
pH	SU	8.2	6.5-8.5*
Alkalinity Total (CaCO3)	mg/l	100	NS
Conductivity	umhos/cm	470	NS
TDS	mg/L	270	NS
Total Metals			
Aluminum	mg/L	<0.05	0.05-0.2*
Antimony	mg/L	<0.001	NS
Arsenic	mg/L	0.006	0.01
Barium	mg/L	0.007	2
Beryllium	mg/L	<0.001	0.004
Cadmium	mg/L	<0.001	0.005
Chromium	mg/L	<0.001	0.1
Copper	mg/L	0.001	1*
Cyanide	mg/L	<0.02	0.2
Iron	mg/L	<0.05	0.3*
Lead	mg/L	<0.001	0.002
Manganese	mg/L	0.016	0.05*
Mercury	mg/L	0.0003	0.002
Nickel	mg/L	<0.001	NS
Silver	mg/L	<0.001	0.1
Selenium	mg/L	<0.001	0.05
Thallium	mg/L	<0.001	0.002
Zinc	mg/L	0.012	5*
VOCs - Volatile Organic Compounds			
1, 4 - Dioxane	ug/l	<0.25	NE
1, 2 - Dibromoethane (EDB)	ug/l	<0.02	0.05
Dibromochloropropane (DBCP)	ug/l	<0.02	0.2
SOCs - Synthetic Organic Compounds			
SOCs	ug/l	ND	Various
Radionuclides			
Gross Alpha	pCi/l	2.4	15
Radium 226	pCi/l	0.1	5 Total
Radium 228	pCi/l	0.5	
Radon	pCi/l	1,686	NE
Uranium	ug/L	0.2	30

Notes:

ND = Not detected, no detection limit reported

NS = Not specified

NE = Not established

< = Less than reporting / detection limit shown

NHMCL = New Hampshire Maximum Contaminant Level

* = New Hampshire Secondary Maximum Contaminant Level

Bold = detected above laboratory detection limit

Shaded = Exceeds maximum contaminant level (MCL)

Only detected VOCs and SOCs are listed, with exception of specific additional analysis of VOCs.

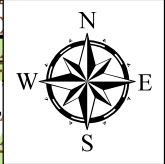
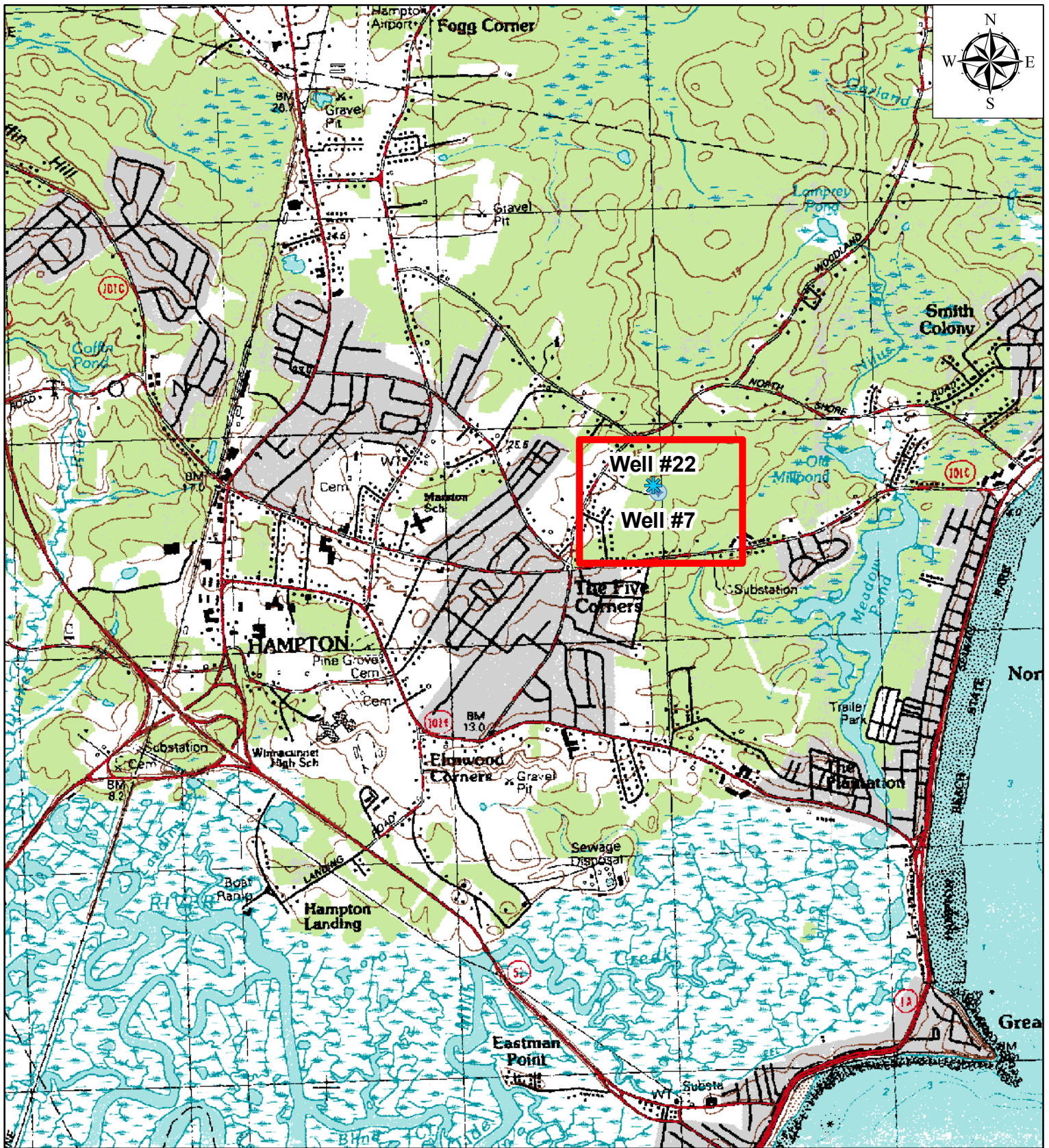
TABLE 2
 Well 22 Water Quality Analysis Results
 Step-Drawdown Withdrawal Testing
 Aquarion Water Company, Hampton, NH

Compound	Units	Well #22	NHMCLs
		12/14/2016 1:00 PM	
Inorganics			
Fluoride	mg/L	0.55	4 / 2*
Sulfate	mg/l	28	250*
Chloride	mg/L	47	250*
pH	SU	8.1	6.5-8.5*
Total Metals			
Antimony	mg/L	<0.001	NS
Arsenic	mg/L	0.003	0.01
Barium	mg/L	0.006	2
Beryllium	mg/L	<0.001	0.004
Cadmium	mg/L	<0.001	0.005
Chromium	mg/L	<0.001	0.1
Copper	mg/L	<0.001	1*
Iron	mg/L	<0.05	0.3*
Manganese	mg/L	0.016	0.05*
Mercury	mg/L	0.0002	0.002
Nickel	mg/L	0.003	NS
Selenium	mg/L	<0.001	0.05
Sodium	mg/L	86	100-250*
Thallium	mg/L	<0.001	0.002
Zinc	mg/L	<0.005	5**
VOCs - Volatile Organic Compounds			
1, 4 - Dioxane	ug/l	<0.25	NE
1, 2 - Dibromoethane (EDB)	ug/l	<0.02	0.05
Dibromochloropropane (DBCP)	ug/l	<0.02	0.2
All other VOCs	ug/l	ND	Various
SOCs - Synthetic Organic Compounds			
SOCs	ug/l	ND	Various
SOC - Chlorinated Herbicides (Method 515.4)			
Pentachlorophenol	ug/l	<1	1
2,4-D	ug/l	<5	70
2,4,5-TP (Silvex)	ug/l	<5	50
Picloram	ug/l	<5	500
Dinoseb	ug/l	<5	7
SOC - Chlorinated Pesticides (Method 505)			
Chlordane	ug/l	<0.5	2
Toxaphene	ug/l	<2	3
N-Methylcarbamoyloximes (Method 531.2)			
Aldicarb	ug/l	<0.5	3
Aldicarb Sulfone	ug/l	<0.5	4
Aldicarb Sulfoxide	ug/l	<0.5	2
Carbaryl	ug/l	<0.5	
Carbofuran	ug/l	<0.5	40
3-Hydroxycarbofuran	ug/l	<0.5	
Methiocarb	ug/l	<0.5	
Methomyl	ug/l	<0.5	
Oxamyl	ug/l	<0.5	200
Propoxur	ug/l	<0.5	
Radionuclides			
Gross Alpha	pCi/l	1.3	15
Radium 226	pCi/l	0.9	5 Total
Radium 228	pCi/l	0.6	
Radon	pCi/l	1,835	NE
Uranium	ug/L	ND	30
PFC/PFOA			
perfluorooctanoic acid (PFOA)	ng/l	0.763	70**
perfluorononanoic acid	ng/l	<0.6	NE
perfluorodecanoic acid	ng/l	<0.5	NE
perfluoroundecanoic acid	ng/l	<1	NE
perfluorododecanoic acid	ng/l	<0.5	NE
perfluorotridecanoic acid	ng/l	<0.5	NE
perfluorotetradecanoic acid	ng/l	<0.5	NE
perfluorohexanoic acid	ng/l	<.5	NE
perfluoroheptanoic acid	ng/l	<0.5	NE
perfluorobutane sulfonate	ng/l	<0.7	NE
perfluorohexane sulfonate	ng/l	<1	NE
perfluoro-octane sulfonate (PFOS)	ng/l	<2	70**
Glyphosate	ug/L	<4.2	700

Notes:
 ND = Not detected, no detection limit reported
 NS = Not specified
 NE = Not established
 < = Less than reporting / detection limit shown
 NHMCL = New Hampshire Maximum Contaminant Level
 * = New Hampshire Secondary Maximum Contaminant Level
 ** = U.S. EPA Health Advisory Level (70 ng/l for PFOA + PFOS)
 # = Awaiting lab data
 Bold = detected above laboratory detection limit
 Shaded = Exceeds maximum contaminant level (MCL)
 Only detected VOCs and SOC are listed, with exception of specific additional analysis of VOCs.

FIGURES

- Figure 1 – Locus Plan
- Figure 2 – Map and Lot Detail
- Figure 3 – Proposed Monitoring Locations
- Figure 4 – Geologic Cross Section A-A'
- Figure 5 – Fracture Trace Analysis, VLF, and Private Wells
- Figure 6 – Potential Impact Area and Preliminary Wellhead Protection Area/Recharge Area



Legend




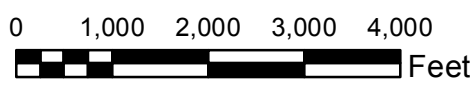
-  New Source Bedrock Well #22
-  Sand and Gravel PWS Well #7
-  Wellfield Location

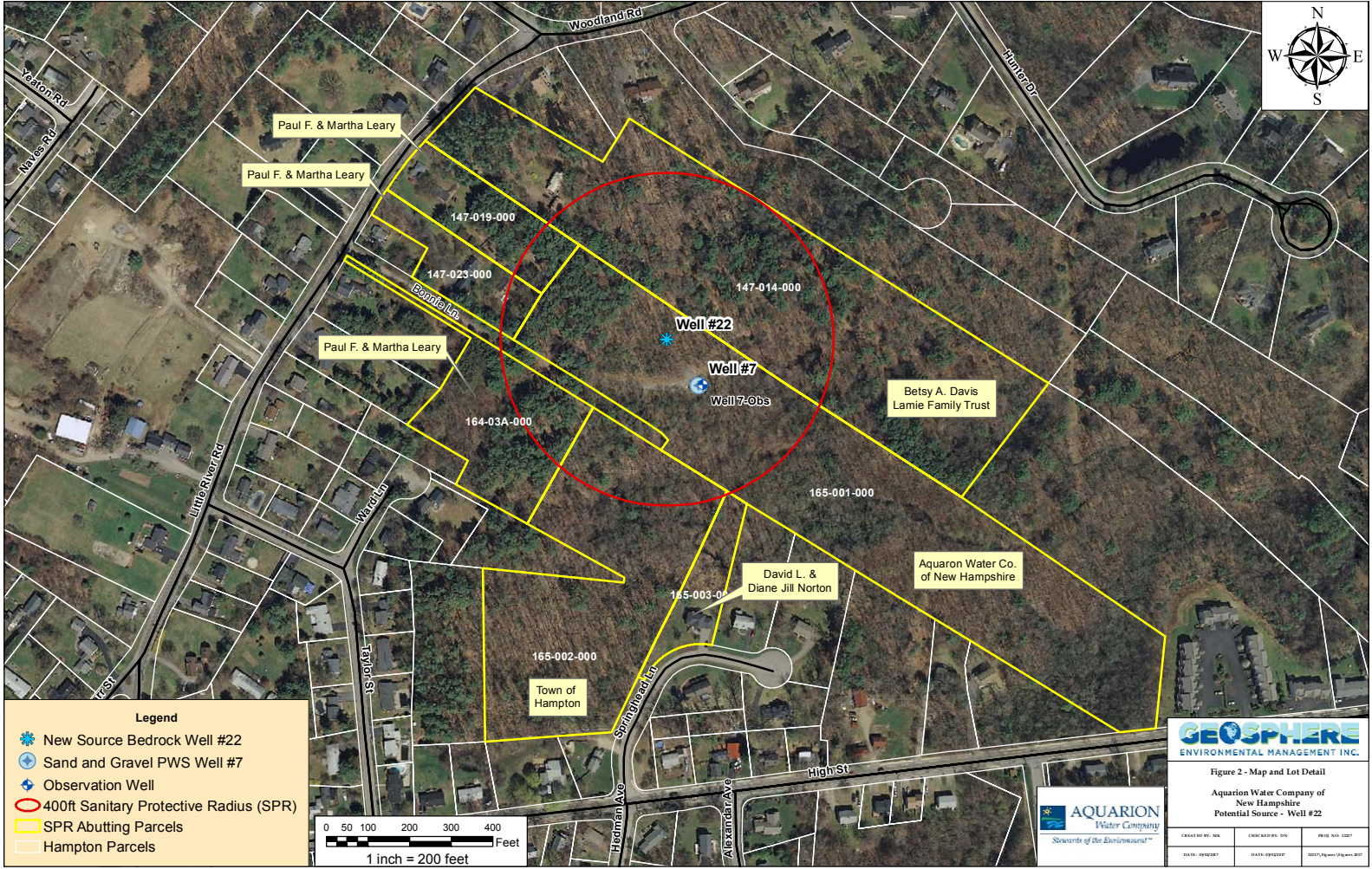


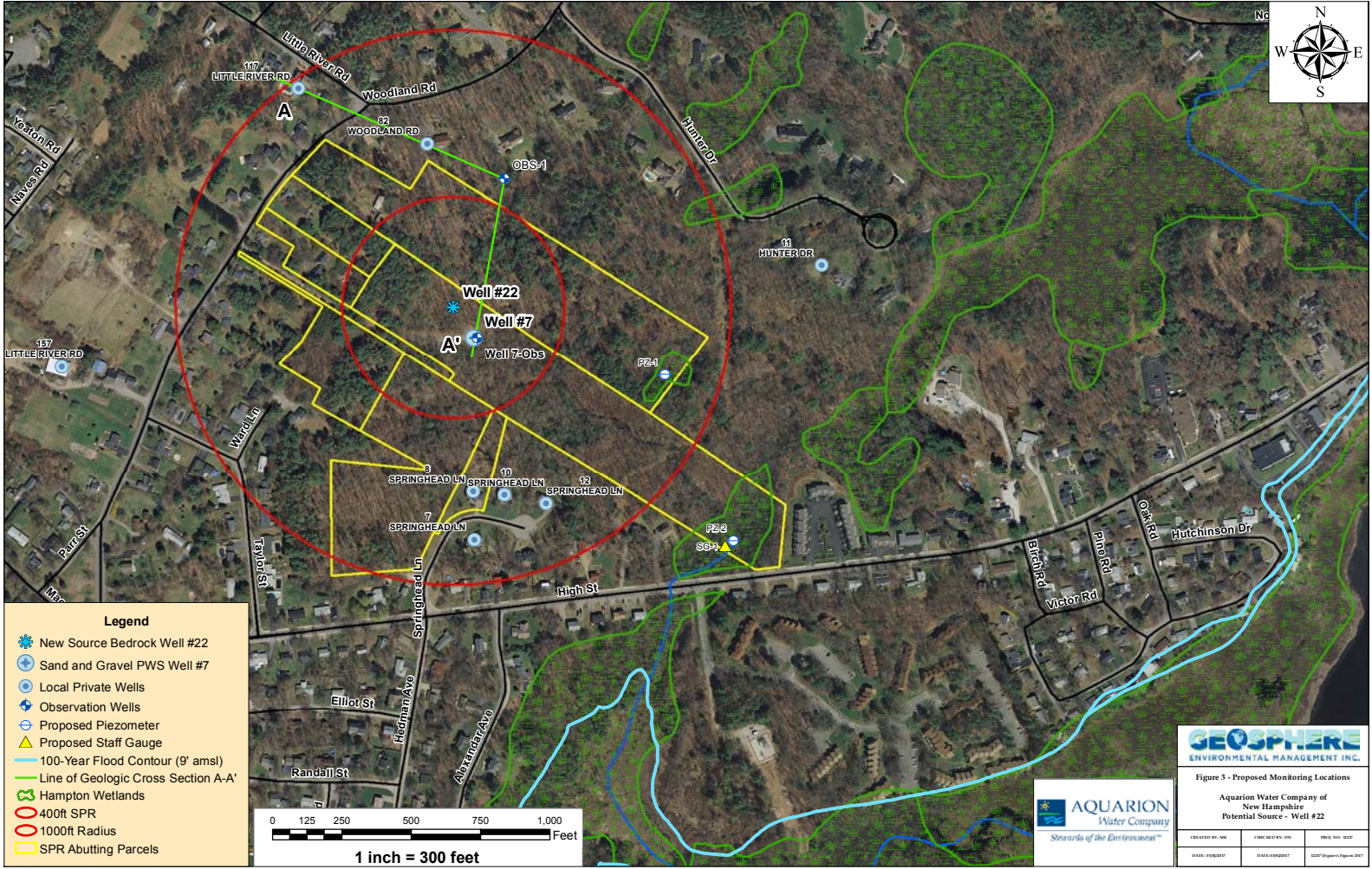

Figure 1 - Locus Plan
 Aquarion Water Company of
 New Hampshire
 Potential Source - Well #22



1 inch = 2,000 feet

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DATE: 03/02/2017	DATE: 03/02/2017	1217\Figures\Figures 2017





Legend

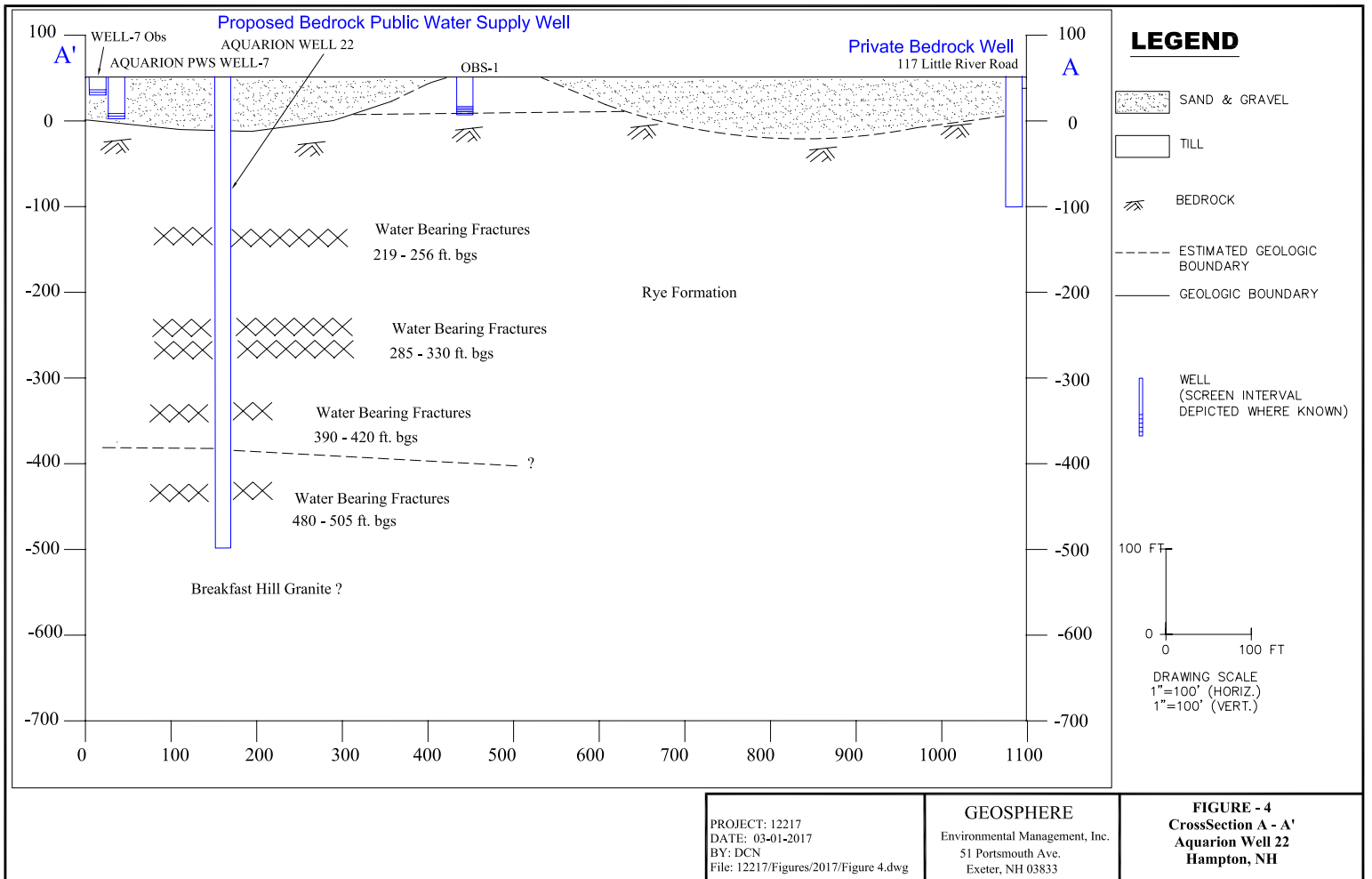
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- Sand and Gravel PWS Well #7
- Local Private Wells
- Observation Wells
- Proposed Piezometer
- Proposed Staff Gauge
- 100-Year Flood Contour (9' amsl)
- Line of Geologic Cross Section A-A'
- Hampton Wetlands
- 400ft SPR
- 1000ft Radius
- SPR Abutting Parcels

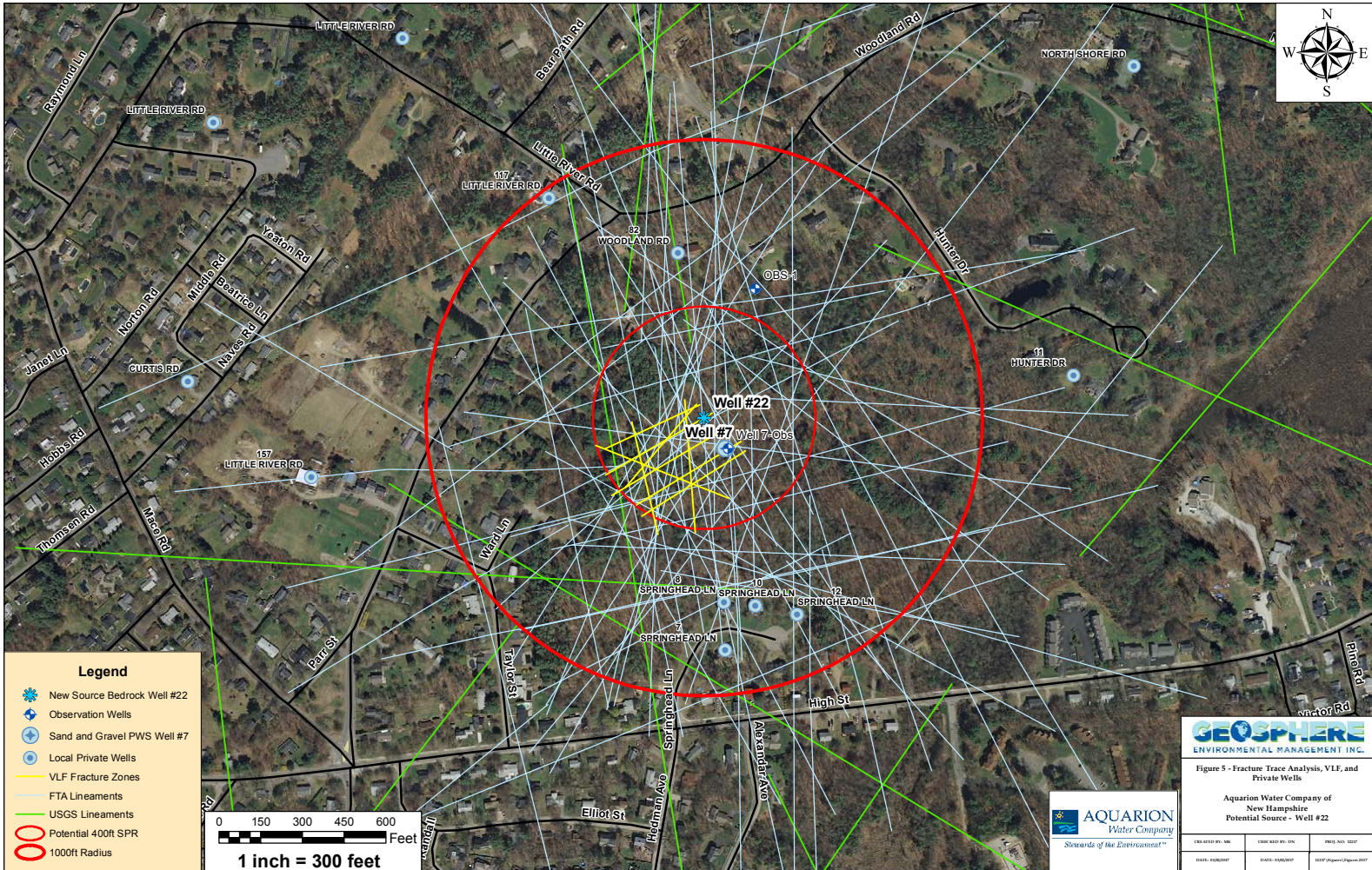
GEOSPHERE
ENVIRONMENTAL MANAGEMENT INC.

AQUARION
Water Company
Sources of the Environment™

Figure 3 - Proposed Monitoring Locations
Aquarion Water Company of
New Hampshire
Potential Source - Well #22

PREPARED BY: SAK	DATE: 02/19/2017	PROJECT NO.: 2017
DRAWN BY: SAK	DATE: 02/19/2017	PROJECT NO.: 2017





Legend

- New Source Bedrock Well #22
- Observation Wells
- Sand and Gravel PWS Well #7
- Local Private Wells
- VLF Fracture Zones
- FTA Lineaments
- USGS Lineaments
- Potential 400ft SPR
- 1000ft Radius

0 150 300 450 600
 Feet
1 inch = 300 feet

GEOSPHERE
 ENVIRONMENTAL MANAGEMENT INC.

Figure 5 - Fracture Trace Analysis, VLF, and Private Wells

Aquarion Water Company of New Hampshire
 Potential Source - Well #22

PREPARED BY: SAK	CHECKED BY: CVA	PROJECT NO.: 2017
DATE: 04/06/2017	DATE: 04/06/2017	0107 (Aquarion) Figure 2017



Existing Aquarion Water Company Wellhead Protection Area

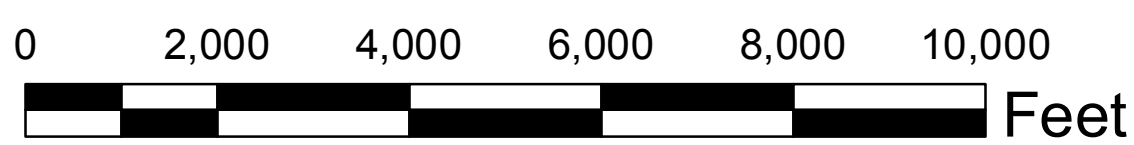
Preliminary Wellhead Protection Area/ Recharge Area

Potential Impact Area

Topographic Image Source: United States Geological Survey via UNH GRANIT. Edited 1985.

Legend

- Preliminary WHPA/Recharge Area
- Potential Impact Area
- * New Source Bedrock Well #22
- + Aquarion Water Supply Wells
- FTA Lineaments
- USGS Lineaments
- Existing Aquarion Water Company WHPA
- 4000ft Cone of Depression



1 inch = 2,000 feet
1:24,000



Figure 6

Potential Impact Area and Preliminary Wellhead Protection Area/ Recharge Area

Aquarion Water Company of New Hampshire
Potential Source - Well #22

CREATED BY: MK & LB	CHECKED BY: DN	PROJ. NO: 12217
DATE: 04/19/2017	DATE: 04/19/2017	12217\Figures\ LargeFormat Topo

Appendix A

Water Conservation Plan, prepared by Aquarion Water Company



Water Conservation Plan Ongoing Compliance Reporting Form

Drinking Water and Groundwater Bureau



RSA/Rule: RSA 485:61/ Env-Wq 2101

Pursuant to Env-Wq 2101, *Water Conservation* rules, community water systems with approved water conservation plans (WCP) are required to submit a three-year compliance report form to the New Hampshire Department of Environmental Services (NHDES). This form is to be used for fulfilling the reporting requirement.

This form and a copy of your system's WCP are available on the NHDES website at http://des.nh.gov/organization/divisions/water/dwgb/water_conservation/index.htm. Approved WCPs are located under "Permits," and the compliance reporting form is located under "Forms/Applications."

Instructions:

- All systems shall complete Section 1 – Section 4 and Section 7.
- Systems using service meters to track customer usage shall also complete Section 5 and Section 6.
- Submit the completed form and any attachments to:

Kelsey Vaughn
NHDES Drinking Water and Groundwater Bureau
Water Conservation Program
PO Box 95
Concord, NH 03302-0095
kelsey.vaughn@des.nh.gov
Tel: (603) 271-0659 Fax: (603) 271-0656

Section 1. Water System Information and Certification:

Water System Name: Aquarion Water Compnay of New Hampshire

Water System Town: Hampton, North Hampton & Rye (in part)

Name of Individual Completing Report: Carl McMorran

Title / Relationship to Water System: Operations Manager

Phone Number: (603) 926-3319 ext 116 Email: cmcmorran@aquarionwater.com

I hereby certify that the information provided in this form is accurate and true to the best of my knowledge. (To be signed by the owner or the primary operator of the system.)

Date: February 21, 2017

Signature: _____

Carl McMorran

Section 2. Pressure Reduction: Please provide the following information related to system pressures and pressure management.

Minimum Pressure: 51 psi Maximum Pressure: 105 psi

Miles of pipe between 80 and 100 psi: 55.09 Miles of pipe above 100 psi: 10.06

Please describe how pressure has been managed in areas over 80 psi:

Pressure is dictated by the land elevation across the service territory and by the normal operational water elevations of the Exeter Road and Glade Path Tanks. Due to these constraints, system pressures cannot be managed to any large extent.

Section 3. Outreach: Please document completed water efficiency outreach efforts. Depending on what was proposed in the system’s WCP, not all of the requested information may apply.

Aquarion conducts water conservation programs in its service area (Hampton, North Hampton and Rye), including:

Our website (www.aquarionwater.com) provides information that customers may use to reduce their water use.

We routinely incorporate conservation themes in our public relations documents as listed below.

Annually we promote the sale of rain barrels to encourage use of non-potable water for outdoor uses.

Please provide the date, title and author of materials issued to consumers. If NHDES is not the author of the materials, please attach a copy of the materials issued.

Year	Date(s) of mailing or event	Material Title	Author / Event Name
2013	May – June 2013	2012 Water Quality Report (see page 4)	Aquarion Corporate Communications Department
2013	Sep – Nov 2013	Water Watch	Aquarion Corporate Communications Department
2013	Dec 2013 – Feb 2014	Water Watch	Aquarion Corporate Communications Department
2014	May – June 2014	2013 Water Quality Report (see page 4)	Aquarion Corporate Communications Department
2014	Jun – Aug 2014	Water Watch	Aquarion Corporate

			Communications Department
2015	May – June 2015	2014 Water Quality Report (see page 5)	Aquarion Corporate Communications Department
2016	May – June 2016	2015 Water Quality Report	Aquarion Corporate Communications Department

Were educational materials posted in a public location? Yes No

If “Yes” please provide the title(s) of the posted materials, the location and the date of the posting (m/yr):

All of the above were available at our business office at 7 Scott Road in Hampton at the time of, and subsequent to, their publication.

Section 4. Source, Distribution and Process Meter Installation and Maintenance: Please complete Table 1. Attach meter testing and calibration records for all source and distribution meters. If there is no distribution meter, please include the testing and calibration records for meters measuring any process water use prior to entering the distribution system.

Table 1. Meter Records

Describe: Source Name (ID), Distribution Meter or Process Meter	Meter Make & Model	Meter Size	Date of Installation	Date of Last Calibration
GPW 5A (20020-S18)	Badger M2000	4-in	6/6/2013	3/4/2016
White's Field Well #6 (20020-S02)	Neptune HPT	6-in	7/7/2007	3/3/2016
Ryder's Well #7 (20020-S03)	Badger M2000	4-in	2/27/2014	3/3/2016
Well #8A (20020-S19)	Badger M2000	3-in	12/19/2013	3/3/2016
Scammon Well #9 (20020-S05)	Badger M2000		4/23/2014	3/3/2016
Crenshaw Well #10 (20020-S06)	Foxboro 9100A	8-in	12/13/2007	3/4/2016
Sicard Well #11 (20020-S07)	Badger M2000	8-in	9/3/2012	3/3/2016
Winnicutt WL #12 Coakley (20020-S08)	Badger M2000	4-in	12/19/2013	3/4/2016
BRWell 13B next to Coakley (20020-S17)	Neptune HPT	4-in	7/7/2007	5/2/2016
Well #14 Dalton Well (20020-S10)	Badger M2000	6-in	11/26/2012	3/4/2016
Peabody Well #16 (20020-S11)	Badger M2000	6-in	11/26/2012	3/4/2016
Carey Well #17 (20020-S12)	Neptune HPT	4-in	1/9/2010	10/20/2016
Carey Well #18 (20020-S13)	Neptune HPT	4-in	1/9/2010	5/2/2016
Carey Well #19 (20020-S14)	Neptune HPT	4-in	1/9/2010	5/2/2016
Mill Road BRW #20 (20020-S15)	Neptune HPT	4-in	5/18/2003	3/2/2016
Mill Road BRW #21 (20020-S16)	Neptune HPT	4-in	5/18/2011	10/20/2016

Section 5. Service Meter Installation and Maintenance: Please complete Table 2 using the service meter testing/replacement information for the past three years.

Table 2. Service Meter Log

Type of Connection	Number of Accounts	Number of Metered Accounts	Meters Tested / Replaced in Last Three Years
Residential	8,166 – 8,265	8,166 – 8,265	Information not available by category
Industrial / Commercial / Institutional	667 – 677	667 – 677	
Municipal	59	59	
Total	8,889 – 9,001	8,889 – 9,001	4,366

Section 6. Water Rates: Please provide the requested information, below.

Billing rate (ex. quarterly): Some accounts quarterly; others monthly

How are service meters read?

Visual read. Touch pad read. Handheld radio read/walk by. Mobile radio read/drive by.

Fixed automatic meter read/automatically transmitted to a central collector, normally at an office.

If the system has a base fee, what is it? See attached tariff

How much usage does the base fee cover, if any? 0 Units (ex. gal): N/A

What is the water rate? See attached tariff

Rate per Unit	Range of Use (ex. 0 - 10,000 gal)	Units (ccf, gal, etc.)

Section 7. Leak Detection: Please complete Table 3 with all leaks discovered in the past three years or you may attach a spreadsheet with the same information.

Table 3. Leak Log for Past Three Years; see attached Table 3.

Leak #	Nearest Address to Leak	Leak Type: Main, Service, Valve or Hydrant	Date Leak Discovered	Date Leak Repaired	Leak Rate: GPM	Discovered during a leak detection survey? Y/N
1						
2						
3						

If you have completed an acoustic leak detection survey(s) and/or night flow analysis over the past three years, please complete the information below:

■ Acoustic leak detection survey per AWWA standards completed by an outside contractor.

Contractor	Dates	Percent of System Surveyed
M2 Service Group	March 2013	99
Arthur Pyburn & Sons	August – September 2013	99
Arthur Pyburn & Sons	June – August 2014	99
New England Water Distribution	April – June 2015	99
Arthur Pyburn & Sons	April – June 2016	99
Arthur Pyburn & Sons	December 2016	99

Please attach the leak detection survey report prepared by the contractor.

Acoustic leak detection per AWWA standards completed by in-house personnel.

Aquarion staff conducts frequent leak detection activities, which follow AWWA recommendations, but not to the level of detail as shown below. The following table summarizes staff leak detection activities for 2013, 2014, 2015 and 2016. Details are attached on Table 4.

TABLE 4

Leak Investigation Type	2013	2014	2015	2016	Total
Ground microphone	0	0	4	0	4
Hydrants	3	5	6	5	19
Leak loggers	0	91	188	107	386
Service leaks	51	24	55	58	188
Other	0	1	1	0	2
Total	54	121	254	170	599

Please fill out the certification below. Indicate what leaks were discovered, if any, during the survey in the last column of Table 3 on page 5.

ACOUSTIC LEAK DETECTION SURVEY CERTIFICATION

Date(s) of survey(s) and percentage of system surveyed: _____

Leak detection completed by (Name, Title): _____

(Please initial the statements that apply)

_____ I certify that I conducted a leak detection survey, per AWWA standards, on the above mentioned dates for the water system identified in Section 1.

_____ I certify that leak detection was conducted using all available contact points with the following equipment (make/model): _____

_____ I certify that a ground microphone was used at 6 to 10 foot intervals in areas of non-metallic pipe and/or areas with excessive distance between contact points.

_____ I certify that I have been trained to use the leak detection equipment and am confident that I can identify leaks using the equipment.

Night flow analysis. No night flow analyses were conducted.

Please attach the following:

- Records for each night flow event showing the flows recorded.

- Analysis of each night flow event, including a brief statement as to whether or not a leak was suspected and why. If a leak was suspected, please provide details if the leak was discovered and repaired.

Acoustic leak detection survey and night flow analysis are common leak detection methods. NHDES has worked with some systems to develop other methods that are specific to those systems; such as quarterly water audits or the inspection of residential units for leaks.

If the WCP for your system stipulates a leak detection method other than an acoustic leak detection survey or night flow analysis, please describe the leak detection actions taken by the system over the past three years:

Please provide the dates of the leak detection activities:



AQUARION
Water Company

Stewards of the Environment™

2012 Water Quality Report

For Customers in the
Hampton, North Hampton
and Rye System

***Caring For Our Environment.
Committed To Our Communities.***



Understanding Your Water Quality Table

- Arsenic:** Erosion of natural deposits.
- Barium:** Erosion of natural deposits.
- Copper:** Corrosion of household plumbing systems.
- Fluoride:** Erosion of natural deposits.
- Lead:** Corrosion of household plumbing systems.
- Nitrate:** Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
- Total Haloacetic Acids:** By-product of drinking water chlorination.
- Alpha Emitters:** Erosion of natural deposits.
- Combined Radium:** Erosion of natural deposits.
- Uranium:** Erosion of natural deposits.
- Chloride:** Naturally present in the environment.
- Sodium:** Water treatment processes; use of road salt; naturally present in the environment.
- Sulfate:** Naturally present in the environment.

Digest of Water Quality Information

Protecting your water at home:

Cross-Connection Control Program

Our Cross-Connection Control Program helps ensure that your drinking water is protected from possible contamination. A cross-connection is any actual or potential connection between a distribution pipe of potable water

from a public water system, and any waste pipe, sewer, drain, or other unapproved source that has the potential, through back-pressure or back-siphonage, to create a health hazard to the public water supply and the water system within the premises.



Aquarion's certified cross-connection personnel routinely conduct surveys and test backflow prevention devices at our customers' facilities for regulatory compliance. If they find unprotected cross-connections, they will require installation of backflow prevention devices to protect the water distribution system. A lawn irrigation system is a prime example of a cross-connection needing a backflow-prevention device.

To prevent this backflow contamination, the state Department of Environmental Services (DES) requires that we inspect your irrigation system to ensure that an appropriate backflow prevention device is in place. The state DES also requires that these devices be tested annually to ensure proper performance.

Source Water Assessment Report

The state Department of Environmental Service's Source Water Assessment Report indicates an average of 6 contamination susceptibility factors were rated low, an average of 4 were rated medium, and 2 were rated high for 18 of our water sources. The complete report is available for inspection during normal business hours at our office: Aquarion Water Company of New Hampshire, 7 Scott Road, Hampton, NH.

Protecting water at the source

Even small quantities of pollutants may be enough to contaminate a drinking water supply. Examples of pollutants that may wash into surface water or seep into ground water include:

- ◆ Microbial contaminants from septic systems, agriculture and livestock operations, and wildlife;
- ◆ Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- ◆ Pesticides and herbicides from sources such as agriculture, urban storm water runoff, and residential uses;
- ◆ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes; and
- ◆ Radioactive contaminants that can be naturally occurring.

You can help prevent water contamination

- ◆ Ensure that your septic system is working correctly.
- ◆ Use chemicals and pesticides wisely.
- ◆ Dispose of waste chemicals and used motor oil properly.
- ◆ Report illegal dumping, chemical spills, or other polluting activities to the NH Department of Environmental Services (**603-271-3503**), Aquarion Water Company (**800-832-2373**), or your local police.

Water conservation in your home

Our water supply is sufficient to meet your needs, but we still encourage you to conserve this precious natural resource for the good of our environment. There

are plenty of simple steps you can take to reduce your water consumption: fix faucet and toilet leaks;



turn off the water while shaving or brushing your teeth; run full loads in your dishwasher and clothes washer; water your lawn in early morning; and use a broom to clean debris from your driveway instead of a hose.



WATER WATCH

Fall 2013



aquarionwater.com

New Hampshire

Protecting Our Precious Water Resources

Simple Ways To Make A Difference

As outdoor activities continue from summer into fall, it's a good time to remember what we do outside has an impact on our streams, rivers, lakes, reservoirs and wells.

All too easily, the water we depend on can become contaminated by a variety of pollutants flowing either off the land or down into the ground. We are all aware of the hazards of pouring oil or chemicals onto the ground or down drains or toilets. Equally important is minimizing the use of chemicals, including herbicides and pesticides for lawns and gardens.

Even fertilizers can be hazardous. Rain or irrigation can take them into surface waters, where they can feed toxic algae blooms. Before using fertilizers, test

your soil to find out how much – if any – you need. And use slow-or controlled-release formulas. By carefully follow the instructions, you can avoid applying more than your lawn or plants can readily absorb.

Another tip: Tend to your septic tank. Inspect it annually and have it pumped every three to five years. Not only will you help prevent pollution and disease, you'll also save money in the long run by extending its life. For more information on how you can protect our precious

water resources, check out <http://tinyurl.com/couulo2>.

(Continued on back)



Add A Rain Barrel... Conserve Water And Save Money

Aquarion's recent rain barrel offer was a big success, with customers taking advantage of a special, discounted price prearranged with a New England based rain barrel manufacturer. With a rain barrel, customers can ensure their gardens have plenty of free water this summer.

For only \$75, customers were able to purchase a rugged, 60-gallon barrel that normally lists for \$125. The benefits of rain barrels are many. It takes less than a quarter-inch of rain falling on a 500-square-foot roof to fill a 60-gallon barrel. Over the course of a growing season, you could get thousands of gallons of free water for filling watering cans, connecting a garden hose, feeding a drip

irrigation system and other outdoor chores, while conserving that much drinking water in the process. Rain barrels are also good for the environment in other ways. They prevent storm water run off on your property, carrying pollutants like lawn fertilizers, herbicides and pesticides into streams and other bodies of water that harm water quality and wildlife habitat.

Aquarion will offer these discounted rain barrels again next year. If you'd rather not wait, rain barrels are available from a number of online and traditional retailers. You can also find instructions for making your own by doing a simple internet search.



Conservation Corner Is Your **Sprinkler System** Soaking You?

Rain barrels aren't the only way to help conserve water in the dry summer months.

Your sprinkler system could be wasting thousands of gallons of water. You could be wasting even more due to evaporation, wind or runoff.

The EPA Water Sense program recommends four ways to keep your system from wasting water and your money:

Inspect: Check for clogged, broken or missing sprinkler heads.

Connect: Look for leaks at points where your sprinkler heads connect to pipes or hoses.

Direct: Check your sprinkler's aim so it is not watering the driveway, sidewalks or house.

Select: Update your system's schedule with the seasons. Use a controller labeled "WaterSense" to simplify scheduling.



For more tips, visit the EPA WaterSense website at www.epa.gov/watersense/outdoor.

(Continued from front)

Protecting Water Resources

To help ensure drinking water safety, Aquarion will conduct a series of water protection surveys of sites using substances that could potentially contaminate water supplies. Under New Hampshire law, the surveys are required every three years. We completed our last set of surveys in 2010.

The work began in the spring and continues through the summer by Geosphere Environmental Management. The firm's personnel are required to carry photo identification, and we recommend asking for identification should a Geosphere representative request to come onto your property.

For Customer Service: 1-800-403-4333

For after-hours emergencies: 603-926-3319, Ext. 9

Main Replacement Projects Deliver **Improved Reliability** For Hampton Residents

Work to replace and upgrade more than 1,700 feet of water mains on Church Street, Perkins Avenue, Auburn Avenue and Auburn Avenue Extension in Hampton is in progress and is scheduled for completion before the end of summer.

Timed to coordinate with the Town's replacement of sewer lines and repaving, the project replaces more than a half-century old, deteriorating water main, while substantially reducing the risks of main breaks and unscheduled interruptions.

On Church Street, pipe-bursting technology is being utilized to install larger mains that handle greater flow rates. This technology eliminates the need to excavate streets along the route. Along Perkins Avenue, Aquarion is burying the mains deeper to reduce the risk of freezing. With each project, Aquarion works with town officials to coordinate our effort with theirs, while minimizing traffic disruptions.

Customers in the project areas may experience temporary service disruptions or discolored water. Should that occur, we recommend storing water in your refrigerators for drinking and cooking during the project period. If your water is discolored, do not wash clothing until the water clears. You can find project updates at www.aquarion.com/nh. If you have questions about the project, please call Carl McMorran at (603) 926-3319, ext. 116. For service or water issues, please notify Aquarion Customer Service at (603) 926-3319.





AQUARION
Water Company

Stewards Of The Environment™

WATER WATCH

Winter 2013 ❄️❄️❄️❄️

aquarionwater.com

New Hampshire

In An Emergency: Stay Informed With **CodeRED**

Aquarion wants to keep more than water flowing to you – we want the latest information to flow as well.

That is why we incorporate the “CodeRED” emergency notification system in our customer service operation. Once you register, we’ll be able to get the word to you about emergency service disruptions, maintenance projects and other important news, so you can plan accordingly.

“CodeRED functions like a 911 system, only in reverse,” says Lucy Teixeira, Vice President, Customer Services & Human Resources. “Customers who have registered their phone numbers with the CodeRED system will automatically receive alerts and updates about service to their homes and businesses.”

Besides your home number, you can also provide the system with your work or mobile phone numbers.

On Caller ID systems, CodeRED emergency calls will appear as either “Emergency Communications” or “866-419-5000.” Important general information will appear as “ECN Community” or “855-969-4636.” You can call these numbers back to listen to the message again.

If you’ve received a CodeRED message in the past, at least some of your contact information is in the system. Even so, the best way to

make sure you get the notifications using all the connections you prefer is to go to www.aquarionwater.com, click on “Sign Up for Emergency Notifications” and complete the simple form you’ll find there.

(Continued on back)



Regional Roundup Of Community Activities

Visit Our New Hampton Home

Customers in Hampton now have a more convenient and accessible place to pay their water bills, start or stop service, or simply to get their questions answered. We’ve consolidated our customer service and water distribution operations into a single, more central and more efficient location at 7 Scott Road, behind Hannaford’s. The new office has a convenient, more easily accessible ground-floor entrance.

Though our address has changed, our phone numbers, other contact information and business hours remain unchanged. Stop by to check out our new location anytime between 8:30 a.m. and 4 p.m. Monday through Friday. We’d love to see you!



Aquarion's local customer service team is here to support you.

Aquarion Assists With Hurricane Isaac Relief

While Aquarion’s effort to help support the communities we serve is a major focus, the company will also sometimes extend a “helping hand” in other parts of the country when a major disaster occurs. Aquarion recently made a donation to the American Red Cross to assist with relief efforts in Mississippi as the result of Hurricane Isaac. Charles Firlotte, Aquarion President and CEO, said, “Supporting people in other parts of the country, in a time of great need, is the right thing to do. We are proud to be able to step forward and assist in this humanitarian effort.”

Aquarion Collects For Local Food Pantries

Too many people in our area must struggle to get the food they need.

(Continued on back)

Conservation Corner

Save Water With A WaterSense® Bathroom Mini-Makeover

With cooler temperatures already upon us, now is the perfect time to tackle a bathroom mini-makeover. Your bathroom is the greatest water user in your home, requiring more than half of the water used indoors by the average family. With WaterSense® labeled products, you can significantly reduce the amount of water used, compared to standard fixtures.

What should you replace?

- Replace standard toilets, faucets and showerheads with high-efficiency, WaterSense® labeled products
- These products will deliver the expected flush, rinse and spray, and still conserve water



What can you save?

By upgrading to high-efficiency bathroom fixtures, you can save on average:

- 7,000 gallons of water annually
- 200 kilowatt-hours of electricity annually (if you use electricity to heat your water)
- \$80 in utility bills annually, according to the EPA's WaterSense® website



By being water-wise in the bathroom, you can help save this precious natural resource and put a little green back in your wallet.

(Continued from front)

Regional Roundup

That only saps their strength and makes it even tougher to take care of kids, jobs, personal health and everything else that's important in life.

That's why from now through mid-December, Aquarion is collecting food items from its employees and customers. We will then deliver the donations to local food pantries.

You too can help by dropping off non-perishable items anytime between 8:30 a.m. and 4:30 p.m. at our office at 7 Scott Road, Hampton. And, thanks in advance.

Aquarion Saves Energy With New Drives

Pumping millions of gallons of water a day through our system uses a huge amount of electricity, so we installed two new variable-frequency drives to power our North Hampton water pumps. The new drives allow us to adjust energy usage as demand changes during the day and throughout the year, in contrast to the old, single-speed drives. Not only are we helping save energy and control costs, we've also reduced wear-and-tear on the pumps.

(Continued from front)

Stay Informed With CodeRED

There's no charge for this Aquarion service. All information provided is kept in confidence. Be sure to include your mobile number and email address when registering, too. We'll soon be adding text and email notifications to the system, as well.

So register for CodeRED today – and stay better informed about your water service!

Welcome (Back), John!



In mid-July, 12-year Aquarion veteran John Walsh was named Vice President, Operations – the company's top post in New Hampshire and Massachusetts.

John previously spent 12 years serving Aquarion's Connecticut customers as Director of Supply Operations and Manager of Engineering. In his new position, he sees many opportunities even in the challenges.

"I look forward to serving our communities in Massachusetts and New Hampshire, and continuing to capitalize on our expertise in areas like infrastructure programs, water quality and treatment, and community service for the benefit of our customers," he says.

John's early training came at the University of Massachusetts – Amherst, from which he earned a B.S. in civil engineering and an M.S. in environmental engineering before gaining an MBA in finance and management from New York University. He's licensed as a professional engineer in three states. He also served on the Board of Advisors for the U.S. Military Academy's Environmental Engineering Program. John is a member of the American Society of Civil Engineers, the American Water Works Association and the Massachusetts Water Works Association.

"We're delighted to promote John to head our New Hampshire and Massachusetts operations," says Charles Firlotte, Aquarion President and CEO. "His outstanding skills and experience make him a great asset to our team and our customers, as well."

For Customer Service: 1-800-403-4333

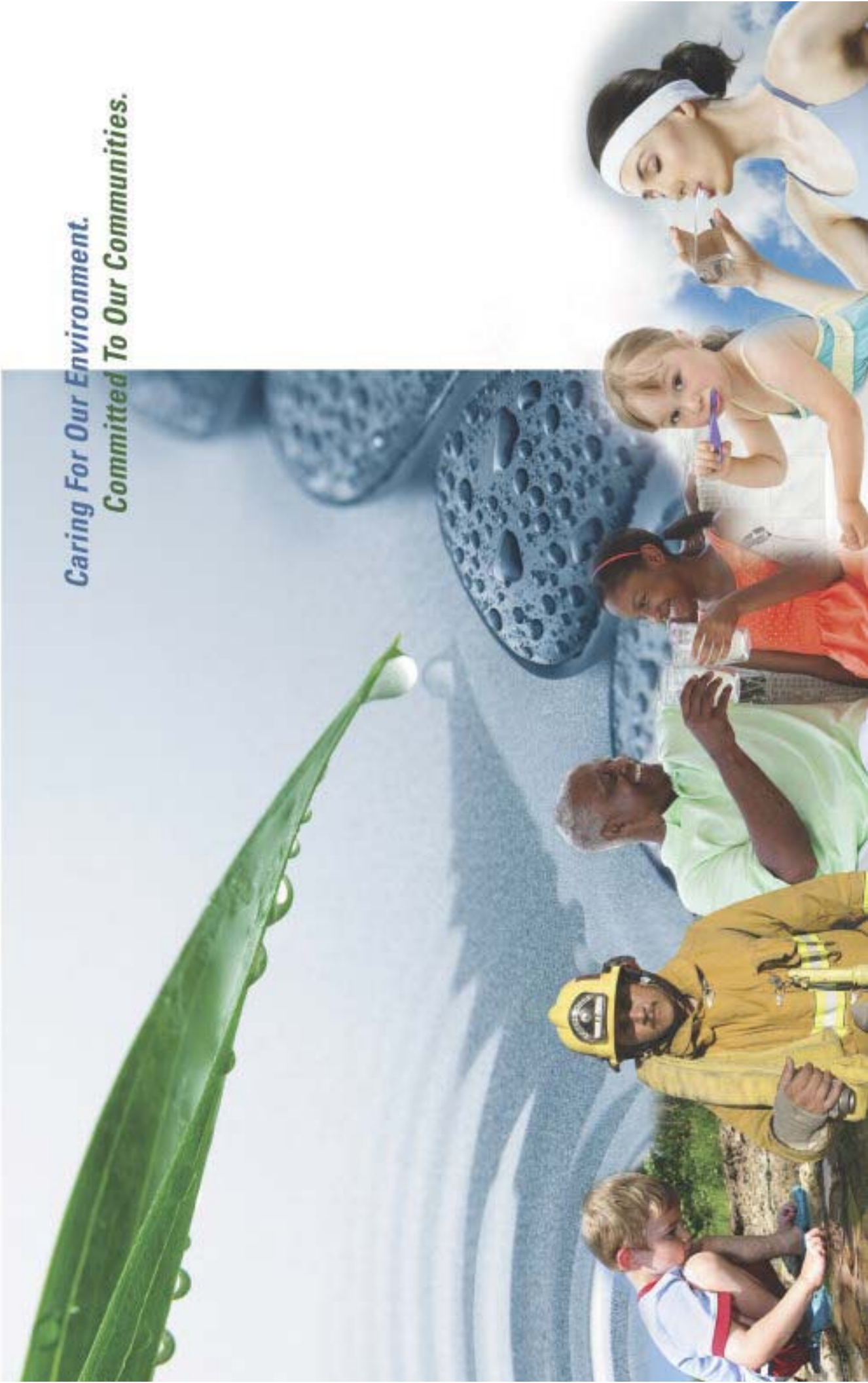
For after-hours emergencies: 603-926-3319, Ext. 9



Stewards of the Environment™

2013 Water Quality Report

*For Customers in the Hampton,
North Hampton and Rye System*



***Caring For Our Environment.
Committed To Our Communities.***

ources of Contaminants for table on left

- Arsenic:** Erosion of natural deposits.
- Barium:** Erosion of natural deposits.
- Copper:** Corrosion of household plumbing systems.
- Fluoride:** Erosion of natural deposits.
- Lead:** Corrosion of household plumbing systems.
- Nitrate:** Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
- Total Coliform:** Naturally present in the environment.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
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- Sulfate:** Naturally present in the environment.

Protecting your water at home:

Cross-Connection Control Program

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- ◆ Use chemicals and pesticides wisely.
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- ◆ Report illegal dumping, chemical spills, or other polluting activities to the New Hampshire Department of Environmental Services **(603-271-3503)**, Aquarion Water **(800-732-9678)**, or your local police.

Water conservation in your home

Our water supply is sufficient to meet your needs, but we still encourage you to conserve this precious natural resource for the good of our environment. There are plenty of simple steps you can take to reduce your water consumption: fix faucet and toilet leaks; turn off the water while shaving or brushing your teeth; run full loads in your dishwasher and clothes washer; water your lawn in early morning; and use a broom to clean debris from your driveway instead of a hose.



WATER WATCH

Summer 2014 ❄️🌸🌻🌺

aquarionwater.com

New Hampshire

Aquarion Seeking **Outstanding** Environmental Volunteers *Nominations Open for First Annual Aquarion Environmental Champion Awards*

They don't often attract much publicity. But volunteer projects on behalf of the environment can have a big effect on both the current and future quality of life in our communities. That's why we are launching the first annual Aquarion Environmental Champion Awards program for the unsung heroes of clean water, clean air, healthy habitat and sustainable communities.

Now it's time to make your nominations for the people, companies and non-profits who have made outstanding, voluntary achievements that protect or improve New Hampshire's environment.

Nominations can be filed in four categories: Student, Adult, Business, and

Non-Profit Organization. Winners in the Adult, Business, and Non-Profit categories can name an environmental non-profit of their choice to receive a \$1,000 grant from Aquarion. The Student winner will receive a \$1,000 award. "Volunteers make immeasurable contributions to New Hampshire's environmental health," says Charles V. Firlotte, Aquarion's President and CEO. "Their initiative, energy and resourcefulness benefit people throughout New Hampshire, and those efforts deserve statewide recognition."

Winners will be announced on June 7 at a special event held at Blue Ocean Society's Discovery Center in Hampton. The deadline for nominations is May 7. Self-nominations are welcome.

You can find the nomination form at aquarionwater.com and [facebook.com/aquarionwater](https://www.facebook.com/aquarionwater).



Take Mystic Aquarium Whales Home With You!

Aquarion Sponsors Beluga Whale Webcams

We couldn't quite squeeze them through your tap but found an even better way to put three whales into your home – via webcams live from the Mystic Aquarium.

Aquarion is now the sponsor of three cameras trained on the Aquarium's exciting beluga whale exhibit, the only one of its kind in New England. Click on the cameras at any time during daylight hours and watch the Aquarium's three belugas – Kela, Juno and Naluark – in the 750,000-gallon, arctic marine environment created for them in Mystic.

You can watch them playing, dining on the 50-80 pounds of fish they consume each day, and being trained by Aquarium staff.



To watch the whales, just follow the link at our website, aquarionwater.com. You can also learn about the individual whales you'll see, fascinating facts about belugas and how you can find even more information.

Conservation Corner

Detect Minor Water Leaks And Save Big Money

Minor water leaks account for more than one trillion gallons of water wasted each year in U.S. homes, according to the U.S. Environmental Protection Agency's WaterSense® program.

The Facts:

- Average household leaks can account for more than 10,000 gallons of water wasted every year, or the amount of water needed to wash 270 loads of laundry.
- Ten percent of homes have leaks that waste 90 gallons or more per day.
- Common types of leaks found in the home include worn toilet flappers, dripping faucets, and leaking showerheads.
- Fixing easily corrected, household water leaks can save homeowners about 10 percent on their water bills.



Faucets and Showerheads:

- Leaky faucets can be fixed by checking faucet washers and gaskets for wear and replacing them if necessary. If you are replacing a faucet, look for the EPA's WaterSense label.
- Most leaky showerheads can be fixed by ensuring a tight connection using pipe tape and a wrench. If you are replacing a shower head, look for one that has earned the EPA's WaterSense label.

Toilets:

- Toilet leaks are often caused by an old or faulty toilet flapper.
- Replacing a flapper is a relatively easy, inexpensive do-it-yourself project that pays for itself in no time.



Detecting Water Leaks:

- Check your water meter in the evening, when no water is being used, and again in the morning. If the meter does not read exactly the same, you probably have a leak.
- Check your toilet for leaks by placing a dye tablet or food coloring in the toilet tank. If the color shows up in the bowl within 15 minutes without flushing, you have a leak.

For More Information:

- Visit aquarionwater.com and check out our new leak detection videos.
- Learn more by visiting the WaterSense website at www.epa.gov/watersense

Defeat Hot Weather This Summer

An Offer Your Gardens Will Drink Up

Thirsty gardens aren't happy gardens. But now you can help make sure your flowers and vegetables have a ready source of water, even in times of hot weather.

Aquarion is again offering rain barrels at almost 40% off the typical price of \$125. For just \$75, you can get one to capture and store rainwater running off your roof. Just put it under a downspout and it will quickly fill with free water. You can then use the barrel for filling watering cans or to connect to your garden hose or drip irrigation system.

Constructed from 60-gallon, recycled food-grade barrels, each barrel comes complete with a brass spigot and screen for keeping debris and insects out of the barrel.

The time to order your rain barrel at this special price is today. Visit aquarionwater.com to find out how. For any questions, just call Skyjuice New England at 1-207-363-1505. Ordering deadline is May 21. If you missed our ordering deadline, please contact us and we will try to accommodate your order if possible. The barrels fit in the back seat of most cars and will be available for pick-up at Aquarion Water Company in Hampton from May 27-30 (9 am to 3 pm).



Aquarion's Newly Enhanced Website Offers More Information At Your Fingertips

If you've visited aquarionwater.com lately, you would have noticed our newly enhanced website.

Aquarionwater.com offers easier navigation and a new mobile-compatible option. Want to find out information about an outage or alert? Simply enter your town/city in the right-hand Alerts & Outages search box and a complete listing of current alerts & outages is provided.

Aquarion is continually looking to improve your experience at aquarionwater.com.



For Customer Service: 1-800-403-4333

For after-hours emergencies: 603-926-3319, Ext. 9



Find us on Facebook at facebook.com/aquarionwater



Stewards of the Environment™



2014 Water Quality Report

*For Customers in the Hampton,
North Hampton and Rye System*

Caring For Our Environment. Committed To Our Communities.



Types of Contaminants for table on left

- Arsenic:** Erosion of natural deposits.
- Barium:** Erosion of natural deposits.
- Copper:** Corrosion of household plumbing systems.
- Fluoride:** Erosion of natural deposits.
- Lead:** Corrosion of household plumbing systems.
- Nitrate:** Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
- Total Coliform:** Naturally present in the environment.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
- Total Haloacetic Acids:** By-product of drinking water chlorination.
- Combined Radium:** Erosion of natural deposits.
- Chloride:** Naturally present in the environment.
- Sodium:** Water treatment processes; use of road salt; naturally present in the environment.
- Sulfate:** Naturally present in the environment.

Source Water Assessment Report

The state Department of Environmental Service's Source Water Assessment Report indicates an average of 6 contamination susceptibility factors were rated low, an average of 4 were rated medium, and 2 were rated high for 18 of our water sources. The complete report is available for inspection at our office during normal business hours at Aquarion Water Company, 7 Scott Road, Hampton, NH.

Protecting water at the source

Even small quantities of pollutants may be enough to contaminate a drinking water supply. Examples of pollutants that may wash into surface water or seep into ground water include:

- ◆ Microbial contaminants from septic systems, agriculture and livestock operations, and wildlife;
- ◆ Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- ◆ Pesticides and herbicides from sources such as agriculture;
- ◆ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes; and
- ◆ Radioactive contaminants that can be naturally occurring.

You can help prevent water contamination

- ◆ Ensure that your septic system is working correctly.
- ◆ Use chemicals and pesticides wisely.
- ◆ Dispose of waste chemicals and used motor oil properly.
- ◆ Report illegal dumping, chemical spills, or other polluting activities to the New Hampshire Department of Environmental Services at **(603-271-3503)**, Aquarion Water **(800-732-9678)**, or your local police.

Water conservation in your home

Our water supply is sufficient to meet your needs, but we still encourage you to conserve this precious natural resource for the good of our environment. There are plenty of simple steps you can take to reduce your water consumption: fix faucet and toilet leaks; turn off the water while shaving or brushing your teeth; run full loads in your dishwasher and clothes washer; water your lawn in early morning; and use a broom to clean debris from your driveway instead of a hose.



Monitoring Unregulated Contaminants

Unregulated contaminants are elements that currently have no health standard for drinking water. In 2013, the EPA began a three-year monitoring program to test for up to 28 unregulated contaminants in various public water systems throughout the U.S. This table shows only the compounds detected in your system. To learn about the full list of unregulated contaminants included in the monitoring program, please call our Water Quality Department at **800-832-2373**.

Substance (Units of Measure)	Test Date	Average	Detected Level	Range	Source of Contaminant
Unregulated Contaminants					
Chlorate (ppb)	9/14	71		53 – 170	Disinfection by-product
Chromium (ppb)	9/14	0.2		*ND < 0.20 – 0.46	Naturally occurring element
Hexavalent Chromium (ppb)	9/14	0.11		0.04 – 0.26	Naturally occurring element
Strontium (ppb)	9/14	174		100 – 230	Naturally occurring element

*Not Detected





AQUARION
Water Company

Stewards of the Environment™

2015 Water Quality Report



It's Time To Conserve. Water: It's Too Precious To Waste.



Your Health Is Our Priority

Copper and Lead

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level* over a relatively short period of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. Major sources of copper in drinking water include corrosion of household plumbing systems and erosion of natural deposits.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. Aquarion Water Company is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Fortunately, the Lead in Drinking Water Act, which took effect in January 2014, requires a significant reduction of the lead content in new plumbing components that contact drinking water. As a result, the lead content in new pipes, fittings, fixtures and solder must be reduced from 8% to 0.25%.

Customers can minimize the potential for lead exposure when water has been sitting for several hours by running the tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at epa.gov/safewater/lead.

*The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Immuno-compromised persons

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

More Information You Should Know

Protecting your water at home

Cross-Connection Control Program

Our Cross-Connection Control Program helps ensure that your drinking water is protected from possible contamination. A cross-connection is any actual or potential connection between a distribution pipe of potable water from a public water system, and any waste pipe, sewer, drain, or other unapproved source that has the potential, through back-pressure or back-siphonage, to create a health hazard to the public water supply and the water system within the premises.

Aquarion's certified cross-connection personnel routinely conducts surveys and tests backflow prevention devices at our customers' facilities for regulatory compliance. If they find unprotected cross-connections, they will require installation of backflow prevention devices to protect the water distribution system.

A lawn irrigation system is a prime example of a cross-connection needing a backflow-prevention device.

To prevent this backflow contamination, the state Department of Environmental Services (DES) requires that we inspect your irrigation system to ensure that an appropriate backflow prevention device is in place. The state DES also requires that these devices be tested annually to ensure proper performance.

Protecting water at the source

Even small quantities of pollutants may be enough to contaminate a drinking water supply. Examples of pollutants that may wash into surface water or seep into ground water include:

- ◆ Microbial contaminants from septic systems, agriculture and livestock operations, and wildlife;

- ◆ Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- ◆ Pesticides and herbicides from sources such as agriculture, urban storm water runoff, and residential uses;
- ◆ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes; and
- ◆ Radioactive contaminants that can be naturally occurring.

You can help prevent water contamination

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- ◆ Dispose of waste chemicals and used motor oil properly.
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Your 2015 Water Quality Report

Customers who have questions about water quality should call us at **800-832-2373**; send an email to **waterquality@aquarionwater.com**; or visit **aquarionwater.com**.

For other questions, or to report discolored water or other service problems, call the Water Quality Management Department at **800-732-9678**.

New Hampshire Department of Environmental Services:
603-271-3503 or **des.state.nh.us**

U.S. Environmental Protection Agency's Safe Drinking Water
Hotline: **800-426-4791** or **epa.gov/safewater**

PWS ID#: 1051010
Hampton, North Hampton
and Rye System



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Water: More Ways To Save It

Though this report focuses on the quality of the water Aquarion provides you, quantity is vitally important, too.

You and more than 700,000 other people depend on us to provide enough water to supply your daily needs. As rainfall patterns appear to be changing, it's time for all of us to be even more careful about the way we use water. Here are some tips on reducing waste that you may not have considered:

Use water-efficient appliances. Older washing machines and dishwashers consume large quantities of water. New ones work more efficiently, using just a fraction of what the earlier models need.



Save with every flush. New model toilets can save three or more gallons every time you flush, and they do the job just as well as the old-fashioned ones.



Turn off the taps. Whether you're brushing your teeth or getting a glass of water, try to keep

good, clean water from going down the drain. Turn off the faucet while tending to your teeth. And keep a jug of water in the refrigerator so a cold glass is instantly available, rather than running the tap until the water is cold.



Shorten shower times. You'll not only use less water; you'll reduce your water-heating costs as well.



Water grass, not pavement. Carefully aim sprinklers and irrigation heads so they're not wetting down driveways, sidewalks and patios. Water either in early morning or early evening – and, of course, only when your lawn is actually starting to wilt.



For most people, conserving water is already second nature. Adding a few more techniques can reduce waste even more – and lower your water bill, too. For many more ways to ensure a healthy supply for decades to come, check out **aquarionwater.com/conserves**.

Visit Mystic Aquarium's Beluga Whales Live!

Aquarion is the sponsor of three cameras trained on the exciting Beluga whale exhibit at Mystic Aquarium in Connecticut, the only one of its kind in New England. Go to **aquarionwater.com** and click on the cameras at any time during daylight hours to watch the Aquarium's three belugas – Kela, Naku and Naluark – in the 750,000-gallon, arctic marine environment created just for them.



aquarionwater.com

SCHEDULE OF WATER RATES FOR METERED SERVICE

Available:

To all customers except those using the Company's service for fire service and those who do not take metered water service for four (4) consecutive quarters.

Rate:

All general water service customers shall pay a service charge based on the size of the meter installed. Rate for consumption in addition to the service charge provided for herein: \$4.536 per 100 cubic feet.

All Customers:

Service Charge:

<u>Size of Meter</u>	<u>Per Month</u>	<u>Per Quarter</u>
5/8 inch	\$ 15.60	\$ 46.80
3/4 inch	\$ 23.40	\$ 70.20
1 inch	\$ 39.01	\$ 117.03
1 1/2 inch	\$ 78.05	\$ 234.15
2 inch	\$ 124.87	\$ 374.61
3 inch	\$ 234.00	\$ 702.00
4 inch	\$ 390.00	\$ 1,170.00
6 inch	\$ 780.00	\$ 2,340.00
8 inch	\$ 1,248.00	\$ 3,744.00
10 inch	\$ 1,794.00	\$ 5,382.00

Terms of Payment:

Bills for the service charge shall be rendered for three months in advance on the first day of each month following the quarterly meter readings. The billing for water consumed in the previous quarter shall be included with billing of the quarterly service charge.

Penalty:

A penalty of five percent (5%) will be added to bills which are unpaid after the due date printed on the bill as evidenced by the date of payment to the utility's authorized agent.

Issued: June 28, 2013

Issued by: 

Donald J. Morrissey

Effective: July 1, 2013

As authorized in order 25,539 in Case DW 12-085

Title: Chief Financial Officer

SCHEDULE OF WATER RATES FOR METERED SERVICE

To all customers taking water service for a period less than four (4) consecutive quarters, except those using the Company's service for fire service.

Rate:

All general water service customers shall pay a service charge based on the size of the meter installed. Rate for consumption in addition to the service charge provided for herein: \$5.619 per 100 cubic feet.

Service Charge:

<u>Size of Meter</u>	<u>Per Season</u>
5/8 inch	\$ 234.00
3/4 inch	\$ 351.00
1 inch	\$ 585.15
1 1/2 inch	\$ 1,170.75
2 inch	\$ 1,873.05
3 inch	\$ 3,510.00
4 inch	\$ 5,850.00
6 inch	\$ 11,700.00
8 inch	\$ 18,720.00
10 inch	\$ 26,910.00

Term of Payment:

Bills for the service charge shall be rendered as of May 1st for all customers receiving seasonal service. Bills for water consumption will be rendered on a monthly basis or when the meter is removed.

Penalty:

A penalty of five percent (5%) will be added to bills which are unpaid after the due date printed on the bill as evidenced by the date of payment to the utility's authorized agent.

Issued: June 28, 2013

Issued by: 

Donald J. Morrissey

Effective: July 1, 2013

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Title: Chief Financial Officer

Table 3. Leak Log 2013 - 2016						
Leak #	Nearest Address to Leak	Leak Type	Date Leak Discovered	Date Leak Repaired	Leak Rate GPM	Discovered during a leak detection survey? Y/N
1	71 Hayden Cir, Hampton	Service	2-Jan-13	23-Jan-13	unknown	N
2	60 Ocean Blvd, North Hampton	Service	11-Jan-13	24-Jan-13	unknown	N
3	9 M St, Hampton	Service	18-Jan-13	1-Feb-13	unknown	N
4	6 Johnson Ave, Hampton	Service	22-Jan-13	24-Apr-13	unknown	N
5	4 Tenth Street, Hampton	Service	24-Jan-13	25-Jan-13	unknown	N
6	156 Atlantic Avenue, North Hampton	Service	1-Feb-13	12-Feb-13	unknown	N
7	21 Dover Ave, Hampton	Service	4-Feb-13	5-Feb-13	unknown	N
8	35 Cliff Ave, Hampton	Service	6-Feb-13	6-Feb-13	unknown	N
9	Wild Rose Ln Briar Rd, Hampton	Main	22-Mar-13	9-Jul-13	22	Y
10	57 Cable Road, Rye	Service	25-Mar-13	26-Sep-13	7	Y
11	47 Hobson Ave, Hampton	Service	28-Mar-13	26-Jun-13	8	Y
12	6 Kentville Terr, Hampton	Service	28-Mar-13	3-Jun-13	11	Y
13	14 Battcock Ave, Hampton	Service	29-Mar-13	4-May-13	8	Y
14	131 Lafayette Rd, North Hampton	Service	29-Mar-13	12-Apr-13	9	Y
15	960 Ocean Blvd, Hampton	Hydrant	29-Mar-13	19-Jun-13	2	Y
16	14 Hobbs Rd, North Hampton	Service	1-Apr-13	4-Apr-13	unknown	N
17	16 Bragg Ave, Hampton	Service	16-Apr-13	17-Apr-13	unknown	N
18	28 Diane Ln, Hampton	Service	17-Apr-13	18-Apr-13	unknown	N
19	203 Lafayette Rd, North Hampton	Service	17-Apr-13	20-Apr-15	unknown	N
20	11 Riverview Terr, Hampton	Service	23-Apr-13	29-May-13	unknown	N
21	24 Auburn Ave, Hampton	Main	3-May-13	28-May-13	110	N
22	73 Dearborn Ave, Hampton	Service	13-May-13	10-Jun-13	unknown	N
23	15 Diane Ln, Hampton	Service	13-May-13	9-Jul-13	unknown	N
24	Noreast Ln Ocean Blvd, Hampton	Main	14-Jun-13	17-Jun-13	150	N
25	6 Dancers Image Ln, North Hampton	Service	18-Jun-13	21-Jun-13	unknown	N
26	17 Bragg Ave, Hampton	Service	25-Jun-13	9-Jul-13	unknown	N
27	2 Dancers Image Ln, North Hampton	Service	8-Jul-13	24-Jul-13	unknown	N
28	6 Twelfth Street, Hampton	Service	8-Jul-13	27-Aug-13	unknown	N
29	12 Cliff Ave, Hampton	Service	11-Jul-13	13-Jul-13	unknown	N
30	24 Stickney Terr, Hampton	Service	16-Jul-13	13-Aug-13	unknown	N
31	2187 Ocean Blvd, Rye	Service	22-Jul-13	19-Aug-13	unknown	N
32	24 Perkins Ave, Hampton	Service	31-Jul-13	27-Aug-13	unknown	N
33	2 M St, Hampton	Service	5-Aug-13	2-Sep-13	unknown	N
34	63 Campton St, Hampton	Service	9-Aug-13	27-Aug-13	unknown	N
35	20 Diane Ln, Hampton	Main	12-Aug-13	27-Aug-13	110	N
36	Brown Avenue Diane Ln, Hampton	Service	19-Aug-13	27-Aug-13	unknown	N
37	43 Milbern Ave, Hampton	Main	25-Aug-13	26-Sep-13	150	N
38	219 Lafayette Rd, North Hampton	Service	31-Aug-13	3-Oct-13	3	Y
39	1 Colonial Cir, Hampton	Service	3-Sep-13	1-Oct-13	unknown	N
40	17 Sandpiper Path, North Hampton	Service	3-Sep-13	1-Oct-13	unknown	N
41	Ocean Blvd Locke Rd, Rye	Service	4-Sep-13	9-Nov-13	unknown	N
42	92 Old Beach Rd, Rye	Service	4-Sep-13	21-Nov-13	2	Y
43	14 Ocean Blvd, North Hampton	Service	8-Sep-13	6-Nov-13	3	Y
44	943 Ocean Blvd, Hampton	Service	8-Sep-13	24-Oct-13	3	Y
45	14 Chapel Road, North Hampton	Service	18-Sep-13	16-Oct-13	unknown	N
46	12 Riverview Terr, Hampton	Service	19-Sep-13	26-Sep-13	unknown	N
47	Rt 101 ramp Liberty Ln, Hampton	Main	20-Sep-13	20-Sep-13	200	Y
48	27 Walnut Ave, North Hampton	Service	30-Sep-13	1-Oct-13	unknown	N
49	16 Holly Lane, Hampton	Service	18-Oct-13	2-Dec-13	2	Y
50	20 Laurel Ln, Hampton	Main	18-Oct-13	2-Dec-13	40	Y
51	12 Mill Pond Ln, Hampton	Service	18-Oct-13	31-Dec-13	2	Y
52	9 Randall Street, Hampton	Service	24-Oct-13	2-Dec-13	3	Y
53	Locke Road Ocean Blvd, Rye	Main	4-Nov-13	2-Dec-13	150	N

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Leak #	Nearest Address to Leak	Leak Type	Date Leak Discovered	Date Leak Repaired	Leak Rate GPM	Discovered during a leak detection survey? Y/N
54	2360 Ocean Blvd, Rye	Main	8-Nov-13	8-Nov-13	150	N
55	96 Lafayette Rd, North Hampton	Service	31-Dec-13	3-Jan-14	unknown	N
56	23 K St, Hampton	Service	13-Jan-14	27-Jan-14	unknown	N
57	281 South Rd, Rye	Service	13-Jan-14	27-Jan-14	unknown	N
58	4 Auburn Ave Ext, Hampton	Service	16-Jan-14	6-Feb-14	unknown	N
59	Merrill Industrial Dr, Hampton	Service	16-Jan-14	1-Aug-14	unknown	N
60	74 Brown Ave, Hampton	Service	21-Jan-14	4-Feb-14	unknown	N
61	@ Ashworth Ave Hobson Ave, Hampton	Main	27-Jan-14	27-Jan-14	unknown	N
62	@ Ocean Blvd Cusack Rd, Hampton	Main	4-Feb-14	4-Feb-14	unknown	N
63	70 Sea Rd, Rye	Main	25-Feb-14	25-Feb-14	unknown	N
64	20 Manchester St, Hampton	Service	28-Feb-14	28-Feb-14	unknown	N
65	83 North Shore Rd, Hampton	Main	19-Mar-14	19-Mar-14	unknown	N
66	52 Glade Path, Hampton	Main	25-Mar-14	25-Mar-14	unknown	N
67	20 L St, Hampton	Service	23-Apr-14	2-May-14	unknown	N
68	6 Twelfth Street, Hampton	Main	23-Apr-14	23-Apr-14	unknown	N
69	186 Island Path, Hampton	Service	28-Apr-14	5-May-14	unknown	N
70	192 North Shore Rd, Hampton	Service	5-May-14	13-May-14	unknown	N
72	14R Perkins Ave, Hampton	Service	5-May-14	9-May-14	unknown	N
73	Vinmar Ct, Rye	Service	16-May-14	17-Oct-14	unknown	N
74	10 Vinmar Ct, Rye	Main	27-May-14	27-May-14	20	N
75	Chase St, Hampton	Main	14-Jun-14	14-Jun-14	50	N
76	16 Fielding Way, Rye	Service	15-Jun-14	24-Aug-14	unknown	Y
77	340 Lafayette Rd, Hampton	Service	25-Jun-14	5-Aug-14	20	N
78	First St, Hampton	Main	9-Jul-14	9-Jul-14	20	N
79	352 Winnacunnet Rd, Hampton	Main	13-Jul-14	3-Sep-14	100	Y
80	East Atlantic Kenphil Ave, Rye	Main	31-Jul-14	27-Aug-14	20	N
81	King Hwy Twelfth Street, Hampton	Main	2-Aug-14	23-Oct-14	unknown	Y
82	23 Mooring Ave, Hampton	Service	11-Aug-14	27-Aug-14	unknown	N
83	27 Walnut Ave, North Hampton	Service	11-Aug-14	13-Aug-14	unknown	N
84	51 Campton St, Hampton	Main	12-Aug-14	3-Sep-14	50	Y
86	580 Ocean Blvd, Hampton	Main	12-Aug-14	12-Aug-14	10	N
85	Willow Ave Ocean Blvd, North Hampton	Valve	12-Aug-14	11-Oct-14	unknown	Y
87	3 St Cyr Dr, Hampton	Service	18-Sep-14	24-Sep-14	unknown	N
88	65 Cable Rd, Rye	Service	27-Oct-14	27-Nov-14	20	N
89	H102 Elaine St, Hampton	Hydrant	27-Oct-14	10-Dec-14	unknown	N
90	H638 North Rd, North Hampton	Hydrant	28-Oct-14	10-Dec-14	unknown	N
91	H559 Viano Island, North Hampton	Hydrant	28-Oct-14	10-Nov-14	unknown	N
92	Blowoff Walnut Ave, North Hampton	Service	28-Oct-14	12-Nov-14	20	N
93	7B Dustin Ave, Hampton	Service	9-Jan-15	9-Jan-15	unknown	N
94	24 Presidential Cir, Hampton	Service	12-Jan-15	12-Jan-15	unknown	N
95	9 Kentville Terr, Hampton	Service	17-Jan-15	20-Jan-15	unknown	N
96	7 Evergreen Rd, Hampton	Main	23-Jan-15	23-Jan-15	unknown	N
97	71 Mill Rd, North Hampton	Service	12-Feb-15	15-Apr-15	unknown	N
98	893 Lafayette Rd, Hampton	Service	27-Feb-15	27-Feb-15	unknown	N
99	48 Ashworth Ave, Hampton	Service	5-Mar-15	6-Mar-15	unknown	N
100	30 Winnacunnet Rd, Hampton	Service	11-Mar-15	11-Mar-15	unknown	N
101	23 Cusack Rd, Hampton	Service	13-Mar-15	13-Mar-15	unknown	N
102	30 Surf Ln, Rye	Service	16-Mar-15	17-Mar-15	unknown	N
103	74 Brown Ave, Hampton	Service	17-Mar-15	8-May-15	unknown	N
104	Jo-Anne Ln, Hampton	Main	17-Mar-15	26-May-15	unknown	N
105	280 Lafayette Rd, Hampton	Service	23-Mar-15	23-Mar-15	unknown	N
106	24 Stickney Terr, Hampton	Service	23-Mar-15	23-Mar-15	unknown	N
107	5 Fifth St, Hampton	Service	23-Apr-15	4-May-15	unknown	N
108	816 Lafayette Rd, Hampton	Service	24-Apr-15	24-Apr-15	unknown	N
109	5 Victor Rd, Hampton	Service	24-Apr-15	4-Jun-15	unknown	Y

Table 3. Leak Log 2013 - 2016

Leak #	Nearest Address to Leak	Leak Type	Date Leak Discovered	Date Leak Repaired	Leak Rate GPM	Discovered during a leak detection survey? Y/N
110	47 Ocean Blvd, North Hampton	Service	28-Apr-15	28-Apr-15	unknown	N
111	29 Josephine Dr, Hampton	Service	29-Apr-15	18-Jun-15	unknown	Y
112	19 Garland St, Hampton	Service	30-Apr-15	30-Apr-15	unknown	N
113	31 Kings Hwy, Hampton	Service	7-May-15	7-May-15	unknown	N
114	247 Landing Rd, Hampton	Service	12-May-15	12-May-15	unknown	N
115	16 Meadow Pond Rd, Hampton	Main	4-Jun-15	4-Aug-15	unknown	N
116	533 Ocean Blvd, Hampton	Service	11-Jun-15	11-Jun-15	unknown	N
117	820A Lafayette Rd, Hampton	Service	15-Jun-15	15-Jun-15	unknown	N
118	51 Brown Ave, Hampton	Service	16-Jun-15	18-Jun-15	unknown	N
119	734 Central Rd, Rye	Hydrant	23-Jun-15	4-Aug-15	unknown	Y
120	840 Central Rd, Rye	Service	23-Jun-15	4-Aug-15	unknown	Y
121	2 Bourne Ave, Hampton	Main	24-Jun-15	24-Jun-15	unknown	N
122	15 Sapphire Ave, Hampton	Service	6-Jul-15	7-Jul-15	unknown	N
123	5 Sun Surf Ave, Hampton	Main	8-Jul-15	7-Aug-15	unknown	N
124	7 Whitten Ave, Hampton	Service	10-Jul-15	14-Jul-15	unknown	N
125	98R Island Path, Hampton	Service	20-Jul-15	20-Jul-15	unknown	N
126	147 North Shore Rd, Hampton	Service	7-Aug-15	10-Aug-15	unknown	N
127	25 Walnut Ave, Hampton	Service	7-Aug-15	7-Aug-15	unknown	N
128	130 Post Rd, North Hampton	Service	10-Aug-15	10-Aug-15	unknown	N
129	45 South Rd, North Hampton	Service	10-Aug-15	10-Aug-15	unknown	N
130	400 High St, Hampton	Service	17-Aug-15	17-Aug-15	unknown	N
131	17 Viano Island, North Hampton	Service	17-Aug-15	28-Sep-15	unknown	N
132	20 Nudd Ave, Hampton	Service	18-Aug-15	18-Aug-15	unknown	N
133	2 Walnut Ave, North Hampton	Service	18-Aug-15	19-Aug-15	unknown	N
134	820 Lafayette Rd, Hampton	Service	19-Aug-15	19-Aug-15	unknown	N
135	833 Central Rd, Rye	Service	27-Aug-15	27-Aug-15	unknown	N
136	191 Exeter Rd, Hampton	Service	22-Sep-15	24-Sep-15	unknown	N
137	60 Mooring Ave, Hampton	Service	23-Sep-15	24-Sep-15	unknown	N
138	15 Fellows Ave, Hampton	Service	24-Sep-15	24-Sep-15	unknown	N
139	20 Forest Dr, Hampton	Service	5-Oct-15	5-Oct-15	unknown	N
140	516 High St, Hampton	Service	7-Oct-15	8-Oct-15	unknown	N
141	2 Scott Rd, Hampton	Service	8-Oct-15	8-Oct-15	unknown	N
142	18 Vinmar Ct, Rye	Service	15-Oct-15	15-Oct-15	unknown	N
143	1066 Ocean Blvd, Hampton	Service	19-Oct-15	19-Oct-15	unknown	N
144	38 Depot Sq, Hampton	Service	21-Oct-15	21-Oct-15	unknown	N
145	3 Diane Ln, Hampton	Service	21-Oct-15	26-Oct-15	unknown	N
146	2 Thirteenth St, Hampton	Service	23-Oct-15	23-Oct-15	unknown	N
147	416 High St, Hampton	Service	26-Oct-15	26-Oct-15	unknown	N
148	24 Dover Ave, Hampton	Service	27-Oct-15	27-Oct-15	unknown	N
149	22 Kentville Terr, Hampton	Service	29-Oct-15	29-Oct-15	unknown	N
150	31 Kings Hwy, Hampton	Service	30-Oct-15	30-Oct-15	unknown	N
151	33 Locke Rd, Rye	Service	3-Nov-15	3-Nov-15	unknown	N
152	2 Overlook Ave, Hampton	Service	10-Nov-15	12-Nov-15	unknown	N
153	147 North Shore Rd, Hampton	Service	16-Nov-15	17-Nov-15	unknown	N
154	55 Highland Ave, Hampton	Main	7-Jan-16	26-Jan-16	70	N
155	37 Seaview Ave, Hampton	Meter	7-Jan-16	7-Jan-16	unknown	N
156	5 F St, Hampton	Service	11-Jan-16	11-Jan-16	unknown	N
157	571 Winnacunnet Rd, Hampton	Service	25-Jan-16	25-Jan-16	unknown	N
158	25 Island Path #3, Hampton	Meter	26-Jan-16	26-Jan-16	unknown	N
159	14 Perkins Ave, Hampton	Service	27-Jan-16	28-Jan-16	unknown	N
160	72 Atlantic Ave, Rye	Service	9-Feb-16	18-Feb-16	10	N
161	31 Brown Ave, Hampton	Main	15-Feb-16	16-Feb-16	80	N
162	12R M St, Hampton	Service	16-Feb-16	16-Feb-16	unknown	N
163	12 Auburn Ave Ext, Hampton	Service	17-Feb-16	10-Aug-16	unknown	N
164	43 Mooring Dr, Hampton	Service	9-Mar-16	10-Mar-16	10	N

Table 3. Leak Log 2013 - 2016						
Leak #	Nearest Address to Leak	Leak Type	Date Leak Discovered	Date Leak Repaired	Leak Rate GPM	Discovered during a leak detection survey? Y/N
165	42 Towle Ave, Hampton	Main	13-Apr-16	13-Apr-16	20	N
166	9 Manchester St, Hampton	Service	14-Apr-16	14-Apr-16	unknown	N
167	12 Boston Ave, Hampton	Service	18-Apr-16	19-Apr-16	unknown	N
168	46 Ashworth Ave, Hampton	Service	20-Apr-16	20-Apr-16	unknown	N
169	20 Battcock Ave, Hampton	Service	21-Apr-16	22-Apr-16	unknown	N
170	489 High St, Hampton	Service	28-Apr-16	4-May-16	10	N
171	140 Kings Hwy, Hampton	Service	29-Apr-16	29-Apr-16	10	N
172	19 Riverview Terr, Hampton	Service	29-Apr-16	29-Apr-16	unknown	N
173	8 Sun Surf Ave, Hampton	Main	3-May-16	2-Jun-16	unknown	N
174	147 North Shore Rd, Hampton	Service	4-May-16	11-May-16	10	N
175	1 Sun Surf Ave, Hampton	Service	4-May-16	2-Jun-16	20	N
176	8 Sixth St, Hampton	Main	6-May-16	2-Jun-16	140	N
177	11 H St, Hampton	Service	15-May-16	1-Jul-16	unknown	N
178	25 Perkins Ave, Hampton	Service	18-May-16	18-May-16	unknown	N
179	1044 Ocean Blvd, Hampton	Service	25-May-16	25-May-16	unknown	N
180	457 High St, Hampton	Main	3-Jun-16	10-Jun-16	10	N
181	83 Church St, Hampton	Service	13-Jun-16	15-Jun-16	10	N
182	38 Depot Sq, Hampton	Service	17-Jun-16	23-Jun-16	50	N
183	7 Garrett Dr, North Hampton	Service	17-Jun-16	28-Jun-16	10	N
184	252 Drakeside Rd, Hampton	Service	21-Jun-16	24-Jun-16	10	N
185	426 High St, Hampton	Service	22-Jun-16	23-Jun-16	10	N
186	22 Manchester St, Hampton	Service	29-Jun-16	29-Jun-16	10	N
187	72 Mooring Dr, Hampton	Service	5-Jul-16	15-Jul-16	30	N
188	28 Pine St, Rye	Service	13-Apr-16	13-Jul-16	10	Y
189	1 Park Ave, Hampton	Service	7-Jul-16	13-Jul-16	10	Y
190	13 Manchester St, Hampton	Service	11-Jul-16	13-Jul-16	10	N
191	6 Tenth St, Hampton	Main	22-Jul-16	10-Aug-16	100	N
192	14 Manchester St, Hampton	Service	27-Jul-16	27-Jul-16	10	N
193	6 Bragg Ave, Hampton	Service	29-Jul-16	10-Aug-16	10	N
194	24 Laurel Ln, Hampton	Service	1-Aug-16	1-Aug-16	10	N
195	20 Forest Dr, Hampton	Service	2-Aug-16	10-Aug-16	10	N
196	24 Stickney Terr, Hampton	Service	3-Aug-16	10-Aug-16	unknown	N
197	27 Sweetbriar Ln, Hampton	Service	9-Aug-16	10-Aug-16	10	N
198	Stickney Terr, Hampton	Main	11-Aug-16	24-Aug-16	unknown	N
199	373 Lafayette Rd, Hampton	Main	12-Aug-16	22-Aug-16	60	N
200	356 Lafayette Rd, Hampton	Service	15-Aug-16	15-Aug-16	unknown	N
201	15 Randall St, Hampton	Service	17-Aug-16	19-Aug-16	10	N
202	4 Fourth St, Hampton	Service	19-Aug-16	22-Aug-16	40	N
203	26 Sandpiper Path, North Hampton	Service	8-Sep-16	8-Sep-16	20	N
204	57 Cable Road, Rye	Service	9-Sep-16	14-Sep-16	10	N
205	16R Bragg Ave, Hampton	Service	19-Sep-16	21-Sep-16	10	N
206	8 Toppan St, Hampton	Service	3-Oct-16	13-Oct-16	10	N
207	78 Park Ave, Hampton	Service	17-Oct-16	27-Oct-16	20	N
208	144 Ashworth Ave, Hampton	Service	18-Oct-16	20-Oct-16	30	N
209	16 Carlson Rd, Hampton	Service	18-Oct-16	27-Oct-16	10	N
210	6 Sixth St, Hampton	Main	22-Oct-16	17-Nov-16	100	N
211	7 Lamson Ln, Hampton	Main	2-Nov-16	17-Nov-16	unknown	N
212	Willow Ln, Hampton	Main	14-Nov-16	17-Nov-16	30	N
213	26 Maple Rd, North Hampton	Service	17-Nov-16	17-Nov-16	unknown	N
214	17 Harris Ave, Hampton	Main	2-Dec-16	5-Dec-16	50	N
215	18 Sapphire Ave, Hampton	Service	7-Dec-16	9-Dec-16	22	N
216	11 Epping Ave, Hampton	Service	11-Dec-16	16-Dec-17	62	N
217	24 Presidenital Cir, Hampton	Service	20-Dec-16	21-Dec-16	9	N
218	1088 Ocean Blvd, Hampton	Main	4-Dec-16	pending	70	Y
219	190 Kings Hwy, Hampton	Main	4-Dec-16	pending	10	Y

TABLE 4 - Staff Leak Investigation Activities 2013 - 2016

Category	Notification	Technician on	Tech/Inspect by	Activity Description	Equipment Description	Street	City	Year
Hydrant leak	10122546	01/04/2013	GDODDS	HY Hyd Maint Hampton Beach H154 LEAKS MV	H154 Duston Ave @ Marina DD	DUSTIN	Hampton	2013
Service leak	301027185	01/18/2013	JEATON	Leak in Road	Neptune 5/8 x 3/4 Meter	9 M ST	Hampton	2013
Service leak	301028906	01/25/2013	MBERNIER	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	4 TENTH ST	Hampton	2013
Service leak	301030766	01/31/2013	MBRADLEY	Leak @ Meter	Neptune 1" RADIO PIT METERS	707 OCEAN BD	Hampton	2013
Service leak	301032043	02/04/2013	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	21R DOVER AVE	Hampton	2013
Service leak	301032896	02/06/2013	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	35 CLIFF AVE	Hampton	2013
Service leak	301031817	02/12/2013	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter - PIT METERS	156 ATLANTIC AVE	North Hampton	2013
Service leak	301046838	03/15/2013	JEATON	Leak in Road	Neptune 5/8 x 3/4 Meter	100 Main St	North Hampton	2013
Service leak	301052464	04/01/2013	GDODDS	Leak @ Meter	Neptune 5/8 x 3/4 Meter	975 OCEAN #30 BLVD	Hampton	2013
Service leak	301052460	04/01/2013	GDODDS	Leak @ Meter	Neptune 5/8 x 3/4 Meter	40 MOORING DR	Hampton	2013
Service leak	301052457	04/01/2013	MBRADLEY	Leak @ Coupling	Neptune 5/8 x 3/4 Meter	19 ALEXANDER DR	Hampton	2013
Service leak	301051639	04/01/2013	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	14 HOBBS RD	North Hampton	2013
Service leak	301057481	04/12/2013	GDODDS	Leak in Lawn	Neptune 5/8"	131 LAFAYETTE RD	North Hampton	2013
Service leak	301058688	04/17/2013	GDODDS	Leak in Lawn	Neptune 5/8"	16 BRAGG- REAR AVE	Hampton	2013
Service leak	301059383	04/17/2013	WBARKER	Leak in Road	Neptune 5/8 x 3/4 Meter	28 DIANE LN	Hampton	2013
Service leak	301059124	04/18/2013	WBARKER	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	203 LAFAYETTE ROAD	North Hampton	2013
Service leak	301060938	04/22/2013	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT RADIO	123 H ST	Hampton	2013
Service leak	301057274	05/04/2013	WBARKER	CB 14 BATTDOCK AVE SERVICE LEAK	Neptune 5/8"	14 BATTDOCK AVE	Hampton	2013
Service leak	301070562	05/08/2013	EWASSON	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT METERS	4 NOR EAST LN	Hampton	2013
Service leak	301071964	05/13/2013	GDODDS	Leak in Lawn	Neptune 5/8"	15 DIANE LN	Hampton	2013
Service leak	301071871	05/13/2013	JEATON	Leak in Driveway	Neptune 5/8 x 3/4 Meter PIT METERS	73 DEARBORN AVE	Hampton	2013
Service leak	10152443	05/16/2013	WBARKER	SL 15 Diane Lane SERVICE LEAK	Neptune 5/8 x 3/4 Meter	14 BON AIR AVE	Hampton	2013
Service leak	301076041	05/23/2013	MBRADLEY	Leak @ Meter	H800 South Rd @ street #266	SOUTH RD	Hampton	2013
Hydrant leak	10151830	05/29/2013	JEATON	HY H800 - South Rd 266 LEAKING	Neptune 5/8 x 3/4 Meter - PIT METERS	10 BRADFORD AVE	Rye	2013
Service leak	301078735	05/31/2013	EWASSON	Leak @ Meter	Neptune 5/8 x 3/4 Meter	4 SMITH AVE	Hampton	2013
Service leak	301082049	06/10/2013	JEATON	Leak	Neptune 5/8 x 3/4 Meter	H050 Ocean Blvd @ Smith Ave	Hampton	2013
Hydrant leak	10152886	06/19/2013	JEATON	HM H050 - Ocean Blvd @ St Magnus LEAKING	Neptune 1 1/2" PIT METERS	6 DANCER IMAGE LN	North Hampton	2013
Service leak	301085092	06/19/2013	MBRADLEY	Leak in Road	Neptune 5/8 x 3/4 Meter	2187 OCEAN HOUSE	Rye	2013
Service leak	301086909	06/24/2013	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT RADIO	28 JONES CT	Hampton	2013
Service leak	301091271	07/08/2013	JEATON	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	28 JONES CT	Hampton	2013
Service leak	10153234	07/09/2013	WBARKER	SL 17 BRAGG AV SERVICE LEAK	Neptune 5/8 x 3/4 Meter PIT RADIO	24 PERKINS AVE	Hampton	2013
Service leak	301091602	07/09/2013	WBARKER	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	12 GENTIAN RD	Hampton	2013
Service leak	301092998	07/11/2013	WBARKER	SL 2 Dancers Image LN LEAKING SERVICE	Neptune 5/8 x 3/4 Meter	2 M ST	Hampton	2013
Service leak	301092947	07/13/2013	MBERNIER	Leak in Lawn	Neptune 1 1/2" PIT METERS	66 BROWN AVE	Hampton	2013
Service leak	301094376	07/16/2013	MNORRIS	Leak in Road	Neptune 5/8"	39 NUDD AVE	Hampton	2013
Service leak	301096392	07/22/2013	MNORRIS	Leak in Road	Neptune 5/8 x 3/4 Meter	47 WILD ROSE LN	Hampton	2013
Service leak	301097373	07/24/2013	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 Meter	43 MILBERN AVE	Hampton	2013
Service leak	301098967	07/29/2013	MNORRIS	Leak @ Meter	Neptune 5/8 x 3/4 Meter	8 B ST	Hampton	2013
Service leak	301099384	07/30/2013	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	1 COLONIAL CIR	Hampton	2013
Service leak	301100831	07/31/2013	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 Meter	17 SANDPIPER PATH OLD #15	North Hampton	2013
Service leak	301103460	08/05/2013	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter	14 CHAPPLE RD	North Hampton	2013
Service leak	301106104	08/12/2013	MBERNIER	Leak in Lawn	Neptune 5/8 x 3/4 Meter	27 WALNUT AVE	North Hampton	2013
Service leak	301110798	08/23/2013	MNORRIS	Leak in driveway	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	30111584	08/26/2013	MNORRIS	Leak investigate	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	30111314	08/26/2013	MNORRIS	Leak in Road	Neptune 5/8 x 3/4 R9001 Meter PIT METERS	Hampton	Hampton	2013
Service leak	10154872	08/27/2013	WBARKER	SL 63 CAMPTON STREET LEAK	Neptune 2" R9001 PIT METERS	Hampton	Hampton	2013
Service leak	301113109	08/30/2013	JEATON	Leak @ Meter	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	301113735	09/03/2013	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	301113675	09/03/2013	MNORRIS	Leak in Road	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	301119138	09/18/2013	MBRADLEY	Leak in Driveway	Neptune 5/8 x 3/4 Meter Wall	Hampton	Hampton	2013
Service leak	301123596	10/01/2013	WBARKER	Leak in Road	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	10156580	10/24/2013	WBARKER	SL 945 OCEAN BLVD ST MAGNUS LEAK CO SIDE	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	10157717	10/24/2013	WBARKER	SL 9 RANDALL ST RENEW SERVICE LEAKING	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	301141939	11/13/2013	MNORRIS	Leak	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2013
Service leak	301171717	01/03/2014	MNORRIS	Leak in Driveway	Neptune 5/8 x 3/4 Meter - PIT METERS	Hampton	Hampton	2014
Service leak	301410705	01/06/2014	GDODDS	Leak in Driveway	Neptune 5/8 x 3/4 Meter PIT METERS	Hampton	Hampton	2014
Service leak	10173370	01/13/2014	WBARKER	SL 23 K STREET SERV LEAK PRIVATE PROP	Neptune 5/8 x 3/4 Meter PIT METERS	Hampton	Hampton	2014
Service leak	10173369	01/13/2014	WBARKER	SL 281 SOUTH ROAD RYE SERV LEAK PRI	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2014
Service leak	301174960	01/13/2014	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 PIT METERS,	Hampton	Hampton	2014
Service leak	301213007	01/14/2014	MBERNIER	Leak in Road	Neptune 5/8 x 3/4 Meter PIT RADIO	Hampton	Hampton	2014
Service leak	301214072	01/16/2014	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2014
Service leak	301215941	01/16/2014	WBARKER	Leak in Road	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2014
Service leak	10173690	01/21/2014	WBARKER	HAMP 74 BROWN SERVICE LEAK CUST SIDE	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2014
Service leak	301232058	03/25/2014	MNORRIS	Leak in Road	Neptune 5/8 x 3/4 Meter	Hampton	Hampton	2014

TABLE 4 - Staff Leak Investigation Activities 2013 - 2016

Category	Notification	Technician	Tech/Inspect by	Activity Description	Equipment Description	Street	City	Year
Service leak	301231634	03/31/2014	GDODDS	Leak in Road	Neptune 5/8"	52 GLADE PATH	Hampton	2014
Service leak	301244201	04/25/2014	MBERNIER	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	6 TWELFTH ST	Hampton	2014
Service leak	301246713	04/28/2014	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT RADIO	186 ISLAND PATH	Hampton	2014
Service leak	301253257	05/09/2014	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	14R PERKINS AVE	Hampton	2014
Service leak	301254559	05/13/2014	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	192 NORTH SHORE RD	Hampton	2014
Leak logger	301279883	06/20/2014	MBRILLAR	Leak logger Tuck Rd	V 1001 0481 Cogger St @ Tuck Rd	COGGER ST.	Hampton	2014
Leak logger	301279884	06/20/2014	MBRILLAR	Leak logger Tuck Rd	H 1001 0468 H221 Tuck Rd @ Cogger St	TUCK RD.	Hampton	2014
Leak logger	301279885	06/20/2014	MBRILLAR	Leak logger Anns Ln	V 1000 9813 Tuck Rd @ Anns Ln	TUCK RD.	Hampton	2014
Leak logger	301279886	06/25/2014	EWASSON	Leak logger Tower Dr	B 1071 1974 Tower Dr @ blowoff	Tower Drive	Hampton	2014
Leak logger	301279887	06/25/2014	EWASSON	Leak logger Tower Dr	V 1001 0616 Tower Dr @ Lafayette Rd	TOWER DR.	Hampton	2014
Leak logger	301279889	06/25/2014	EWASSON	Leak logger Belmont Cir	B 1071 1975 Belmont Cir @ Lafayette Rd	Belmont Circle	Hampton	2014
Leak logger	301279910	06/25/2014	EWASSON	Leak logger Belmont Cir	V 1001 0558 Belmont Cir @ Lafayette Rd	BELMONT CR.	Hampton	2014
Leak logger	301279911	06/25/2014	EWASSON	Leak logger Fairfield Ave	V 1001 0520 Ruth Ln @ Fairfield Dr	FAIRFIELD DR.	Hampton	2014
Leak logger	301279917	06/25/2014	EWASSON	Leak logger Fairfield Ave	H 1001 0329 H119 valve	FAIRFIELD DR.	Hampton	2014
Leak logger	301279918	06/25/2014	EWASSON	Leak logger Ruth Ln	V 1001 0537 Ruth Ln @ Fairfield Dr	RUTH LN.	Hampton	2014
Leak logger	301279954	06/26/2014	MBERNIER	Leak logger Foss service valve C			Hampton	2014
Leak logger	301279955	06/26/2014	MBERNIER	Leak logger Foss service valve D			Hampton	2014
Leak logger	301279956	06/26/2014	MBERNIER	Leak logger Foss service valve E			Hampton	2014
Leak logger	301279957	06/26/2014	MBERNIER	Leak logger Foss service valve F			Hampton	2014
Leak logger	301279958	06/26/2014	MBERNIER	Leak logger Foss service valve G			Hampton	2014
Leak logger	301285321	07/09/2014	MNORRIS	Leak logger Ocean Dr	V 1060 5035 Ocean Dr S of Woodstock St	IN LINE	Hampton	2014
Leak logger	301285323	07/09/2014	MNORRIS	Leak logger Woodstock St	V 1059 8145 Woodstock St @ Ocean Dr	STREET VALVE	Hampton	2014
Leak logger	301285324	07/09/2014	MNORRIS	Leak logger Ocean Dr	V 1059 8147 Ocean Dr N of Plymouth St	INLINE VALVE	Hampton	2014
Leak logger	301285325	07/09/2014	MNORRIS	Leak logger Plymouth St	V 1059 8146 Plymouth St @ Ocean Dr	STREET VALVE	Hampton	2014
Leak logger	301285326	07/09/2014	MNORRIS	Leak logger Plymouth St	V 1059 7049 Campton St @ Plymouth St		Hampton	2014
Leak logger	301285328	07/09/2014	MNORRIS	Leak logger Campton St	V 1059 7050 Plymouth St @ Campton St		Hampton	2014
Leak logger	301285329	07/09/2014	MNORRIS	Leak logger Campton St	V 1059 7051 Campton St @ Thornton Ave		Hampton	2014
Leak logger	301285330	07/09/2014	MNORRIS	Leak logger Thornton Ave	V 1059 7052 Thornton Ave @ Campton St		Hampton	2014
Leak logger	301285331	07/10/2014	MBRILLAR	Leak logger Ocean Dr	V 1060 5035 Ocean Dr S of Woodstock St	IN LINE	Hampton	2014
Leak logger	301285332	07/10/2014	MBRILLAR	Leak logger Woodstock St	V 1059 8145 Woodstock St @ Ocean Dr	STREET VALVE	Hampton	2014
Leak logger	301285333	07/10/2014	MBRILLAR	Leak logger Ocean Dr	V 1059 8147 Ocean Dr N of Plymouth St	INLINE VALVE	Hampton	2014
Leak logger	301285334	07/10/2014	MBRILLAR	Leak logger Plymouth St	V 1059 8146 Plymouth St @ Ocean Dr	STREET VALVE	Hampton	2014
Leak logger	301285335	07/10/2014	MBRILLAR	Leak logger Campton St	V 1059 7049 Campton St @ Plymouth St		Hampton	2014
Leak logger	301285337	07/10/2014	MBRILLAR	Leak logger Plymouth St	V 1059 7050 Plymouth St @ Campton St		Hampton	2014
Leak logger	301285338	07/10/2014	MBRILLAR	Leak logger Campton St	V 1059 7051 Campton St @ Thornton Ave		Hampton	2014
Leak logger	301285340	07/10/2014	MBRILLAR	Leak logger Thornton Ave	V 1059 7052 Thornton Ave @ Campton St		Hampton	2014
Hydrant leak	10185025	07/13/2014	GDODDS	well 13B yard hyd. leaking gasket	V 1059 7055 Portsmouth Ave S of H943		North Hampton	2014
Leak logger	301287212	07/15/2014	MBRILLAR	Leak logger Seabrook Interconnection	V 1000 9187 Hampton River cross SW valve		Hampton	2014
Leak logger	301287214	07/15/2014	MBRILLAR	Leak logger River crossing	V 1071 2516 Campton St @ Portsmouth Ave	Campton Street	Hampton	2014
Leak logger	301287216	07/15/2014	MBRILLAR	Leak logger Campton St	V 1059 7053 Thornton St @ Portsmouth Ave		Hampton	2014
Leak logger	301287217	07/15/2014	MBRILLAR	Leak logger Thornton Ave	V 1059 3376 Campton Rd @ Portsmouth Ave	STVREET VALVE	Hampton	2014
Leak logger	301287218	07/15/2014	MBRILLAR	Leak logger Campton St	V 1059 7051 Campton St @ Thornton Ave		Hampton	2014
Leak logger	301287219	07/15/2014	MBRILLAR	Leak logger Campton St	V 1059 7052 Thornton Ave @ Campton St		Hampton	2014
Leak logger	301287230	07/15/2014	MBRILLAR	Leak logger Thornton Ave	V 1059 7053 Thornton Ave @ Campton St		Hampton	2014
Leak logger	301287231	07/15/2014	MBRILLAR	Leak logger River crossing	V 1000 6244 Gill St @ Kings Hwy	GILL ST.	Hampton	2014
Leak logger	301289932	07/22/2014	MBERNIER	Leak logger - Gill St	V 1059 7060 Redman St @ Kings Hwy		Hampton	2014
Leak logger	301289933	07/22/2014	MBERNIER	Leak logger - Redman St	V 1000 6358 Kings Hwy @ Tenth St	KING'S HWY.	Hampton	2014
Leak logger	301289934	07/22/2014	MBERNIER	Leak logger - Ocean Blvd	V 1060 0267 Ocean Blvd @ Twelfth St		Hampton	2014
Leak logger	301289935	07/22/2014	MBERNIER	Leak logger - Ocean Blvd	Kings Hwy: 11th St - Witch Island Way	Kings Highway	Hampton	2014
Leak logger	301289939	07/22/2014	MBERNIER	Leak logger - Butternut Hollow	V 1071 1996 Witch Island @ Kings (south)	Witch Island Way	Hampton	2014
Leak logger	301289941	07/22/2014	MBERNIER	Leak logger - Witch Island Way	V 1000 6316 Eighth St @ Kings Hwy	8TH ST.	Hampton	2014
Leak logger	301289942	07/22/2014	MBERNIER	Leak logger - Eighth St	V 1000 6471 Sixteenth St @ Kings Hwy	16TH ST.	Hampton	2014
Leak logger	301289943	07/22/2014	MBERNIER	Leak logger - Sixteenth St	V 1071 4333 Grist Mill condos on High St	434 High Street	Hampton	2014
Leak logger	301293334	07/29/2014	MBRILLAR	Leak logger - Grist Mill condos	V 1000 6584 High St @ Oak Rd	CHURCH ST.	Hampton	2014
Leak logger	301293336	07/29/2014	MBRILLAR	Leak logger - Grist Mill condos	V 1000 6538 Glade Path @ Church St		Hampton	2014
Leak logger	301293338	07/29/2014	MBRILLAR	Leak logger - High St	V 1000 6554 Mill Pond Ln @ High St	MILL POND LN.	Hampton	2014
Leak logger	301293340	07/29/2014	MBRILLAR	Leak logger - High St	F 1000 6541 fire service for 502 High St	502 High Street	Hampton	2014
Leak logger	301293343	07/29/2014	MBRILLAR	Leak logger - High St	V 1000 6531 High St @ 280-ft. E of H161	HIGH ST.	Hampton	2014
Leak logger	301293346	07/29/2014	MBRILLAR	Leak logger - High St	V 1000 6518 High St @ Kings Hwy	HIGH ST.	Hampton	2014
Leak logger	301293347	07/29/2014	MBRILLAR	Leak logger - High St	V 1000 6593 Mill Pond Ln nr Glen Rd	MILL POND LN.	Hampton	2014
Leak logger	301293880	07/31/2014	MNORRIS	Leak logger - Mill Pond Ln	V 1000 6602 Glen Rd @ Mill Pond Ln	MILL POND LN.	Hampton	2014
Leak logger	301293882	07/31/2014	MNORRIS	Leak logger - Little Fox Rd			Hampton	2014

TABLE 4 - Staff Leak Investigation Activities 2013 - 2016

Category	Notification	Technician on	Tech/Inspect by	Activity Description	Equipment Description	Street	City	Year
Leak logger	301293883	07/31/2014	MNORRIS	Leak logger - Mill Pond Ln	V 1000 6554 Mill Pond Ln @ High St	MILL POND LN.	Hampton	2014
Leak logger	301293884	07/31/2014	MNORRIS	Leak logger - High St	V 1000 6568 High St @ Mill Pond Ln		Hampton	2014
Leak logger	301293885	07/31/2014	MNORRIS	Leak logger - High St	F 1000 6541 fire service for 502 High St	502 High Street	Hampton	2014
Leak logger	301293886	07/31/2014	MNORRIS	Leak logger - High St	V 1000 6531 High St -280-Ft-E of H161	HIGH ST.	Hampton	2014
Service leak	301297778	08/11/2014	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	27 WALNUT AVE	North Hampton	2014
Service leak	301306443	09/03/2014	EWASSON	Leak @ Meter	Neptune 5/8 x 3/4 Meter	71A ESKER RD	Hampton	2014
Service leak	301287210	09/07/2014	MBERNIER	Leak investigation - Campion St	Campion St: Plymouth St - Thornton Ave	Campion Street	Hampton	2014
Service leak	301311445	09/15/2014	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	325 WINNACUNNET RD	Hampton	2014
Hydrant leak	101882333	09/16/2014	GDODDS	GV Nor' East @ Ocean 10007241 plg leak	V 1000 7241 Nor' East Ln @ Ocean Blvd	NOR EAST LN.	Hampton	2014
Service leak	301320346	10/06/2014	EWASSON	Leak in Driveway	Neptune 5/8 x 3/4 Meter	140 LANDING RD	Hampton	2014
Hydrant leak	10190100	10/08/2014	GDODDS	H905 09 Mueller 5 1/4" LEAK flush 300gal	H905 Cable Rd West of Big Rock Rd	CABLE	Rye	2014
Service leak	301323944	10/17/2014	GEATON	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT RADIO	101 STRAWS POINT RD	Rye	2014
Leak logger	301325449	10/17/2014	MBERNIER	Leak logger - High St	F 1000 6541 fire service for 502 High St	502 High Street	Hampton	2014
Leak logger	301325520	10/17/2014	MBERNIER	Leak logger - High St	H 1072 0485 H161 - High St	High Street	Hampton	2014
Leak logger	301325521	10/17/2014	MBERNIER	Leak logger - High St	V 1061 9124 High St @ 534	High St.	Hampton	2014
Leak logger	301325522	10/17/2014	MBERNIER	Leak logger - High St	V 1000 6531 High St -280-Ft-E of H161	HIGH ST.	Hampton	2014
Leak logger	301325523	10/17/2014	MBERNIER	Leak logger - High St	V 1000 6505 High St @ Kings Hwy	HIGH ST.@ KINGS HIWAY	Hampton	2014
Leak logger	301325524	10/17/2014	MBERNIER	Leak logger - High St	V 1061 7682 High St @ Ocean Blvd	HIGH ST	Hampton	2014
Leak logger	301325525	10/17/2014	MBERNIER	Leak logger - High St	H 1072 0486 H049 - Ocean Blvd	Ocean Boulevard	Hampton	2014
Service leak	301329622	10/28/2014	GDODDS	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	7 MCKAY AVE	Hampton	2014
Service leak	301331688	10/31/2014	GDODDS	Leak in Lawn	Neptune 5/8"	92 OCEAN BLVD	North Hampton	2014
Leak logger	301333187	11/03/2014	MBRILLARD	Leak logger Post Rd	V 1001 1007 Post Rd @ Lafayette Rd	POST RD.	Hampton	2014
Leak logger	301333188	11/03/2014	MBRILLARD	Leak logger H579	H 1072 1446 hydrant 579 on Post Rd	Post Road	North Hampton	2014
Leak logger	301333190	11/03/2014	MBRILLARD	Leak logger Post Rd	V 1000 7942 South Rd @ Post Rd	SOUTH RD.	North Hampton	2014
Leak logger	301333191	11/03/2014	MBRILLARD	Leak logger South Rd	V 1000 7934 South Rd @ Post Rd	POST RD.	North Hampton	2014
Leak logger	301333192	11/03/2014	MBRILLARD	Leak logger South Rd	V 1000 7953 South Rd W of Post Rd	SOUTH RD.	North Hampton	2014
Leak logger	301333193	11/03/2014	MBRILLARD	Leak logger South Rd	V 1000 7962 South Rd @ Garrett Dr	SOUTH RD.	North Hampton	2014
Leak logger	301333194	11/03/2014	MBRILLARD	Leak logger Garret Rd	V 1059 8166 Garret Rd W of H614		North Hampton	2014
Leak logger	301333195	11/03/2014	MBRILLARD	Leak logger Garret Rd	V 1000 7991 Garrett Dr @ South Rd	GARRETT DR.	North Hampton	2014
Other	10191751	11/05/2014	GDODDS	Blow off- check leaking valve- off 100%	B 1069 5665 Walnut Ave blowoff	Walnut Avenue	North Hampton	2014
Hydrant leak	10191752	11/05/2014	GDODDS	H618 possible leak sound	H618 Highlander Dr @ street #10	SUBDIVISION LOT 8&9	North Hampton	2014
Service leak	301335850	11/4/2014	EWASSON	Leak in sidewalk	Neptune 5/8 x 3/4 Meter PIT METERS	24 LAUREL LN	Hampton	2014
Hydrant leak	10192374	11/19/2014	GDODDS	H559 65 mueller Ocean blvd. LEAK SOUND	H559 Ocean Blvd near Viano Island DD	S OF N HAMPTON BEACH	North Hampton	2014
Service leak	301339239	11/19/2014	GDODDS	Leak in Road	V 1000 7999 Post Rd S of Sylvan Rd	6 CHASE ST	Hampton	2014
Leak logger	301348034	12/16/2014	MBRILLARD	Leak logger Post Rd	V 1000 8050 Stevens Rd @ Post Rd	POST RD@SYLVAN RD	North Hampton	2014
Leak logger	301348054	12/16/2014	MBRILLARD	Leak logger Post Rd	V 1000 8059 Stevens Rd @ Post Rd	STEVENS RD.	North Hampton	2014
Leak logger	301348055	12/16/2014	MBRILLARD	Leak logger Post Rd	V 1000 8059 Stevens Rd @ Post Rd	STEVENS RD.	North Hampton	2014
Leak logger	301348056	12/16/2014	MBRILLARD	Leak logger Stevens Rd	V 1000 8085 Hillside Rd @ Stevens Rd	HILLSIDE RD.	North Hampton	2014
Leak logger	301348057	12/16/2014	MBRILLARD	Leak logger Post Rd	V 1000 8071 Hillside Rd @ Post Rd	HILLSIDE RD.	North Hampton	2014
Leak logger	301349069	12/17/2014	GDODDS	Leak logger H525 Post Rd	H525 Post Rd @ Hillside Rd	64 POST	North Hampton	2014
Leak logger	301349080	12/17/2014	GDODDS	Leak logger H524 Post Rd	H524 Post Rd @ street #78	78 POST	North Hampton	2014
Leak logger	301349084	12/17/2014	GDODDS	Leak logger V10008160 Post Rd	V 1000 8160 Post Rd N of H524	POST RD.	North Hampton	2014
Leak logger	301349085	12/17/2014	GDODDS	Leak logger H522 Post Rd	H522 Post Rd @ Exeter Rd DD	POST	North Hampton	2014
Leak logger	301349087	12/17/2014	GDODDS	Leak logger V10008105 Post Rd	V 1000 8105 Post Rd @ Exeter Rd	NORTH HAMPTON RD.	North Hampton	2014
Leak logger	301349089	12/17/2014	GDODDS	Leak logger V10008096 Exeter Rd	V 1000 8096 Post Rd @ Exeter Rd	POST RD.	North Hampton	2014
Leak logger	301349090	12/17/2014	GDODDS	Leak logger V10008115 Exeter Rd	V 1000 8115 Exeter Rd @ Post Rd	NORTH HAMPTON RD.	North Hampton	2014
Leak logger	301349091	12/17/2014	GDODDS	Leak logger H523 Exeter Rd	H523 Exeter Rd @ street #10 DD	10 EXETER	North Hampton	2014
Leak logger	10204324	01/07/2015	GDODDS	GV 10008178 leak survey	V 1000 8178 Post Rd N of Exeter Rd	POST RD.	North Hampton	2015
Leak logger	10204325	01/07/2015	GDODDS	GV 10008201 Atlantic@ Hobbs leak sury	V 1000 8201 Hobbs Rd @ Atlantic Ave	HOBBS RD@ATLANTIC AVE	North Hampton	2015
Leak logger	10204326	01/07/2015	GDODDS	GV10008189 Hobbs@Church leak survey	V 1000 8189 Atlantic Av @ Centennial Hall	ATLANTIC AVE NEAR CHURCH	North Hampton	2015
Service leak	301411867	01/09/2015	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 Meter	7B DUSTON AVE	Hampton	2015
Service leak	301424705	09/27/2015	MBRILLAR	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT METERS	883 LAFAYETTE RD	Hampton	2015
Service leak	301427508	03/06/2015	GDODDS	Leak @ Meter	Neptune 5/8 x 3/4 Meter RADIO PIT METERS	48 ASHWORTH AVE	Hampton	2015
Service leak	301427729	03/07/2015	MBRILLAR	Leak in Road	Neptune 5/8 x 3/4 Meter	10 SUN SURF AVE	Hampton	2015
Service leak	301427725	03/07/2015	MBRILLAR	Leak @ Meter FIRE SERVICE	Neptune 5/8 x 3/4 Meter	391 OCEAN BLVD	Hampton	2015
Service leak	301429683	03/13/2015	MNORRIS	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT METERS	30 WINNACUNNET RD	Hampton	2015
Service leak	301429688	03/13/2015	GDODDS	Leak @ Meter Pit	Neptune 2"	23 CUSACK RD	Hampton	2015
Service leak	301432257	03/23/2015	MBERNIER	Leak in Road	Neptune 5/8 x 3/4 Meter PIT METERS	24 STICKNEY TER	Hampton	2015
Service leak	301432135	03/23/2015	MNORRIS	Leak in Driveway	Neptune 1" PIT METERS	280 LAFAYETTE RD	Hampton	2015
Service leak	301453932	04/24/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	816 LAFAYETTE RD	Hampton	2015
Service leak	301454050	04/25/2015	GEATON	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT METERS	7 WILLIAMS ST.	Hampton	2015
Service leak	301453933	04/28/2015	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter	47 OCEAN BLVD	North Hampton	2015
Service leak	301456465	04/30/2015	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter Wall	19 GARLAND ST	Hampton	2015
Service leak	301454554	05/04/2015	MNORRIS	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT RADIO	52 HIGHLAND AVE	Hampton	2015

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Service leak	301461114	05/07/2015	EWASSON	Leak in Lawn	Neptune 5/8 x 3/4 Meter	31 KINGS HWY	Hampton	2015
Service leak	301460981	05/07/2015	MBRADLEY	Leak @ Meter*read notes	Neptune 5/8 x 3/4 Meter Wall	222 RIVERVIEW TERR	Hampton	2015
Service leak	301461796	05/08/2015	MNORRIS	Leak in Road	Neptune 5/8 x 3/4 PIT METERS.	820A LAFAYETTE RD BLDG 1	Hampton	2015
Service leak	301462757	05/12/2015	MNORRIS	Leak in Driveway	Neptune 5/8 x 3/4 Meter Wall	247 LANDING RD	Hampton	2015
Service leak	301463833	05/22/2015	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 Meter	2184 OCEAN BLVD	Rye	2015
Service leak	301468490	05/28/2015	MBERNIER	20 Fellows possible leaking drain-dig	Neptune 5/8 x 3/4 Meter Wall	77 HAMPTON MEADOWS	Hampton	2015
Service leak	301476104	06/11/2015	MBRILLAR	Leak in Driveway	Neptune 5/8 x 3/4 Meter PIT METERS	539 OCEAN BLVD	Hampton	2015
Service leak	301476140	06/11/2015	MBRILLAR	Leak in sidewalk	Neptune 5/8 x 3/4 Meter	533 OCEAN BLVD	Hampton	2015
Service leak	301477111	06/15/2015	MBERNIER	Leak in Driveway	Neptune 1" RADIO PIT METERS	820A LAFAYETTE RD BLDG 1	Hampton	2015
Service leak	301477937	06/17/2015	MBRADLEY	Leak @ Meter	Neptune 1" PIT METERS	6 RUTH LN	Hampton	2015
Service leak	301481913	07/01/2015	MBRADLEY	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT METERS	225 OCEAN BLVD	Hampton	2015
Service leak	301482349	07/06/2015	MNORRIS	Leak in sidewalk	Neptune 5/8 x 3/4 Meter	11 APPLEDORE AVE	North Hampton	2015
Service leak	301484988	07/07/2015	GDODDS	Leak in Road	Neptune 5/8 x 3/4 Meter PIT RADIO	15 SAPPHERE AVE	Hampton	2015
Service leak	301486641	07/09/2015	MNORRIS	Leak in Lawn	Neptune 5/8 x 3/4 Meter RADIO PIT METERS	12 MEADOW POND RD	Hampton	2015
Service leak	301487479	07/10/2015	MBERNIER	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	59 HOBBS RD	Hampton	2015
Leak logger	10219989	07/12/2015	MNORRIS	Leak Logger H941	H941 Ocean Blvd @ Locke Rd	OCEAN SOUTH	Rye	2015
Leak logger	10219990	07/12/2015	MNORRIS	Leak Logger H937	H937 Drake Cir @ Locke Rd	DRAKE CIRCLE	Rye	2015
Leak logger	10219991	07/12/2015	MNORRIS	Leak Logger H910	H910 Old Beach Rd @ Locke Rd	OLD BEACH	Rye	2015
Leak logger	10220038	07/14/2015	MNORRIS	Leak Logger H907	H907 Old Beach Rd @ street #95	OLD BEACH RD	Rye	2015
Leak logger	10220039	07/14/2015	MNORRIS	Leak Logger	H908 Old Beach Rd @ street #47	OLD BEACH	Rye	2015
Leak logger	10220046	07/14/2015	MNORRIS	Leak Logger H906	H906 Cable Rd @ Surf Ln	CABLE	Rye	2015
Leak logger	10220047	07/14/2015	MNORRIS	Leak Logger H911	H911 Ocean Blvd @ Cable Rd	OCEAN	Rye	2015
Leak logger	10220050	07/14/2015	MNORRIS	Leak Logger H908	H908 Atlantic Ave @ Kempthil Ave	ATLANTIC	Rye	2015
Leak logger	10220060	07/14/2015	MNORRIS	Leak Logger H919	H919 Surf Ln @ Jenness Ave	SURF LN	Rye	2015
Service leak	301491265	07/20/2015	MBRILLAR	Leak @ Meter	Neptune 5/8 x 3/4 Meter	988 ISLAND PATH	Hampton	2015
Leak logger	10220419	07/22/2015	MNORRIS	Leak Logger H907	H901 Central Rd @ Jenness Booster	CENTRAL	Rye	2015
Leak logger	10220443	07/22/2015	MNORRIS	Leak Logger H903	H903 Huntvale Ave	HUNTERVALE AVE	Rye	2015
Leak logger	10220453	07/22/2015	MNORRIS	Leak Logger H900	H900 Central Rd @ street #536	DD CENTRAL	Rye	2015
Leak logger	10220454	07/22/2015	MNORRIS	Leak Logger H939	H939 Love Ln @ Central Rd	LOVE LN	Rye	2015
Leak logger	10220455	07/22/2015	MNORRIS	Leak Logger H940	H940 Love Ln @ end of main	LOVE LANE	Rye	2015
Leak logger	10220456	07/22/2015	MNORRIS	Leak Logger H807	H807 Central Rd @ street #680	616 CENTRAL	Rye	2015
Leak logger	10220457	07/22/2015	MNORRIS	Leak Logger H808	H808 Central Rd @ street #616	DD CENTRAL	Rye	2015
Leak logger	10220460	07/22/2015	MNORRIS	Leak Logger H902	H902 Central Rd @ Cable Rd	CABLE	Rye	2015
Leak logger	10220489	07/23/2015	MNORRIS	Leak Logger H922	H922 Perkins Rd @ street #145	145 PERKINS RD	Rye	2015
Leak logger	10220520	07/23/2015	MNORRIS	Leak Logger H923	H923 Perkins Rd @ street #115	110 PERKINS RD	Rye	2015
Leak logger	10220521	07/23/2015	MNORRIS	Leak Logger H924	H924 McLaughlin Dr near Foster Dr	MCLAUGHLIN DR	Rye	2015
Leak logger	10220522	07/23/2015	MNORRIS	Leak Logger H936	H936 Maple Ave @ end	MAPLE AVE	Rye	2015
Leak logger	10220523	07/23/2015	MNORRIS	Leak Logger H925	H925 Maple Ave nr Foster Dr	DD MAPLE	Rye	2015
Leak logger	10220524	07/23/2015	MNORRIS	Leak Logger H928	H928 Pine St @ street #32	PINE	Rye	2015
Leak logger	10220525	07/23/2015	MNORRIS	Leak Logger H929	H929 Pine St	PINE	Rye	2015
Leak logger	10220526	07/23/2015	MNORRIS	Leak Logger H917	H917 Big Rock Rd @ Perkins Rd	BIG ROCK RD	Rye	2015
Hydrant leak	10221013	07/24/2015	MNORRIS	Leak Investigate H928	H928 Pine St @ street #32	PINE	Rye	2015
Leak logger	10221609	08/04/2015	MNORRIS	Leak Logger V10742341	V 1074 2341 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221626	08/04/2015	MNORRIS	Leak Logger V10742347	V 1074 2347 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221627	08/04/2015	MNORRIS	Leak Logger V10742350	V 1074 2350 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221628	08/04/2015	MNORRIS	Leak Logger V10742351	V 1074 2351 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221629	08/04/2015	MNORRIS	Leak Logger V10742352	V 1074 2352 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221630	08/04/2015	MNORRIS	Leak Logger V10742343	V 1074 2343 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221640	08/04/2015	MNORRIS	Leak Logger V10742353	V 1074 2353 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221641	08/04/2015	MNORRIS	Leak Logger V10742354	V 1074 2354 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221685	08/05/2015	MNORRIS	Leak Logger V10742359	V 1074 2359 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221686	08/05/2015	MNORRIS	Leak Logger V10742367	V 1074 2367 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221687	08/05/2015	MNORRIS	Leak Logger V10742362	V 1074 2362 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221688	08/05/2015	MNORRIS	Leak Logger V10742360	V 1074 2360 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221689	08/05/2015	MNORRIS	Leak Logger V10742361	V 1074 2361 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10221710	08/05/2015	MNORRIS	Leak Logger V10742365	V 1074 2365 Hampton Meadows	Hampton Meadows	Hampton	2015

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Category	Notification	Tech/Inspec on	Tech/Inspecn by	Activity Description	Equipment Description	Street	City	Year
Leak logger	102221711	08/05/2015	MNORRIS	Leak Logger V10742366	V 1074 2366 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	102221712	08/05/2015	MNORRIS	Leak Logger V10742368	V 1074 2368 Hampton Meadows	Hampton Meadows	Hampton	2015
Service leak	301497325	08/05/2015	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter Wall	77 HAMPTON MEADOWS	Hampton	2015
Leak logger	10222120	08/06/2015	MNORRIS	Leak Logger H273	H273 DrakeSide Rd @ Towle Farm Rd	DRAKESIDE	Hampton	2015
Leak logger	10222121	08/06/2015	MNORRIS	Leak Logger H272	H272 DrakeSide Rd @ street #224	224 DRAKESIDE	Hampton	2015
Leak logger	10222122	08/06/2015	MNORRIS	Leak Logger H263	H263 DrakeSide Rd @ Hampton Meadows	DRAKESIDE	Hampton	2015
Leak logger	10222123	08/06/2015	MNORRIS	Leak Logger H262	H262 DrakeSide Rd @ street #100	DRAKESIDE	Hampton	2015
Leak logger	10222124	08/06/2015	MNORRIS	Leak Logger H261	H261 DrakeSide Rd @ Raquetball Club	DRAKESIDE	Hampton	2015
Leak logger	10222125	08/06/2015	MNORRIS	Leak Logger H260	H260 DrakeSide Rd @ street #51	DRAKESIDE	Hampton	2015
Leak logger	10222126	08/06/2015	MNORRIS	Leak Logger V10608409	V 1060 8409 DrakeSide Rd at blowoff	Hampton Meadows	Hampton	2015
Leak logger	10222211	08/07/2015	MNORRIS	Leak Logger V10742373	V 1074 2373 Hampton Meadows	Hampton Meadows	Hampton	2015
Leak logger	10222213	08/07/2015	MNORRIS	Leak Logger V10742374	H 1074 2374 Hampton Meadows	Drakeside Road	Hampton	2015
Service leak	301499033	08/07/2015	MBERNIER	Leak in Lawn	Neptune 5/8 x 3/4 Meter RADIO PIT METERS	25 WALNUT AVE	Hampton	2015
Leak logger	10222238	08/10/2015	MNORRIS	Leak Logger H920	H920 Big Rock Rd @ Gray Ct	BIG ROCK	Rye	2015
Leak logger	10222239	08/10/2015	MNORRIS	Leak Logger H918	H918 Big Rock Rd @ Myrica Rd	BIG ROCK	Rye	2015
Leak logger	10222270	08/10/2015	MNORRIS	Leak Logger H912	H912 Ocean Blvd @ Gray Ct	OCEAN	Rye	2015
Leak logger	10222271	08/10/2015	MNORRIS	Leak Logger H913	H913 Ocean Blvd @ Myrica Ave	OCEAN	Rye	2015
Leak logger	10222272	08/10/2015	MNORRIS	Leak Logger H914	H914 Ocean Blvd @ Perkins Rd	OCEAN	Rye	2015
Leak logger	10222273	08/10/2015	MNORRIS	Leak Logger H915	H915 Perkins Rd @ Bernard Dr	PERKINS	Rye	2015
Leak logger	10222274	08/10/2015	MNORRIS	Leak Logger H916	H916 Richard Rd @ street #23	RICHARD RD	Rye	2015
Leak logger	10222275	08/10/2015	MNORRIS	Leak Logger H821	H821 Ocean Blvd @ Eel Pond	OCEAN	Rye	2015
Service leak	301499482	08/10/2015	MNORRIS	LI-45 South Rd Leak in Lawn	Neptune 5/8 x 3/4 Meter RADIO PIT METERS	45 SOUTH RD	North Hampton	2015
Service leak	301499484	08/10/2015	MNORRIS	LI-130 Post Rd. Leak in Drive Cust. Side	Neptune 5/8 x 3/4 Meter	130 POST RD	North Hampton	2015
Service leak	301499209	08/10/2015	MNORRIS	147 North Shore Leak Cust. Side	Neptune 5/8 x 3/4 Meter	147 NORTH SHORE RD	Hampton	2015
Ground mic	10222445	08/13/2015	GDODDS	10697046 main north rd. leak survey	North Rd: Birch Rd to Lafayette Rd	North Road	North Hampton	2015
Leak logger	10222441	08/13/2015	GDODDS	10007314 main leak survey follow up	Central Rd: Sea Rd to South Rd Cl	Central Road	Rye	2015
Leak logger	10222443	08/13/2015	GDODDS	H913 Leak survey follow up	H913 Ocean Blvd @ Myrica Ave	OCEAN	Rye	2015
Leak logger	10222444	08/13/2015	GDODDS	H912 Leak survey follow up	H912 Ocean Blvd @ Gray Ct	OCEAN	Rye	2015
Hydrant leak	301501502	08/13/2015	GDODDS	H638 Leak investigation	H638 North Rd @ Lafayette Rd	NORTH RD	North Hampton	2015
Leak logger	10222471	08/14/2015	GDODDS	V 10010064 Gray@Ocean leak survey	V 1001 0064 Grey Ct @ Ocean Blvd	GREY COURT	Rye	2015
Leak logger	10222472	08/14/2015	GDODDS	V 10010023 Myrica @ Ocean leak Survey	V 1001 0023 Myrica Ave @ Ocean Blvd	MYRICA AVE.	Rye	2015
Service leak	301502224	08/17/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter	400 HIGH ST	Hampton	2015
Service leak	301503881	08/20/2015	GEATON	Leak in Lawn	Neptune 5/8 x 3/4 Meter Wall	2 WALNUT AVE	North Hampton	2015
Service leak	301505042	08/24/2015	EWASSON	Leak @ Meter	Neptune 5/8 x 3/4 Meter PIT METERS	26 ACADIA AVE	Hampton	2015
Service leak	301505556	08/25/2015	GDODDS	Leak @ Meter	Neptune 5/8 x 3/4 Meter Wall	7 GODFREY AVE	Hampton	2015
Other	10220080	08/31/2015	MBERNIER	No. Rd.H638 leaking main valve	H638 North Rd @ Lafayette Rd	NORTH RD	North Hampton	2015
Service leak	301510702	09/09/2015	EWASSON	Leak in Lawn	Neptune 5/8 x 3/4 Meter - PIT METERS	833 CENTRAL RD	Rye	2015
Service leak	301513934	09/14/2015	MBERNIER	Leak @ Meter	Neptune 5/8 x 3/4 Meter RADIO PIT METERS	13 BRAGG AVE	Hampton	2015
Service leak	301515968	09/18/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	60 MOORING DR	Hampton	2015
Service leak	301516825	09/22/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	191 EXETER RD	Hampton	2015
Service leak	301518836	09/24/2015	GDODDS	Leak in Driveway	Neptune 5/8 x 3/4 Meter PIT METERS	15 FELLOWS AVE	Hampton	2015
Service leak	301522862	10/05/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter	20 FOREST DR	Hampton	2015
Service leak	301523887	10/07/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	15 FELLOWS AVE	Hampton	2015
Leak logger	10226386	10/13/2015	MNORRIS	Leak Logger H805	H805 Central Rd @ Sea Rd	CENTRAL	Rye	2015
Leak logger	10226387	10/13/2015	MNORRIS	Leak Logger H804	H804 Central Rd @ St.Theresa's Church	CENTRAL	Rye	2015
Leak logger	10226388	10/13/2015	MNORRIS	Leak Logger H814	H814 Central Rd @ South Rd	CENTRAL	Rye	2015
Leak logger	10226389	10/13/2015	MNORRIS	Leak Logger H813	H813 South Rd @ street #50	SOUTH	Rye	2015
Leak logger	10226393	10/13/2015	MNORRIS	Leak Logger H806	H806 Central Rd @ street#734	CENTRAL	Rye	2015
Leak logger	10226394	10/13/2015	MNORRIS	Leak Logger H809	H809 Red Mill Ln	RED MILL LN	Rye	2015
Leak logger	10226400	10/13/2015	MNORRIS	Leak Logger H812	H812 South Rd @ Drake House	SOUTH RD	Rye	2015
Leak logger	10226401	10/13/2015	MNORRIS	Leak Logger H811	H811 Sea Rd @ Ocean Blvd	SEA	Rye	2015
Service leak	301526144	10/13/2015	MBRADLEY	Leak in Driveway	Neptune 5/8 x 3/4 Meter RADIO PIT METERS	7 CHARLES ST	Hampton	2015
Leak logger	10226445	10/14/2015	MNORRIS	Leak Logger H557	H557 Old Locke Rd @ Golf Course	OLD LOCKE@GOLF COURSE	North Hampton	2015
Leak logger	10226447	10/14/2015	MNORRIS	Leak Logger H556	H556 Willow Ave @ Ocean Blvd	WILLOW@OCEAN BLVD	North Hampton	2015
Leak logger	10226448	10/14/2015	MNORRIS	Leak Logger H555	H555 Willow Ave @ street #24	24 WILLOW	North Hampton	2015
Leak logger	10226446	10/14/2015	MNORRIS	Leak Logger H818	H818 Causeway Rd nr Old Locke Rd	CAUSEWAY	Rye	2015
Leak logger	10226450	10/14/2015	MNORRIS	Leak Logger H819	H819 Church Rd	CHURCH RD	Rye	2015
Leak logger	10226451	10/14/2015	MNORRIS	Leak Logger H817	H817 Ocean Blvd @ Church Rd	CHURCH STREET@OCEAN BLVD	Rye	2015
Leak logger	10226452	10/14/2015	MNORRIS	Leak Logger H816	H816 Central Rd @ Farragut Hotel	CENTRAL	Rye	2015
Leak logger	10226453	10/14/2015	MNORRIS	Leak Logger H815	H815 Central Rd @ street #890	CENTRAL	Rye	2015
Leak logger	10226436	10/15/2015	MNORRIS	Leak Logger H824	H824 South Rd near Love Ln	SOUTH RD	Rye	2015

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Category	Notification	Tech/inspect on	Tech/inspect by	Activity Description	Equipment Description	Street	City	Year
Leak logger	10226437	10/15/2015	MNORRIS	Leak Logger H823	H823 South Rd @ street #320	SOUTH RD	Rye	2015
Leak logger	10226439	10/15/2015	MNORRIS	Leak Logger H800	H800 South Rd @ street #266	SOUTH RD	Rye	2015
Leak logger	10226490	10/15/2015	MNORRIS	Leak Logger H801	DD	SOUTH RD	Rye	2015
Leak logger	10226491	10/15/2015	MNORRIS	Leak Logger H802	H802 South Rd @ street #215	SOUTH RD	Rye	2015
Leak logger	10226492	10/15/2015	MNORRIS	Leak Logger H803	H803 South Rd @ street #160	SOUTH RD	Rye	2015
Leak logger	10226493	10/15/2015	MNORRIS	Leak Logger H822	FAIRWAY DR	FAIRWAY DR	Rye	2015
Hydrant leak	10226531	10/15/2015	GDODDS	H119 leaking by (again)	DD!	FAIRFIELD	Hampton	2015
Service leak	301530994	10/23/2015	GDODDS	Leak in Lawn	Neptune 5/8 x 3/4 Meter PIT METERS	416 HIGH ST	Hampton	2015
Leak logger	10227049	10/28/2015	MNORRIS	Leak Logger H604	H604 Bradley Ln @ street #18	18 BRADLEY LN	North Hampton	2015
Leak logger	10227053	10/28/2015	MNORRIS	Leak Logger H594	H594 Pond Path @ street #7	7 POND PATH	North Hampton	2015
Leak logger	10227054	10/28/2015	MNORRIS	Leak Logger H593	H593 Pond Path @ street #2	2 POND PATH	North Hampton	2015
Leak logger	10227055	10/28/2015	MNORRIS	Leak Logger H576	H576 Chapel Rd @ Old Locke Rd	CHAPEL	North Hampton	2015
Leak logger	10227056	10/28/2015	MNORRIS	Leak Logger H577	H577 Chapel Rd @ street #34	CHAPEL	North Hampton	2015
Leak logger	10227060	10/28/2015	MNORRIS	Leak Logger H603	H603 Bradley Ln @ street #8	8 BRADLEY LN	North Hampton	2015
Leak logger	10227061	10/28/2015	MNORRIS	Leak Logger H595	H595 Pond Path @ Bradley Ln	POND PATH	North Hampton	2015
Service leak	10227062	10/28/2015	MNORRIS	Leak Logger H553	H553 Chapel Rd @ Willow Ave	CHAPEL	North Hampton	2015
Service leak	301534049	10/30/2015	MNORRIS	Leak in Lawn	Neptune 5/8"	30 KINGS #11 HWY	Hampton	2015
Leak logger	10227376	11/01/2015	MNORRIS	Leak Logger 504364 on H558	H558 Ocean Blvd near Viano Island	OCEAN#7 OCEAN BLVD	North Hampton	2015
Leak logger	10227377	11/01/2015	MNORRIS	Leak Logger 504365 on H559	H559 Ocean Blvd @ street #7	S OF N HAMPTON BEACH	North Hampton	2015
Leak logger	10227378	11/01/2015	MNORRIS	Leak Logger 504366 on H560	H560 Ocean Blvd @ Sea Rd	N OF TOWN PARKING LOT	North Hampton	2015
Leak logger	10227379	11/01/2015	MNORRIS	Leak Logger 504367 on H551	H551 Willow Ave @ street #1	1 WILLOW	North Hampton	2015
Leak logger	10227380	11/01/2015	MNORRIS	Leak Logger 504368 on H550	H550 Ocean Blvd NORTH of Atlantic Ave	OCEAN	North Hampton	2015
Leak logger	10227381	11/01/2015	MNORRIS	Leak Logger 504369 on H548	H548 Atlantic Ave @ street #5	5 ATLANTIC	North Hampton	2015
Leak logger	10227382	11/01/2015	MNORRIS	Leak Logger 504370 on H547	H547 Atlantic Ave @ street #19	19 ATLANTIC	North Hampton	2015
Leak logger	10227383	11/01/2015	MNORRIS	Leak Logger 504371 on H549	H549 Ocean Blvd SOUTH of Atlantic Ave	OCEAN	North Hampton	2015
Leak logger	10227392	11/02/2015	MNORRIS	Leak Logger 504365 on H542	H542 Maple Rd @ street #33	33 MAPLE	North Hampton	2015
Leak logger	10227404	11/02/2015	MNORRIS	Leak Logger 504364 on H574	H574 River Rd @ street #10	10 RIVER RD.	North Hampton	2015
Leak logger	10227405	11/02/2015	MNORRIS	Leak Logger 504368 on H540	H540 Atlantic Ave @ Rumynede Farm	ATLANTIC	North Hampton	2015
Leak logger	10227406	11/02/2015	MNORRIS	Leak Logger 504369 on H543	H543 Maple Rd @ Fullers Horse Barn	MAPLE	North Hampton	2015
Leak logger	10227407	11/02/2015	MNORRIS	Leak Logger 504370 on H541	H541 Atlantic Ave @ Maple Rd	ATLANTIC	North Hampton	2015
Leak logger	10227408	11/02/2015	MNORRIS	Leak Logger 504371 on H544	H544 Atlantic Ave @ street #57	57 ATLANTIC	North Hampton	2015
Leak logger	10227411	11/02/2015	MNORRIS	Leak Logger 504366 on H538	H538 Atlantic Ave @ Woodland Rd	ATLANTIC	North Hampton	2015
Service leak	301534926	11/02/2015	MNORRIS	Leak in Driveway	H539 Atlantic Ave @ street #85	85 ATLANTIC	North Hampton	2015
Leak logger	10227415	11/03/2015	MNORRIS	Leak Logger 504365 on H178	H178 Ocean Blvd @ Nor East Ln	OCEAN	North Hampton	2015
Leak logger	10227444	11/03/2015	MNORRIS	Leak Logger 504369 on H053	H053 Ocean Blvd @ North Shore Rd	Ocean Boulevard	Hampton	2015
Leak logger	10227445	11/03/2015	MNORRIS	Leak Logger 504370 on H052	H052 Ancient Hwy @ Shaw St	PLAICE COVE	Hampton	2015
Leak logger	10227446	11/03/2015	MNORRIS	Leak Logger 504371 on H051	H051 Ocean Blvd @ Ancient Hwy	OCEAN@ANCIENT HIGHWAY	Hampton	2015
Leak logger	10227458	11/03/2015	MNORRIS	Leak Logger 504366 on H099	H099 Huckleberry Ln @ street #11	11 HUCKLEBERRY	Hampton	2015
Leak logger	10227459	11/03/2015	MNORRIS	Leak Logger 504367 on H148	H148 Huckleberry Ln @ Juniper Ln	DD	Hampton	2015
Leak logger	10227460	11/03/2015	MNORRIS	Leak Logger 504368 on H054	H054 Ocean Blvd @ street #1042	1042 OCEAN	Hampton	2015
Leak logger	10227442	11/03/2015	MNORRIS	Leak Logger 504364 on H581	H581 Boulter's Cove Ave	BOULTER'S COVER	North Hampton	2015
Service leak	301546108	11/25/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter	11 SUSAN LN	Hampton	2015
Ground mic	10222442	12/07/2015	GDODDS	10697116 main- Leak survey follow up	Ocean Blvd: Gray Ct to Myrica Ave	Ocean Boulevard	Rye	2015
Ground mic	10229565	12/07/2015	GDODDS	H912 leak survey follow up-No Sound	H912 Ocean Blvd @ Gray Ct	OCEAN	Rye	2015
Ground mic	10229567	12/07/2015	GDODDS	Leak survey follow up GV Myrica @ Ocean	V 1001 0023 Myrica Ave @ Ocean Blvd	MYRICA AVE.	Rye	2015
Hydrant leak	10229568	12/07/2015	GDODDS	H913 Leak survey follow up-NO Sound	H913 Ocean Blvd @ Myrica Ave	OCEAN	Rye	2015
Hydrant leak	10229592	12/07/2015	GDODDS	H806 leak investigation follow up	H806 Central Rd @ street#734	CENTRAL	Rye	2015
Hydrant leak	10222450	12/09/2015	GDODDS	H507 leak investigation- follow up	H507 Atlantic Ave west of Pine Rd	ATLANTIC	North Hampton	2015
Service leak	301560910	12/09/2015	MBRADLEY	Leak in Lawn	Neptune 5/8 x 3/4 Meter	489 HIGH ST	Hampton	2015
Leak logger	10229856	12/11/2015	MBERNIER	Leak Survey Hobson Ave. Hamp.	Hobson Ave: off Ashworth Ave	Hobson Avenue	Hampton	2015
Leak logger	10229862	12/14/2015	MBERNIER	Leak Survey Mooring Hamp.	Mooring Ave: off Ashworth Ave	Mooring Avenue	Hampton	2015
Leak logger	10229863	12/14/2015	MBERNIER	Leak Survey Manchester Hamp.	Manchester St: Ashworth Ave to west end	Manchester Street	Hampton	2015
Leak logger	10229864	12/14/2015	MBERNIER	Leak Survey A St. Hamp.	A St: Ashworth Ave to Ocean Blvd	A Street	Hampton	2015
Leak logger	10229865	12/14/2015	MBERNIER	Leak Survey B St. Hamp.	B St: Ashworth Ave to Ocean Blvd	B Street	Hampton	2015
Leak logger	10229866	12/14/2015	MBERNIER	Leak Survey C St. Hamp.	C St: Ashworth Ave to Ocean Blvd	C Street	Hampton	2015
Leak logger	10229867	12/14/2015	MBERNIER	Leak Survey D St. Hamp.	D St: Ashworth Ave - Ocean Blvd	D Street	Hampton	2015
Leak logger	10229868	12/14/2015	MBERNIER	Leak Survey F St. Hamp.	F St: Ashworth Ave to Ocean Blvd	F Street	Hampton	2015
Leak logger	10229869	12/14/2015	MBERNIER	Leak Survey G St. Hamp.	G St: Ashworth Ave to Ocean Blvd	G Street	Hampton	2015
Leak logger	10229880	12/14/2015	MBERNIER	Leak Survey H St. Hamp.	H St: Ashworth Ave to Ocean Blvd	H Street	Hampton	2015
Leak logger	10229881	12/14/2015	MBERNIER	Leak Survey I St. Hamp.	I Street: Ashworth Ave to Ocean Blvd	I Street	Hampton	2015
Leak logger	10229907	12/15/2015	MBERNIER	Leak Survey Perkins Ave Hamp.	Perkins Ave: Auburn Ave Ext to end	Perkins Avenue	Hampton	2015
Leak logger	10229908	12/15/2015	MBERNIER	Leak Survey Perkins Ave Hamp.	Perkins Ave: Ashworth Ave to Auburn Ext	Perkins Avenue	Hampton	2015
Leak logger	10229909	12/15/2015	MBERNIER	Leak Survey Keefe Ave Hamp.	Keefe Ave: GV 1225 to end	Keefe Avenue	Hampton	2015

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Leak logger	10229920	12/15/2015	MBERNIER	Leak Survey Keefe Ave. Hamp.	Keefe Ave: Ashworth Ave to GVI225	Keefe Avenue	Hampton	2015
Leak logger	10229921	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Johnson Ave: off Ashworth Ave	Johnson Avenue	Hampton	2015
Leak logger	10229987	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: A St. to Island Path	Ashworth Avenue	Hampton	2015
Leak logger	10229988	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: Island Path to Nudd Ave	Ashworth Avenue	Hampton	2015
Leak logger	10229989	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: A St. to B St	Ashworth Avenue	Hampton	2015
Leak logger	10229991	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: C St. to D St	Ashworth Avenue	Hampton	2015
Leak logger	10229992	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: Brown Ave to F St	Ashworth Avenue	Hampton	2015
Leak logger	10229994	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: F St. to G St	Ashworth Avenue	Hampton	2015
Leak logger	10229995	12/15/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: G St. to Hobson Ave	Ashworth Avenue	Hampton	2015
Leak logger	10229959	12/16/2015	MBERNIER	Leak Survey Riverview Terr. Hamp.	Riverview Terr: west off Ashworth Ave	Riverview Terrace	Hampton	2015
Leak logger	10229980	12/16/2015	MBERNIER	Leak Survey Bragg Ave. Hamp.	Bragg Ave: off Ashworth Ave	Bragg Avenue	Hampton	2015
Leak logger	10229981	12/16/2015	MBERNIER	Leak Survey Tuttle Ave. Hamp.	Tuttle Ave	Tuttle Avenue	Hampton	2015
Leak logger	10229982	12/16/2015	MBERNIER	Leak Survey Follows Ave. Hamp.	Harris Ave: Dustin Ave to Follows Ave	Harris Avenue	Hampton	2015
Leak logger	10229983	12/16/2015	MBERNIER	Leak Survey J St. Hamp.	J Street: Ashworth Ave to Ocean Blvd	J Street	Hampton	2015
Leak logger	10229984	12/16/2015	MBERNIER	Leak Survey K St. Hamp.	K Street: Ashworth Ave to Ocean Blvd	K Street	Hampton	2015
Leak logger	10229985	12/16/2015	MBERNIER	Leak Survey L St. Hamp.	L St: Ashworth Ave to Ocean Blvd	L Street	Hampton	2015
Leak logger	10229986	12/16/2015	MBERNIER	Leak Survey M St. Hamp.	M St: Ashworth Ave to Ocean Blvd	M Street	Hampton	2015
Leak logger	10229987	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: Keefe Ave to Manchester St	Ashworth Avenue	Hampton	2015
Leak logger	10229999	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: J St. to Mooring Ave	Ashworth Avenue	Hampton	2015
Leak logger	10230010	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: J St. to Mooring Ave	Ashworth Avenue	Hampton	2015
Leak logger	10230011	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: Auburn Ave to K St	Ashworth Avenue	Hampton	2015
Leak logger	10230012	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: K St. to Perkins Ave	Ashworth Avenue	Hampton	2015
Leak logger	10230013	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: L St. to Perkins Ave	Ashworth Avenue	Hampton	2015
Leak logger	10230014	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: M St. to Johnson Ave	Ashworth Avenue	Hampton	2015
Leak logger	10230015	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: Braeg Ave to Riverview Ter	Ashworth Avenue	Hampton	2015
Leak logger	10230016	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: N St. to O St	Ashworth Avenue	Hampton	2015
Leak logger	10230017	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: P St. to Tuttle Ave	Ashworth Avenue	Hampton	2015
Leak logger	10230018	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: P St. to Q St	Ashworth Avenue	Hampton	2015
Leak logger	10230019	12/16/2015	MBERNIER	Leak Survey Ashworth Ave Hamp.	Ashworth Ave: Dustin Ave to Q St	Ashworth Avenue	Hampton	2015
Leak logger	10230372	12/16/2015	MBERNIER	Leak Survey Dustin Ave Hamp.	Dustin Ave: Ashworth Ave to Whitten Ave	Dustin Avenue	Hampton	2015
Leak logger	10230373	12/16/2015	MBERNIER	Leak Survey Dustin Ave Hamp.	Dustin Ave: Harris Ave to Whitten Ave	Dustin Avenue	Hampton	2015
Leak logger	10230374	12/16/2015	MBERNIER	Leak Survey Dustin Ave Hamp.	Dustin Ave: Harbor Rd to Harris Ave	Dustin Avenue	Hampton	2015
Leak logger	10230375	12/16/2015	MBERNIER	Leak Survey Whitten Ave. Hamp.	Whitten Ave	Whitten Avenue	Hampton	2015
Leak logger	10230376	12/16/2015	MBERNIER	Leak Survey Epping Ave. Hamp.	Epping Ave: Ocean Blvd to River Ave	Epping Avenue	Hampton	2015
Leak logger	10230377	12/16/2015	MBERNIER	Leak Survey Epping Ave. Hamp.	River Ave: Dover Ave to Epping Rd	River Avenue	Hampton	2015
Leak logger	10230020	12/17/2015	MBERNIER	Leak Survey N St. Hamp.	N St: Ashworth Ave to Ocean Blvd	N Street	Hampton	2015
Leak logger	10230021	12/17/2015	MBERNIER	Leak Survey O St. Hamp.	O St: Ashworth Ave to Ocean Blvd	O Street	Hampton	2015
Leak logger	10230022	12/17/2015	MBERNIER	Leak Survey P St. Hamp.	P St	P Street	Hampton	2015
Leak logger	10230023	12/17/2015	MBERNIER	Leak Survey Q St. Hamp.	Q St: Ashworth Ave to Ocean Blvd	Q Street	Hampton	2015
Leak logger	10230378	12/18/2015	MBERNIER	Leak Survey Dover Ave. Hamp	Dover Ave: Ocean Blvd to River Ave	Dover Avenue	Hampton	2015
Leak logger	10230379	12/18/2015	MBERNIER	Leak Survey Dover Ave. Hamp	Dover Ave: River Ave to end	Dover Avenue	Hampton	2015
Leak logger	10230391	12/18/2015	MBERNIER	Leak Survey Old Ocean Blvd. Hamp.	Bailey Ave: parallels Ocean Blvd	Bailey Avenue	Hampton	2015
Leak logger	10230670	12/23/2015	MBERNIER	Leak Survey Concord Ave. Hamp.	Concord Ave: Ocean Blvd to River Ave	Concord Avenue	Hampton	2015
Leak logger	10230671	12/23/2015	MBERNIER	Leak Survey Concord Ave. Hamp.	Concord Ave: River Ave to end	Concord Avenue	Hampton	2015
Leak logger	10239885	12/28/2015	MBERNIER	Leak Survey Boston Ave. Hamp	Boston Ave: off River Ave	Boston Avenue	Hampton	2015
Leak investigation	301589125	01/04/2016	MBRILLAR	Leak in Road	H157 Exeter Rd @ Oakdale Ave	Exeter Rd	Hampton	2016
Leak investigation	301589331	01/06/2016	MBERNIER	Leak in Road	11 Hampton Town Estates	Hampton Town Estates	Hampton	2016
Leak investigation	301590739	01/07/2016	EWASSON	Leak @ Meter	497 Ocean Blvd	Ocean Blvd	Hampton	2016
Hydrant leak	10242580	01/21/2016	GDODDS	H538 recheck for leaking valve. Dip			Hampton	2016
Hydrant leak	10242832	01/25/2016	GDODDS	H937 inspect for leaking drains yes loud			Hampton	2016
Hydrant leak	10242823	01/25/2016	GDODDS	H638 inspect for leaks-none			Hampton	2016
Hydrant leak	10242833	01/25/2016	GDODDS	H912 inspect for leaking drains- Leaking			Hampton	2016
Leak investigation	301595754	01/26/2016	MBRILLAR	Leak @ Meter	V 1001 0516 Harris Ave @ Follows Ave	Harris Avenue	Hampton	2016
Hydrant leak	10243865	02/03/2016	GDODDS	H157 Possible leaking stem bolts/replace	H108 Bourne Ave @ Josephine Dr	Bourne & Josephine	Hampton	2016
Leak investigation	301598894	02/05/2016	MBRADLEY	Leak in Road	5 H St	H Street	Hampton	2016
Leak investigation	301598901	02/08/2016	MBRILLAR	Leak @ Meter	65 Exeter Rd	Exeter Rd	Hampton	2016
Leak investigation	301600412	02/10/2016	GDODDS	Leak in Lawn	15 Harris Ave	Harris Avenue	Hampton	2016
Leak investigation	301601111	02/12/2016	MNORRIS	Leak @ Coupling	12 Manchester St #3 & #5	Manchester Street	Hampton	2016
Leak investigation	301601604	02/16/2016	EWASSON	Leak @ Coupling	176 Mill Rd	Mill Rd	Hampton	2016
Leak investigation	301601608	02/16/2016	EWASSON	Leak @ Meter	11 Hampton Town Estates	Hampton Town Estates	Hampton	2016
Leak investigation	301601763	02/16/2016	MNORRIS	Leak in Road	46 South Rd	South Rd	North Hampton	2016
Leak investigation	301601764	02/16/2016	MNORRIS	Leak in Lawn	44 Lafayette Rd #10	Lafayette Rd	North Hampton	2016
					19 Cutler Ave	Cutler Ave	Hampton	2016
					43 Pearl St	Pearl St	Hampton	2016

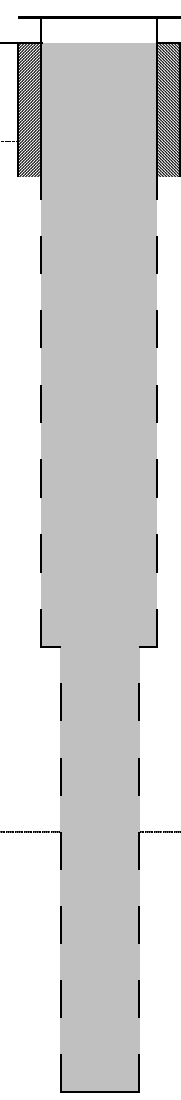
TABLE 4 - Staff Leak Investigation Activities 2013 - 2016

Category	Notification	TechInspec on	TechInspecn by	Activity Description	Equipment Description	Street	City	Year
Leak investigation	301601771	02/16/2016	EWASSON	Leak @ Meter	121 Little River Rd	Little River Rd	Hampton	2016
Leak investigation	301602241	02/17/2016	MBRILLAR	Leak @ Meter	97 Highland Ave	Highland Ave	Hampton	2016
Leak investigation	301602609	02/18/2016	EWASSON	Leak @ Meter	92 Ashworth Ave	Ashworth Avenue	Hampton	2016
Leak investigation	301603447	02/23/2016	GEATON	Leak @ Coupling	25 Island Path #3	Island Path	Hampton	2016
Leak investigation	301604614	02/25/2016	EWASSON	Leak @ Meter	16 Josephine Dr	Josephine Dr	Hampton	2016
Leak investigation	301602224	03/01/2016	EWASSON	Leak @ Coupling	830 Lafayette Rd	Lafayette Rd	Hampton	2016
Leak investigation	301607213	03/04/2016	EWASSON	Leak @ Meter	37 Seaview Ave	Seaview Rd	Hampton	2016
Hydrant leak	10245753	03/09/2016	GDODDS	H912 repaired leaking drains	H108 Bourne Ave @ Josephine Dr	Bourne & Josephine	Hampton	2016
Leak investigation	301608374	03/09/2016	MBRADLEY	Leak in Driveway	27 Dover Ave	Dover Avenue	Hampton	2016
Leak investigation	301619168	04/08/2016	MBRADLEY	Leak @ Meter	26 Acadia Ave	Acadia Ave	Hampton	2016
Leak investigation	301622409	04/14/2016	MBERNIER	Leak in Road	2 Manchester St #2 & #6	Manchester Street	Hampton	2016
Leak investigation	301624706	04/20/2016	MBRILLAR	Leak Location Unknown	24 Wall St	Wall St	Hampton	2016
Leak investigation	301624928	04/21/2016	GDODDS	Leak @ Meter	25 Island Path #1	Island Path	Hampton	2016
Leak investigation	301623534	04/21/2016	MBRILLAR	Leak in Lawn	43 Mooring Dr	Mooring Avenue	Hampton	2016
Leak investigation	301629539	04/28/2016	GDODDS	489 High St. Leak in Sidewalk	26 Maple Rd	Maple Rd	North Hampton	2016
Leak investigation	301633380	04/29/2016	GDODDS	Leak in Lawn	179 Mill Rd	Mill Rd	Hampton	2016
Leak investigation	301633443	04/29/2016	MNORRIS	Leak in Lawn	9 Great Boars Head Ave	Great Boars Head Ave	Hampton	2016
Leak investigation	10251140	05/09/2016	GDODDS	Private Hyd/Main 1 Park ave Leak sound	H638 North Rd @ Lafayette Rd	North Rd	North Hampton	2016
Leak investigation	301646303	05/18/2016	MNORRIS	Leak in Lawn	731 Central Rd - Club House	Central Rd	Rye	2016
Leak investigation	301649197	05/25/2016	MNORRIS	Leak Location Unknown	4 Hillside Rd	HILLSIDE RD.	North Hampton	2016
Leak investigation	301649827	05/27/2016	GDODDS	Leak in Road	27 Sweetbriar Ln	Sweetbriar Ln	Hampton	2016
Leak investigation	301649828	05/27/2016	GDODDS	Leak in Road	11 Straws Point Rd	STRAWS POINT	Rye	2016
Leak investigation	301651724	06/01/2016	MNORRIS	Leak @ Meter	20 Battcock Ave	Battcock Ave	Hampton	2016
Leak investigation	301652026	06/02/2016	EWASSON	Leak @ Meter	13 Dustin Ave	Dustin Avenue	Hampton	2016
Leak investigation	301654862	06/09/2016	MBRADLEY	Leak @ Meter	12R M St	M Street	Hampton	2016
Leak investigation	301652158	06/10/2016	MBRADLEY	Leak @ Meter	18 Sapphine Ave	Sapphine Ave	Hampton	2016
Leak investigation	301656511	06/16/2016	EWASSON	Leak @ Meter	6 Bragg Ave	Bragg Avenue	Hampton	2016
Leak investigation	301660516	06/23/2016	MNORRIS	Leak in Lawn	9 Epping Ave	Epping Avenue	Hampton	2016
Leak investigation	301661009	06/24/2016	MNORRIS	Leak @ Meter	19 Riverview Terr	Riverview Terrace	Hampton	2016
Leak investigation	301665462	07/07/2016	GEATON	Leak in Road	25 Perkins Ave	Perkins Avenue	Hampton	2016
Leak investigation	301665463	07/08/2016	GDODDS	Leak in Road	4 Hillside Rd	HILLSIDE RD.	North Hampton	2016
Hydrant leak	10257387	07/24/2016	GDODDS	H901 used by RFD-propane leak	H901 Central Rd @ Jenness Booster	Central Rd	Rye	2016
Service leak	10257361	07/27/2016	GEATON	3/4 service line leak 14 manchester st	H912 Ocean Blvd @ Gray Ct	Ocean Blvd	Rye	2016
Leak investigation	301673223	07/29/2016	MBRADLEY	Leak in Lawn	31 Brown Ave	Brown Ave	Hampton	2016
Leak investigation	301673528	07/29/2016	MBERNIER	Leak @ Meter	55 Highland Ave	Highland Ave	Hampton	2016
Leak investigation	301677039	08/08/2016	EWASSON	Leak in Lawn	55 Highland Ave	Highland Ave	Hampton	2016
Hydrant leak	10258536	08/09/2016	GDODDS	H108 rebuild-main valve was leaking by	H912 Ocean Blvd @ Gray Ct	Ocean Blvd	Rye	2016
Leak investigation	301678435	08/12/2016	MBRADLEY	Leak Location Unknown	10 Manchester St #2	Manchester Street	Hampton	2016
Leak investigation	301678895	08/12/2016	MBRADLEY	Leak Location Unknown	24 H St	H Street	Hampton	2016
Hydrant leak	10259037	08/20/2016	GDODDS	H108 Josephine@Bourne fix leak	H924 McLaughlin Dr near Foster Dr	McLaughlin Dr	Rye	2016
Hydrant leak	10259175	08/23/2016	GDODDS	H924 Investigating leak noise-still	H937 Drake Cr @ Locke Rd	Drake Cr	Rye	2016
Leak investigation	301685834	09/01/2016	GEATON	Leak Location Unknown	24 H St	H Street	Hampton	2016
Leak investigation	301685930	09/01/2016	MBRADLEY	Leak in Lawn	14 Manchester St #1	Manchester Street	Hampton	2016
Leak investigation	301685886	09/07/2016	EWASSON	Leak Location Unknown	14 Manchester St #1	Manchester Street	Hampton	2016
Leak investigation	301695187	09/29/2016	EWASSON	Leak in Lawn	8 Greene St	Greene St	Hampton	2016
Leak investigation	301696238	10/03/2016	EWASSON	Leak @ Meter	26 Bradley Ln	Bradley Ln	North Hampton	2016
Leak investigation	301698692	10/11/2016	EWASSON	Leak Location Unknown	1044 Ocean Blvd #2A	Ocean Blvd	Hampton	2016
Leak investigation	301698621	10/12/2016	EWASSON	Leak Location Unknown	1 Mill Rd	Mill Rd	Hampton	2016
Leak investigation	301702418	10/18/2016	MNORRIS	Leak @ Meter	13 Dustin Ave	Dustin Ave	Hampton	2016
Leak investigation	301718415	11/17/2016	MNORRIS	Leak in Lawn	55 Mooring Dr	55 Mooring Dr	Hampton	2016
Leak investigation	301717094	11/21/2016	GDODDS	Leak in Road	46 Ashworth Ave	46 Ashworth Ave	Hampton	2016
Leak investigation	301723233	12/07/2016	EWASSON	Leak in Lawn	140 Kings Hwy #16	140 Kings Hwy #16	Hampton	2016
Leak investigation	301724238	12/11/2016	MBERNIER	Leak in Lawn	489 High St	489 High St	Hampton	2016
Leak investigation	301728437	12/27/2016	MNORRIS	Leak in Driveway	5 Bragg Ave	5 Bragg Ave	Hampton	2016
Leak investigation	301728509	12/27/2016	MNORRIS	Leak in Lawn	5 Bragg Ave	5 Bragg Ave	Hampton	2016

Appendix B

Borehole Log - Well 22

Well Owner: Aquarion Water Co. of NH	Well Location: 120 Feet NW of Well 7	Notes: Drilling Dates 10/1/2012 - 10/9/2012 10/3-10/5: Initially advanced 6.6-inch borehole from 67-340 feet bgs. 10/8: Due to high amounts of water reamed 10-inch borehole from 67-320 feet bgs. 10/9: 8-inch borehole advanced from 320-560 feet bgs. Excavated 150-foot long, 4-foot wide trench for discharge water.
Date of Completion: 10/9/2012	Well Depth: 560 Feet BGS	
Drilling Contractor: Viera Artesian Well Co.	Water Depth: 9 Feet BGS (10/10/2012)	
On-Site Driller: Jim Viera	Casing Depth: 67 Feet BGS	
Field Technician: C. Hanson / A. Fopiano	Casing Stick-up: 2 Feet AGS	
Project Manager: A. Fopiano	Drill Method: Air Rotary	

DEPTH	Soil and Rock Description	Fracture	Depth	Well Yield	Well Description	Depth	WELL CONSTRUCTION INFORMATION	
0.0						+2'	TOP OF STEEL CASING - 2 FT AGS	
						0'	EXISTING GRADE	
20.0	(0'-50') Coarse Sand and Gravel, with Cobbles, trace Clays present from 48'-50'.							
40.0								
60.0	(50' - 420') Dark Grey/Green foliated schist. (Rye Formation)					50'	CONCRETE SANITARY SEAL AROUND CASING 0 - 67 FT BGS BEDROCK INTERFACE	
80.0		Fn	90'			67'	10-INCH STEEL CASING TO 67 FT BGS OPEN 10-INCH BORE HOLE 67 - 320 FT BGS	
100.0								
120.0								
140.0		Fn	135'					
160.0		Fn	150'					
180.0		Fn	175'					
200.0								
220.0		Fp	219'	30-40 GPM				
240.0		Fp	230'	80 GPM				
260.0	Fp	245'	100 GPM					
280.0	Fp	256'	>200 GPM					
300.0							Air Lift / Bucket Test	
320.0	Fp	285' - 295'	>300 GPM				Air Lift / Bucket Test	
340.0	Fp	310'						
360.0	Fp	316'						
380.0	Fp	330'						
400.0								
420.0	Fp	390'						
440.0	Fp	420'				420'	BEDROCK CONTACT ZONE 420 FT BGS	
460.0	(420'- 560') Light Grey Granite/Quartzite. High quartz and mica content. (Breakfast Hill Granite)							
480.0		Fp	480'	>300 GPM				
500.0		Fp	505' - 510'					
520.0								
540.0								
560.0				>300 GPM		560'	BOTTOM OF BOREHOLE	
580.0								
600.0								
620.0	* Geologic descriptions based upon drilling cuttings. Rock Formation identifications based upon descriptions presented by Lyons et al 1997 in the Geologic Map of New Hampshire.				* Could not accurately measure flow rate with air lift test at well completion because of high flow rate and flooding around the drill rig.			
640.0								
660.0								
680.0								
700.0								

Fp: Producing
 Fn: Nonproducing
 GPM = gallons/minute

BGS = Below Ground Surface
 AGS = Above Ground Surface

Appendix C

VLF Survey – Hager & Richter Geoscience, Inc.

**VLF SURVEY
AQUARION WELL FIELDS
HAMPTON & NORTH HAMPTON
NEW HAMPSHIRE**

Prepared for:

Geosphere Environmental Management, Inc.
51 Portsmouth Avenue
Exeter, New Hampshire 03833

Prepared by:

Hager-Richter Geoscience, Inc.
8 Industrial Way - D10
Salem, New Hampshire 03079

File 12SG23
September, 2012

0. EXECUTIVE SUMMARY

Hager-Richter Geoscience, Inc. conducted a VLF survey for Geosphere Environmental Management, Inc. (GEM) of Exeter, New Hampshire at three Aquarion Water Company wellfield sites designated as SB-1, Well 7, and Well 14 in August, 2012. The sites were located approximately as follows:

- SB-1 site, near Mill Road in North Hampton, New Hampshire
- Well 7 site, near Woodland Road/High Street in Hampton, New Hampshire
- Well 14 site, near Exeter Road (Route 111) / Interstate 95

The VLF survey was performed in support of a groundwater supply investigation by GEM to select one or more drilling locations for possible high yield water wells. A fracture trace analysis of the sites had been performed previously by GEM.

The sites are at or near active Aquarion Water Company groundwater supply wells. The areas of interest for the VLF survey were specified by GEM as approximately 330-foot by 400-foot portions of flat heavily vegetated wood lots for site SB-1 and Well 7 and an approximately 300-foot by 400-foot field covered in dense brush and tall grasses at site Well 14.

Based on the results of the VLF survey conducted by Hager-Richter Geoscience, Inc. and a fracture trace analysis (FTA) conducted by GEM at three Aquarion Water Company wellfield sites, Hager-Richter has identified the following number of locations for siting high yield water wells where the locations have four FTA lineaments and/or VLF fracture zones (intersections) intersecting:

- SB-1 site, two locations
- Well 7 site, seven locations
- Well 14 site, no location

However, the Well 14 Site has six locations with three FTA lineaments and/or VLF fracture zones.

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FIGURES

1	General Site Locations
2	VLF Survey SB-1
3	VLF Survey Well 7
4	VLF Survey Well 14

TABLE

1	Potential Well Site Intersections
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APPENDIX

1	VLF Data
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1. INTRODUCTION

Hager-Richter Geoscience, Inc. conducted a VLF survey for Geosphere Environmental Management, Inc. (GEM) of Exeter, New Hampshire at three Aquarion Water Company wellfield sites designated as SB-1, Well 7, and Well 14. The sites were located approximately as follows:

- SB-1 site, near Mill Road in North Hampton, New Hampshire
- Well 7 site, near Woodland Road/High Street in Hampton, New Hampshire
- Well 14 site, near Exeter Road (Route 111) / Interstate 95

The general site locations are shown in Figure 1. The VLF data were acquired August 21 – 23, 2012.

The VLF survey was performed in support of a groundwater supply investigation by GEM to select one or more drilling locations for possible high yield water wells. A fracture trace analysis (FTA) had been performed previously by GEM, and the results were included in our interpretation.

The sites are at or near active Aquarion Water Company groundwater supply wells. The areas of interest for the VLF survey was specified by GEM as a pair of approximately 330-foot by 400-foot portions of flat heavily vegetated wood lots for the SB-1 and Well 7 sites and an approximately 300-foot by 400-foot field covered with dense brush and tall grasses at site Well 14. Although several cultural features that had the capacity to produce cultural interference, (an underground water line and live overhead electric lines) are present in the survey area at the Well 7 site, the data do not appear to contain significant cultural interferences at the locations of these features. The bedrock is mapped as the Rye formation (OZrz)¹, a migmatite consisting of gray, foliated, sheared or mylonitized two-mica granite and pegmatite, as well as minor hornblende-biotite diorite, intruding metapelites and meta volcanic rocks, and it is overlain by sand and gravel. The depth of bedrock reportedly varies from approximately 20 ft to 50 ft at SB-1, from approximately 15 ft to 45 ft in the vicinity of Well 7, and from approximately 39 ft to 71 ft in the vicinity of Well 14.

The objective of the VLF survey was to provide data that can be integrated with the results of the FTA to help form the basis for siting one or more possible high yield bedrock wells at each of the three sites. The approximate locations of the survey areas are shown in Figure 1.

¹Lyons, J.B., Bothner, W.A., Moench, R.H., and Thompson, J.B., Jr., 1997, Bedrock Geologic Map of New Hampshire: Reston, VA, U.S. Geological Survey Special Map, 1:250,000, 2 sheets.

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Based on proposed VLF survey lines that were provided by GEM in GIS format and discussed in the field on August 21, the VLF transects for sites SB-1 and Well 7 were designed in GIS and transferred to a GPS unit. The GPS unit was used to stake the intersections and endpoints of the lines. The staked lines were cleared by Hager-Richter with assistance from GEM and their locations are shown in Figures 2 to 4. Results of the fracture trace analysis were provided by GEM.

Hager-Richter personnel were on site August 20 to 23, 2012. Eric Rickert conducted the VLF survey. The project was coordinated with Ms. Abigail J.T. Fopiano of GEM, who was present for a site walk on August 20 and helped set up the grid and observed a portion of the field work on August 22. Mr. Craig C Hanson of GEM and Michael Howley of Hager-Richter helped set up the survey grid and observed a portion of the field work on August 21 and 23. Data analysis and interpretation were performed at the Hager-Richter offices. Original data and field notes will be retained in the Hager-Richter files for a minimum of three years.

A preliminary interpretation of the VLF data was provided electronically to GEM on August 31, 2012. The interpretation presented herein, based on both the VLF and FTA results, differs somewhat from the preliminary interpretation.

2. METHODS AND PROCEDURES

2.1 Concept

Several radio transmitters operate throughout the world in the so-called very low frequency (VLF) range, 15-25 kHz, and are used for marine navigation, communication with submersed submarines, and other purposes. In North America, such stations are located in Cutler, Maine, La Mour, North Dakota, and Jim Creek, Washington. There are also stations in Hawaii and Puerto Rico.

The principle of VLF subsurface exploration is simple. At distances greater than a few tens of miles from a transmitter, the magnetic field lines due to the radio wave transmission are concentric circles about the transmitter. In one theory, the magnetic fields cause electric currents to flow in subsurface conductors. In another, more recent, theory, the subsurface currents flow along interfaces between bodies of differing conductivity. [The interpretation, however, is much the same for both theories.] Such induced currents, in turn, produce secondary magnetic fields which can be measured and interpreted in terms of the spatial variation of subsurface electrical conductivity. The strength of the incident, also called primary, magnetic field in the earth decreases with depth, and, therefore, the induced currents decrease with depth. Thus, the method is sensitive to conductivity changes to depths of about 100 to several hundred feet — and the exact value depends on the frequency of the signal and the electrical conductivity of the subsurface.²

VLF is an excellent geophysical method to explore for bedrock fracture zones for the following two reasons. First, the dip of many fracture zones is near vertical. Observations of fracture zones in road cuts in bedrock commonly show their dips to be within 10° to 20° of vertical. Additional data on dips of fracture zones have accumulated in the water well drilling industry during the past 30 to 40 years as a result of intentionally drilling into fracture zones to obtain high yields, and those data confirm the dips observed in road cuts. Second, saturated bedrock fracture zones are electrically conducting and, therefore, detectable with the VLF method. The electrical conductivity of most intact, massive rock (such as most igneous and metamorphic rock and many sedimentary rocks, including limestone) depends on the porosity and electrical conductivity of the fluid filling the pores. The bedrock outside fracture zones is

² The penetration depth, for practical purposes, in feet is given by

$$\text{DEPTH (Ft)} = 500 [\text{RESISTIVITY (Ohm-m)/FREQUENCY (Hz)}]^{1/2}$$

typically highly resistive — commonly ≥ 1000 Ohm-m — whereas that of fracture zones is commonly no more than a few Ohm-m.

Several commercial VLF instruments are available. Hager-Richter used the ABEM VLF receiver, called a Wadi receiver for this survey. This unit measures (1) the tilt angle of the magnetic field which is approximately equal to the component of the ratio of vertical magnetic field to the horizontal magnetic field and (2) the ellipticity of the magnetic field which is approximately equal to the quadrature phase component. Therefore, the Wadi effectively resolves the in-phase and quadrature phase components. Where the earth is horizontally layered, and the electrical conductivity of each layer is uniform, the vertical component is zero. The in-phase component, also called the real component, is a sensitive indicator of the presence of subsurface electrical conductors that are not horizontal. An excellent discussion of the physics of the VLF method is given by McNeill and Labson.³

2.2 Field Work

The design of the field program is often constrained by access and by the need to correlate the VLF results with those of other methods and perhaps other programs. Ideally, however, data are acquired along lines that are oriented approximately perpendicular to the strike of the structure being investigated. The choice of the interval to be used for data acquisition along the survey lines depends on the subsurface conductivity structure, but for the investigation of bedrock structures, a satisfactory practical choice is to space the data stations at no more than the depth of bedrock. Because there is typically a large amount of noise in the data, probably caused by small scale variations in the electrical conductivity of the subsurface unrelated to the structure(s) of interest, data acquisition along several parallel lines is desirable.

2.3 Data Analysis and Interpretation

The real component is used for the detection of water bearing bedrock fractures. The data are filtered using the filter described by Fraser⁴ and are plotted in profile format. VLF data are interpreted using pattern recognition of anomalies that are departures of the real component of the VLF signal judged to be significant—that is, well above noise. Such anomalies indicate subsurface regions along a particular VLF survey line as having increased electrical conductivity. The ‘highs’ are then correlated between VLF survey lines and connected to form zones of

³ McNeill JD and Labson VF, Geological Mapping Using VLF Radio Fields, in Nabighian MN, editor, **Electromagnetic Methods in Applied Geophysics**, Vol 2, Application, Part B, pp 521-640, published by Soc. of Exploration Geophysicists, Tulsa, Oklahoma, 1987.

⁴ Fraser DC, 1969, Contouring of VLF-EM Data, **Geophysics** 34, 958.

increased conductivity. Because zones of increased hydraulic permeability in bedrock are likely to have increased electrical conductivity, such anomalies are excellent guides to such zones.

The VLF method is commonly used with other methods that are sensitive to near-vertical zones of increased conductivity such as fracture trace analysis (FTA) and resistivity imaging. The results of FTA are a set of photolinears that may be due to subsurface fracture zones. Where the FTA photolinears coincide with, or at least are parallel to and located near, zones of increased conductivity identified with a VLF survey, confidence in the presence of bedrock fracture zones is strengthened. The location and dip of such zones of increased conductivity can be significantly improved with the resistivity imaging method.

The location of the intersection of two or more VLF identified fracture zones and/or FTA identified fracture zones is commonly used with success in siting high yield water wells, and it is generally accepted that locations with several such intersections are preferred over those with fewer intersections. Locations with both VLF identified fracture zones *and* FTA identified fracture zones are better than those with only one type of zone.

2.4 Limitations of the VLF Method

An excellent summary of the limitations of the VLF method is given by McNeill and Labson⁵ as follows:

“The disadvantages are principally (1) the relatively shallow depth of exploration in all but the most resistive terrain; (2) the large number of variables that control the response of 2-D and 3-D targets, combined with the fact that we generally measure only two variables, making any but the most rudimentary interpretation difficult or impossible; (3) the relatively poor ability to resolve better conductors, and (4) the existence of significant topographic response.”

2.5 Site Specific

The VLF survey areas were selected by GEM based on existing Site conditions, access, and the results of a fracture trace analysis conducted by GEM. The approximate locations of the survey areas are shown in Figure 1. Based on proposed VLF survey lines that were provided by GEM in GIS format and discussed in the field on August 21, the VLF transects for sites SB-1 and Well 7 were designed in GIS and transferred to a GPS unit. The locations provided by the GPS

⁵McNeill JD and Labson VF, Geological Mapping Using VLF Radio Fields, in Nabighian MN, editor, **Electromagnetic Methods in Applied Geophysics**, Vol 2, Application, Part B, pp 521-640, published by Soc. of Exploration Geophysicists, Tulsa, Oklahoma, 1987.

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unit were used to stake the intersections and endpoints of the lines. The VLF transects for Well 14 were located using the GPS unit and site features. The staked lines for sites SB-1, Well 7 and Well 14 sites were cleared by Hager-Richter with assistance from GEM and are shown in Figures 2 to 4, respectively.

For this project, we used the Cutler, ME transmitter and an unidentified VLF transmitter operating at frequencies of 24.0 kHz and 15.4 kHz, respectively for the SB-1 site. The Cutler, ME VLF transmitter was used for both orientations for the Well 7 and Well 14 sites. VLF data were acquired using a nominal station spacing of 10 feet.

3. RESULTS AND DISCUSSION

The VLF survey consisted of a total of 946 measurements along 26 survey lines at three sites for a cumulative total of about 9,260 linear feet. The locations of the VLF survey lines, the possible fracture zones interpreted from VLF data, and the integrated interpretation of the results for the SB-1, Well 7 and Well 14 site are shown in Figures 2 to 4, respectively. As discussed previously, the VLF data were acquired using a nominal station spacing of 10 feet. The VLF data were processed in the office using the filter described by Fraser. Profile plots of the VLF data are provided in the Appendix.

Figures 2 to 4 shows the interpretation of the VLF survey together with the results of the fracture trace analysis conducted by GEM for the SB-1, Well 7 and Well 14 sites, respectively. As discussed above, locations for siting high yield water wells are generally selected on the basis of intersections of VLF possible fracture zones and/or FTA lineaments. There are thirty locations at which a combination of three or four photolinears or fracture zones intersect within a small margin of error for the location of photolinears and fracture zones. There are 3, 21, and 6 such locations in the survey areas of the SB-1, Well 7, and Well 14 sites, respectively.

The intersections — that is, the numbers of photolinears and fracture zones — for the thirty potential well sites are given in Table 1. In the three survey areas, the intersections are as follows:

- SB-1 site: there are 1 and 2 potential well sites with intersections of 3 and 4 possible fracture zones and/or FTA lineaments, respectively.
- Well 7 site: there are 14 and 7 potential well sites with intersections of 3 and 4 possible fracture zones and/or FTA lineaments, respectively.
- Well 14 site: there are 6 and 0 potential well sites with intersections of 3 and 4 possible fracture zones and/or FTA lineaments, respectively.

The likelihood of obtaining a high yield water well is higher for a site with more intersections than for a site with fewer intersections, assuming the FTA lineaments and VLF fracture zones are equally reliable. On this basis, we suggest that the potential well sites with four intersections — see Table 1— are the better sites for siting high yield water wells, namely as follows:

- SB-1 site: Potential Well Sites II and III.
- Well 7 site: Potential Well Sites IV, XIX, XV, XVI, XVIII, XIX, XXI.
- Well 14 site: there is no Potential Well Site with four intersections, there are six potential well sites with three intersections .

4. CONCLUSIONS

Based on the results of a VLF survey conducted by Hager-Richter Geoscience, Inc. on August 21 to 23, 2012 and a fracture trace analysis conducted by GEM at three Aquarion Water Company wellfield sites, Hager-Richter has identified the following number of locations for siting high yield water wells using four intersections:

- SB-1 site, two locations
- Well 7 site, seven locations
- Well 14 site, no location

However, the Well 14 Site has six location with three intersections.

5. LIMITATIONS ON USE OF REPORT

This report was prepared for the exclusive use of Geosphere Environmental Management, Inc. (Client) in its work at the Aquarion wellfield sites designated as (1) SB-1, (2) Well 7, and (3) Well 14. Any use by any third party of this Report or any information, documents, records, data, interpretations, advice or opinions given to the Client by Hager-Richter Geoscience, Inc. in the performance of its work shall be at such third party's own risk and without any liability to Hager-Richter Geoscience, Inc.

Hager-Richter Geoscience, Inc. has performed its professional services, obtained its findings, and made its conclusions in accordance with generally accepted and customary principles and practices in the field of geophysics. No other warranty, either expressed or implied, is made. Hager-Richter Geoscience, Inc. is not responsible for the independent conclusions, opinions, or recommendations made by others based on the information, geophysical data, and interpretations presented in this report.

This geophysical survey included a limited set of data obtained at the project Area and was conducted with limited knowledge of the Area and its subsurface conditions. Hager-Richter Geoscience, Inc. does not assume responsibility for the accuracy of information that was provided to us by others about the Area and its subsurface conditions. The findings provided by Hager-Richter Geoscience, Inc. are based solely on the information described in this document. The conclusions drawn from this investigation are considered reliable; however, there may exist localized variations in subsurface conditions that have not been completely defined at this time. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

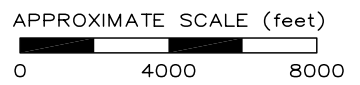
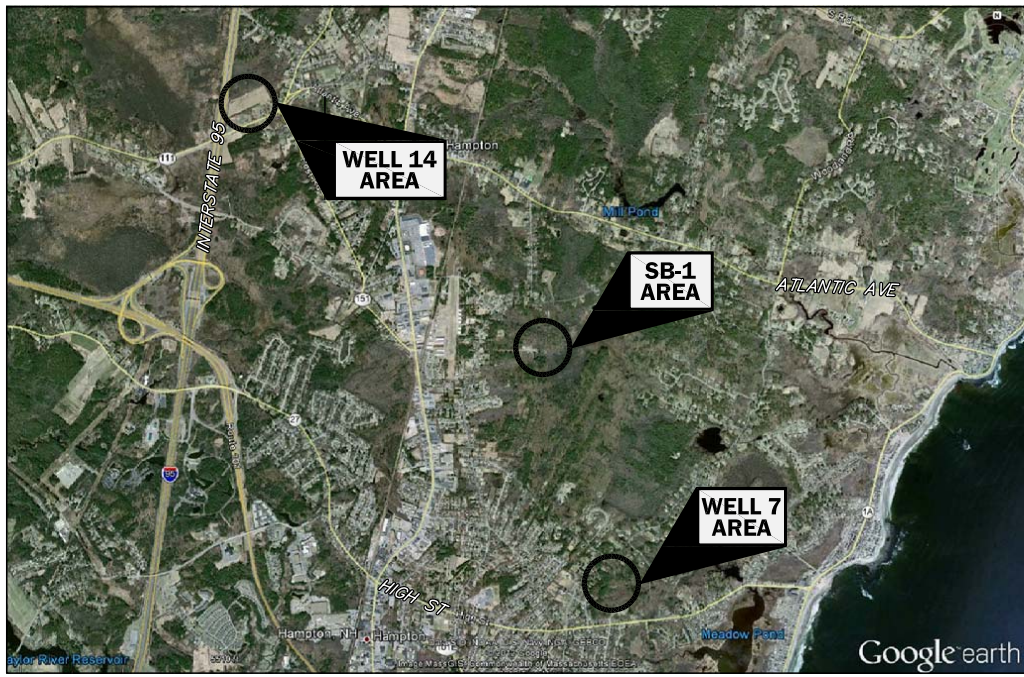


Figure 1
 General Site Location
 Aquarion Well Fields
 Hampton & North Hampton
 New Hampshire

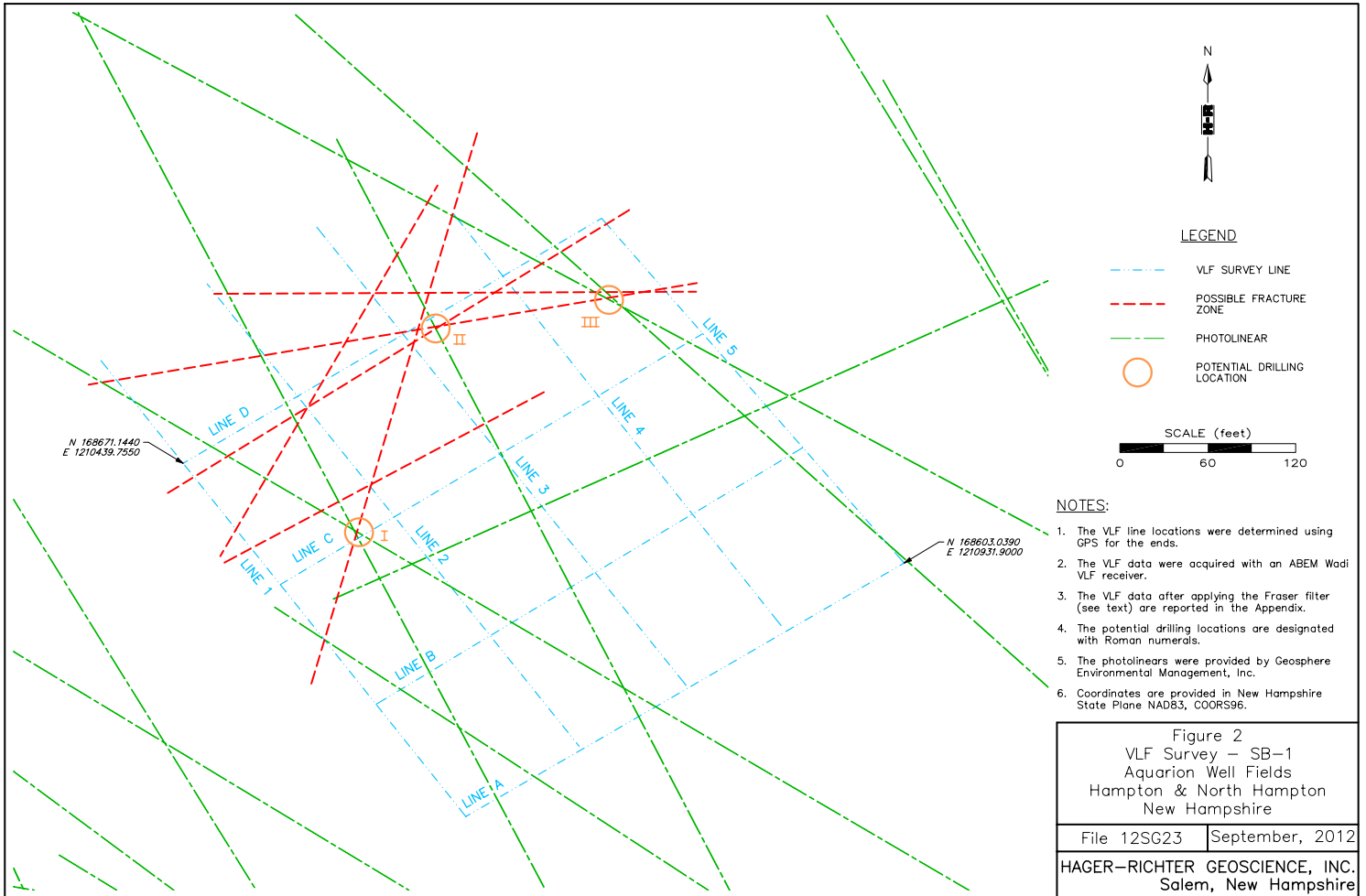
File 12SG23	September, 2012
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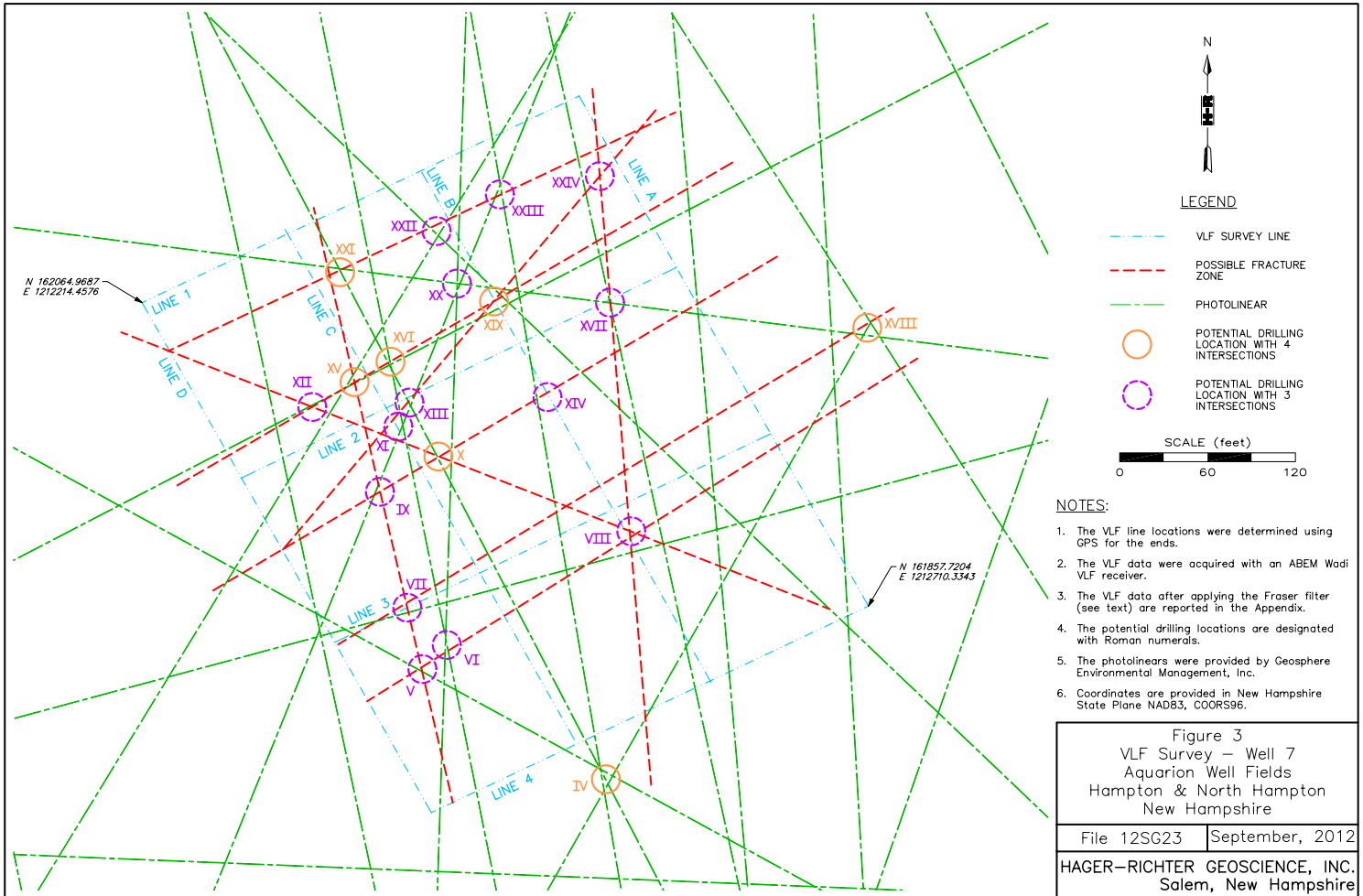
HAGER-RICHTER GEOSCIENCE, INC.
 Salem, New Hampshire

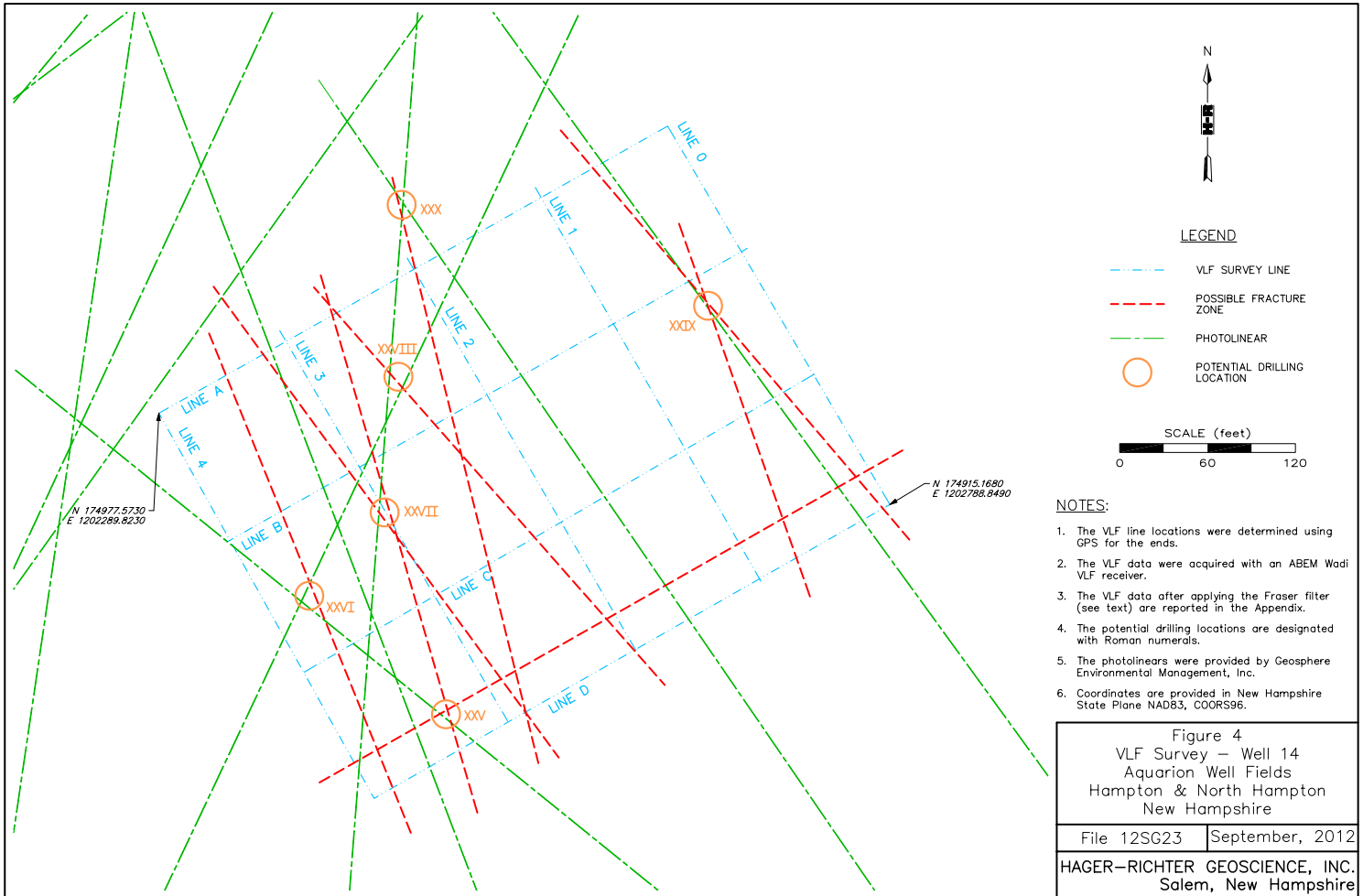
NOTE:

Modified from Google Earth aerial photograph.



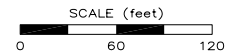






LEGEND

- VLF SURVEY LINE
- POSSIBLE FRACTURE ZONE
- PHOTOLINEAR
- POTENTIAL DRILLING LOCATION



NOTES:

1. The VLF line locations were determined using GPS for the ends.
2. The VLF data were acquired with an ABEM Wadi VLF receiver.
3. The VLF data after applying the Fraser filter (see text) are reported in the Appendix.
4. The potential drilling locations are designated with Roman numerals.
5. The photolinears were provided by Geosphere Environmental Management, Inc.
6. Coordinates are provided in New Hampshire State Plane NAD83, COORS96.

Figure 4
VLF Survey - Well 14
Aquarion Well Fields
Hampton & North Hampton
New Hampshire

File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	

**TABLE 1
 POTENTIAL WELL SITE INTERSECTIONS**

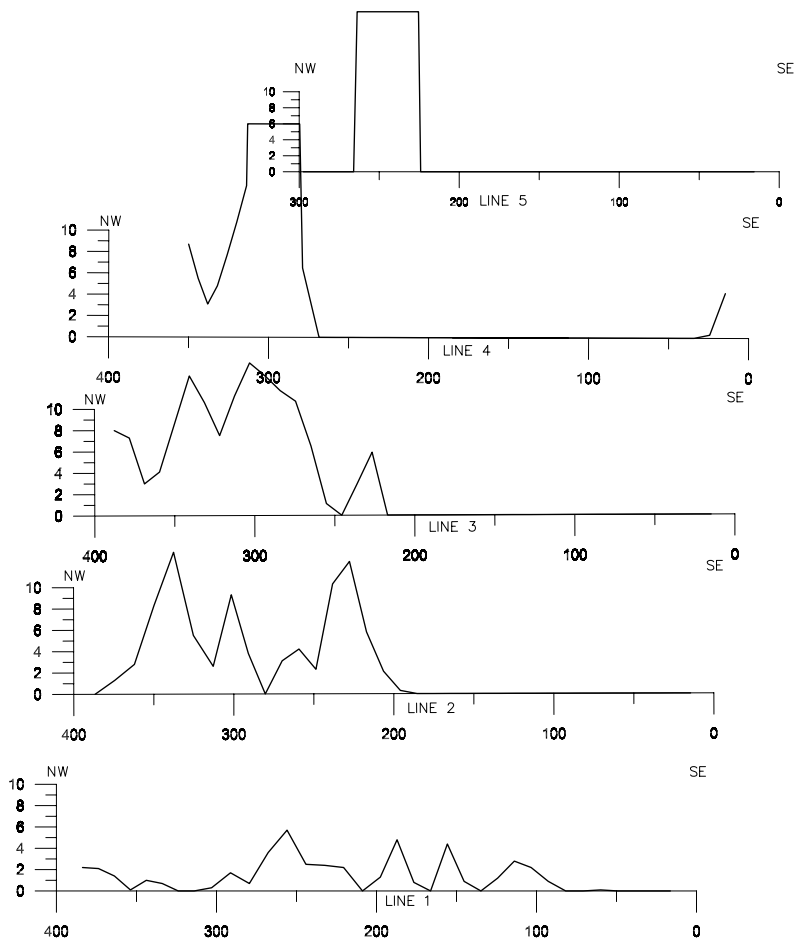
Potential Well Site ID	Number		Potential Well Site ID	Number	
	Photolinears	VLF Possible Fracture Zones		Photolinears	VLF Possible Fracture Zones
SB-1 SITE			WELL 7 SITE CONTINUED		
I	2	1	XVI	3	1
II	1	3	XVII	1	2
III	2	2	XVIII	3	1
WELL 7 SITE			XIX	2	2
IV	4	0	XX	3	0
V	1	2	XXI	2	2
VI	2	1	XXII	2	1
VII	1	2	XXIII	2	1
VIII	0	3	XXIV	1	2
IX	1	2	WELL 14 SITE		
X	2	2	XXV	1	2
XI	1	2	XXVI	2	1
XII	1	2	XXVII	1	2
XIII	2	1	XXVIII	2	1
XIV	2	1	XXIX	1	2
XV	2	2	XXX	2	1

VLF Survey
Aquarion Wellfields
Hampton & North Hampton
New Hampshire
File 12SG23 September, 2012

HAGER-RICHTER
GEOSCIENCE, INC.

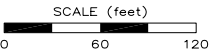
APPENDIX

VLF Data



LEGEND

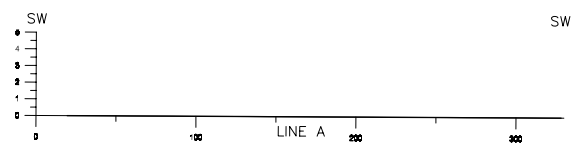
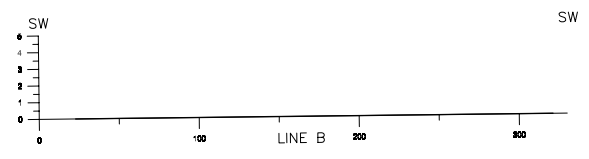
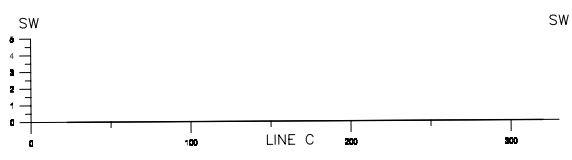
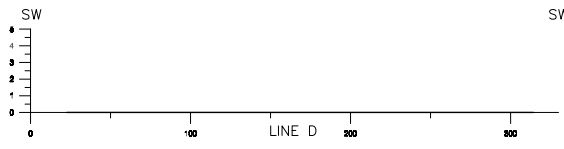
~ POSITIVE REAL COMPONENT




NOTES:

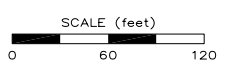
1. The VLF data were acquired with an ABEM Wadi VLF receiver.
2. Values shown are the positive component of the Fraser filtered real component of the VLF data.
3. The lines shown are in the correct relative horizontal position with respect to the northwest - southeast direction, however the spacing between lines has been exaggerated.

Appendix 1 VLF Data Northwest to Southeast - SB-1 Aquarion Well Fields Hampton & North Hampton New Hampshire	
File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	



LEGEND

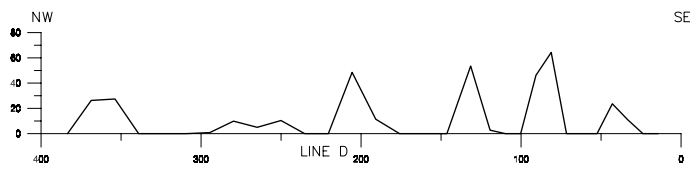
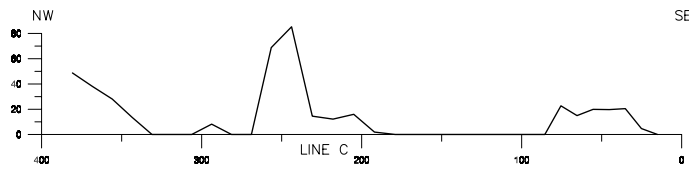
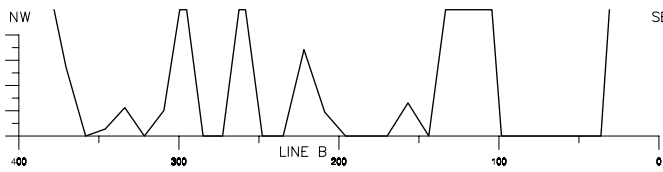
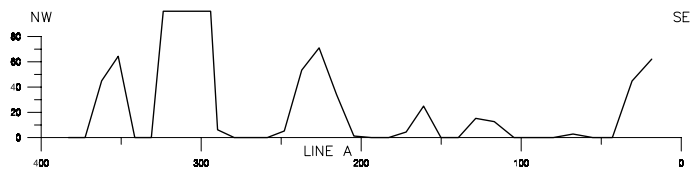
 POSITIVE REAL COMPONENT



NOTES:

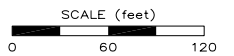
1. The VLF data were acquired with an ABEM Wadi VLF receiver.
2. Values shown are the positive component of the Fraser filtered real component of the VLF data.
3. The lines shown are in the correct relative horizontal position with respect to the southwest - northeast direction, however the spacing between lines has been exaggerated.

Appendix 2 VLF Data Southwest to Northeast - SB-1 Aquarion Well Fields Hampton & North Hampton New Hampshire	
File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	



LEGEND

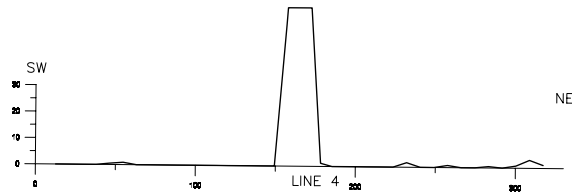
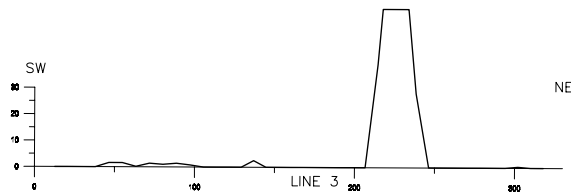
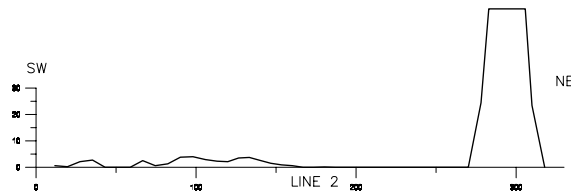
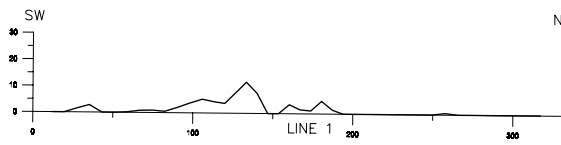
~ POSITIVE REAL COMPONENT




NOTES:

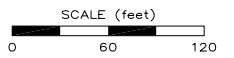
1. The VLF data were acquired with an ABEM Wadi VLF receiver.
2. Values shown are the positive component of the Fraser filtered real component of the VLF data.
3. The lines shown are in the correct relative horizontal position with respect to the northwest - southeast direction, however the spacing between lines has been exaggerated.

Appendix 3 VLF Data Northwest to Southeast - Well 7 Aquarion Well Fields Hampton & North Hampton New Hampshire	
File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	



LEGEND

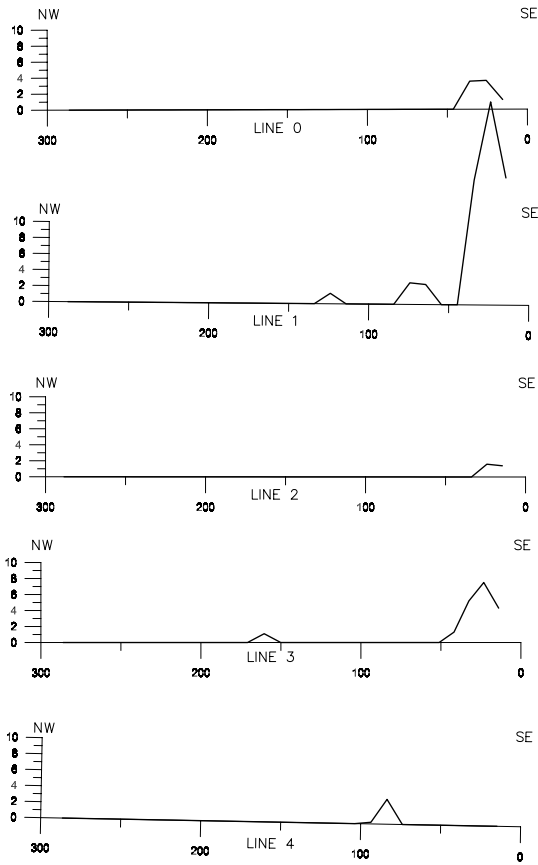
 POSITIVE REAL COMPONENT



NOTES:

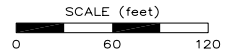
1. The VLF data were acquired with an ABEM Wadi VLF receiver.
2. Values shown are the positive component of the Fraser filtered real component of the VLF data.
3. The lines shown are in the correct relative horizontal position with respect to the southwest - northeast direction, however the spacing between lines has been exaggerated.

Appendix 4 VLF Data Southwest to Northeast - Well 7 Aquarion Well Fields Hampton & North Hampton New Hampshire	
File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	



LEGEND

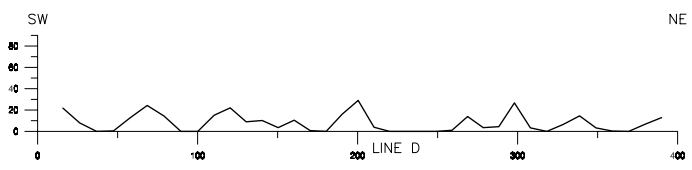
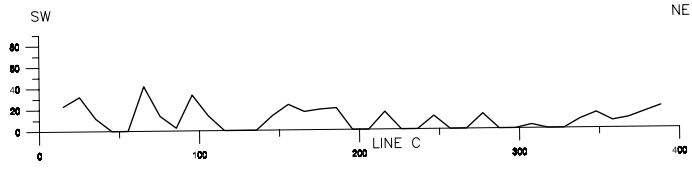
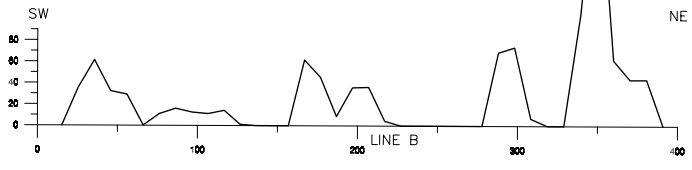
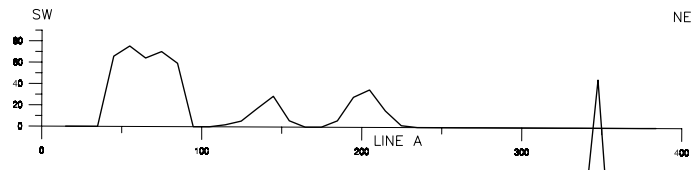
~ POSITIVE REAL COMPONENT



NOTES:

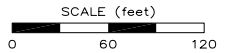
1. The VLF data were acquired with an ABEM Wadi VLF receiver.
2. Values shown are the positive component of the Fraser filtered real component of the VLF data.
3. The lines shown are in the correct relative horizontal position with respect to the northwest - southeast direction, however the spacing between lines has been exaggerated.

Appendix 5 VLF Data Northwest to Southeast - Well 14 Aquarion Well Fields Hampton & North Hampton New Hampshire	
File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	



LEGEND

~ POSITIVE REAL COMPONENT



NOTES:

1. The VLF data were acquired with an ABEM Wadi VLF receiver.
2. Values shown are the positive component of the Fraser filtered real component of the VLF data.
3. The lines shown are in the correct relative horizontal position with respect to the southwest - northeast direction, however the spacing between lines has been exaggerated.

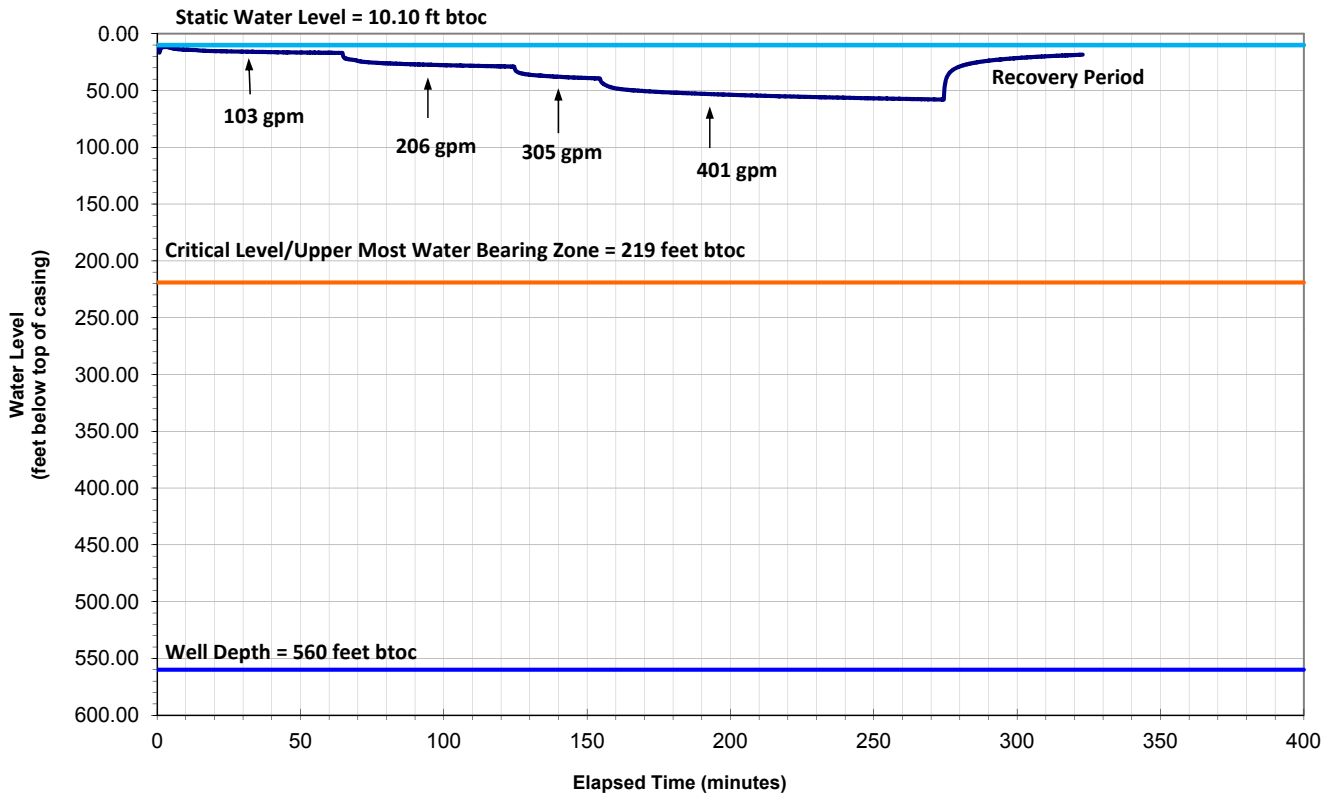
Appendix 6 VLF Data Southwest to Northeast - Well 14 Aquarion Well Fields Hampton & North Hampton New Hampshire	
File 12SG23	September, 2012
HAGER-RICHTER GEOSCIENCE, INC. Salem, New Hampshire	

Appendix D

Well 22 Step Test Graphs – 2012, 2016
Laboratory Water Quality Analysis Reports – 2012, 2016

FIGURE D-1

Aquarion Water Company
Well 22 Step-Drawdown Withdrawal Test - 2012
Water Levels vs Elapsed Time



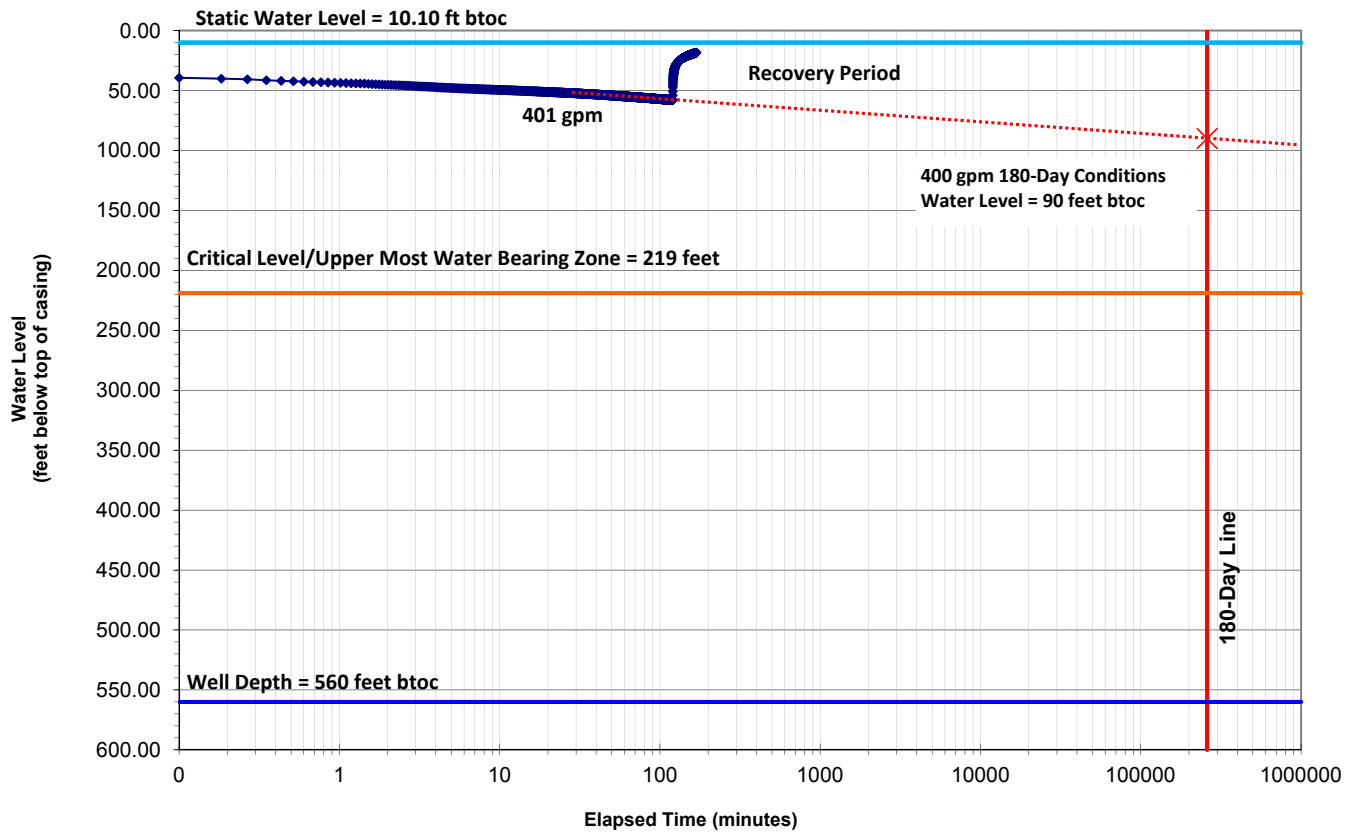
Notes:

btoc = below top of casing, top of casing is 2 feet above ground surface

Step-Drawdown Testing was performed on October 16, 2012 at 4 different withdrawal rates (103 gpm, 206 gpm, 305 gpm, and 401 gpm)

Water level recovered 82.5% from Step 4 (401 gpm) in 48 minutes

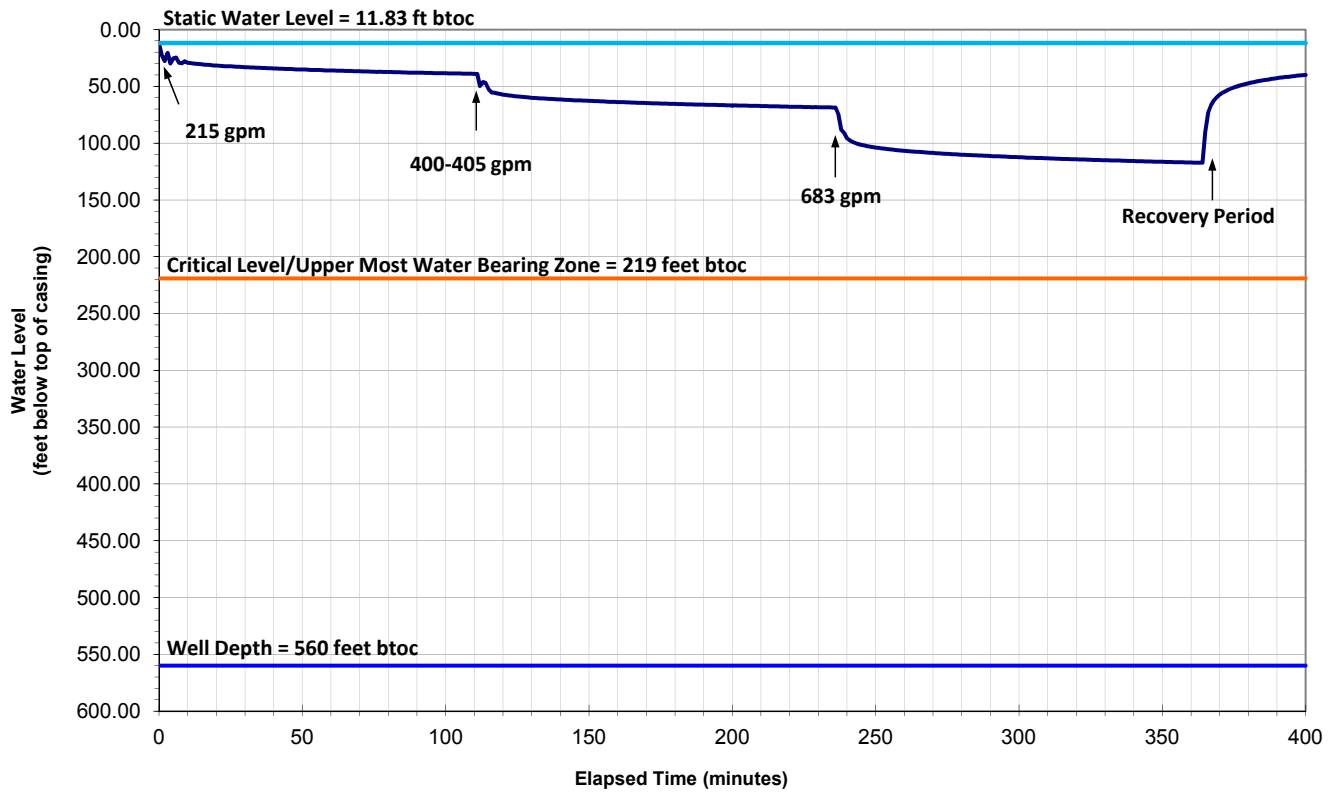
FIGURE D-2
Aquarion Water Company
Well 22 Step-Drawdown Withdrawal Test - 2012
Water Levels vs Elapsed Time (Logarithmic)



Notes:
 btoc = below top of casing, top of casing is 2 feet above ground surface
 Step-Drawdown Testing was performed on October 16, 2012 at 4 different withdrawal rates (103 gpm, 206 gpm, 305 gpm, and 401 gpm)

FIGURE D-3

Aquarion Water Company
Well 22 Step-Drawdown Withdrawal Test - 2016
Water Levels vs Elapsed Time



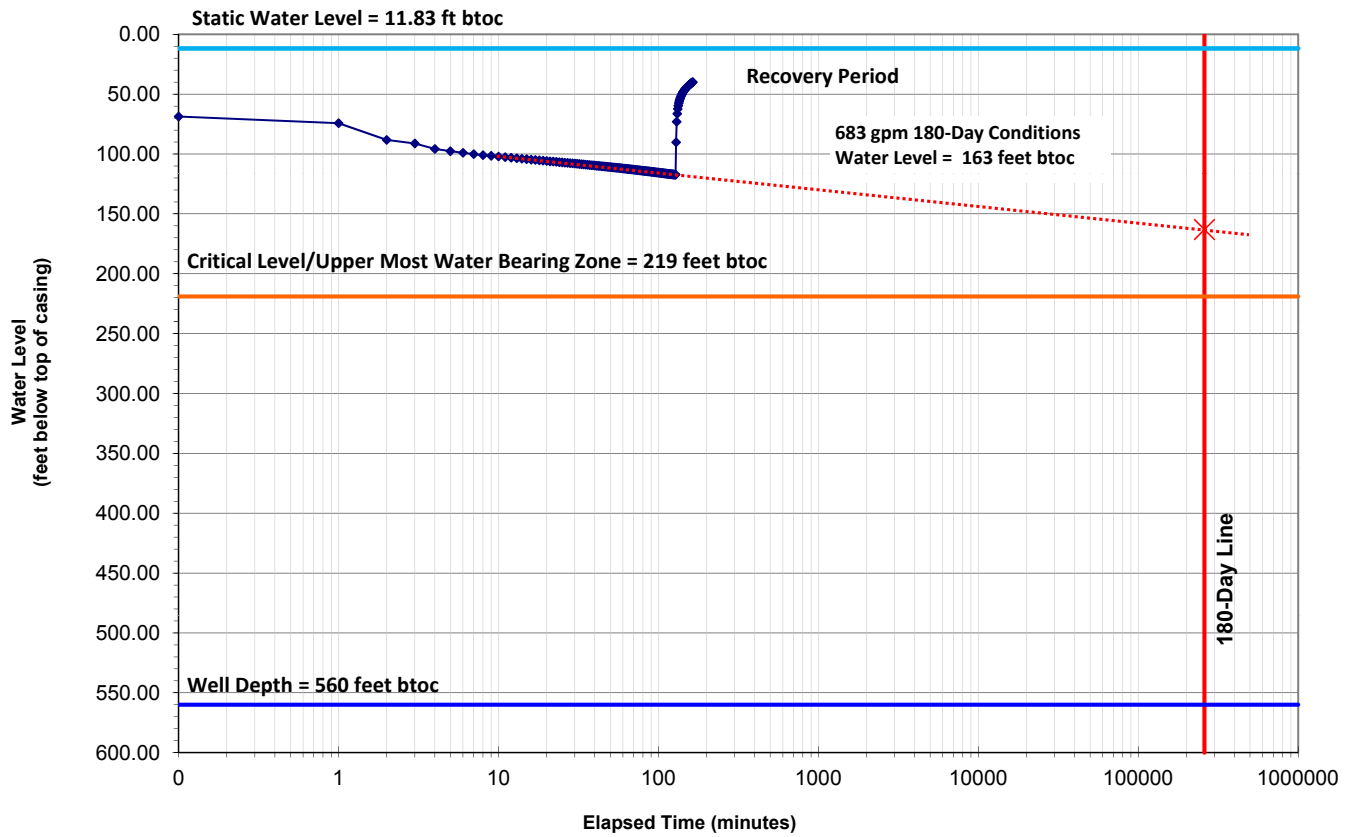
Notes:

btoc = below top of casing, top of casing is 2 feet above ground surface

Step-Drawdown Testing was performed on December 14, 2016 at 3 different withdrawal rates (215 gpm, 400-405 gpm, and 683 gpm)

Water level recovered 87% from Step 3 (683 gpm) in 30 minutes

FIGURE D-4
Aquarion Water Company
Well 22 Step-Drawdown Withdrawal Test - 2016
Water Levels vs Elapsed Time (Logarithmic)



Notes:
 btoc = below top of casing, top of casing is 2 feet above ground surface
 Step-Drawdown Testing was performed on December 14, 2016 at 3 different withdrawal rates (215 gpm, 400-405 gpm, and 683 gpm)

Abby Fopiano
Geosphere Environmental Management Inc.
51 Portsmouth Avenue
Exeter, NH 03833



Subject: Laboratory Report

Eastern Analytical, Inc. ID: 115208

Client Identification: Well 7 Test Well - New Bedrock Source | 12217.1

Date Received: 10/17/2012

Dear Ms. Fopiano :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted

< : "less than" followed by the reporting limit

> : "greater than" followed by the reporting limit

%R : % Recovery


Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,


Lorraine Olashaw, Lab Director

11.15.12
Date

28
of pages (excluding cover letter)



SAMPLE CONDITIONS PAGE

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source / 12217.1**

Temperature upon receipt (°C): 4.5

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
115208.01	Test Well 7A	10/17/12	10/16/12	aqueous		Adheres to Sample Acceptance Policy
115208.02	Trip Blank - VOC's	10/17/12	10/2/12	aqueous		Adheres to Sample Acceptance Policy
115208.03	Trip Blank - Dioxane	10/17/12	10/2/12	aqueous		Adheres to Sample Acceptance Policy
115208.04	Trip Blank - EDB	10/17/12	4/6/12	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitibility, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983*
- 2) Standard Methods for Examination of Water and Wastewater : Inorganics, 19th Edition, 1995; Microbiology, 20th Edition, 1998*
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB*
- 4) Hach Water Analysis Handbook, 2nd edition, 1992*



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Sample ID:	Test Well 7A	Trip Blank - VOC's
Lab Sample ID:	115208.01	115208.02
Matrix:	aqueous	aqueous
Date Sampled:	10/16/12	10/2/12
Date Received:	10/17/12	10/17/12
Units:	ug/l	ug/l
Date of Analysis:	10/18/12	10/18/12
Analyst:	BAM	BAM
Method:	524.2	524.2
Dilution Factor:	1	1
Dichlorodifluoromethane	< 0.5	< 0.5
Chloromethane	< 0.5	< 0.5
Vinyl chloride	< 0.5	< 0.5
Bromomethane	< 0.5	< 0.5
Chloroethane	< 0.5	< 0.5
Trichlorofluoromethane	< 0.5	< 0.5
Diethyl Ether	< 5	< 5
Acetone	< 10	< 10
1,1-Dichloroethene	< 0.5	< 0.5
tert-Butyl Alcohol (TBA)	< 30	< 30
Methylene chloride	< 0.5	< 0.5
Carbon disulfide	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 0.5	< 0.5
Ethyl-t-butyl ether(ETBE)	< 0.5	< 0.5
Isopropyl ether(DIPE)	< 0.5	< 0.5
tert-amyl methyl ether(TAME)	< 0.5	< 0.5
trans-1,2-Dichloroethene	< 0.5	< 0.5
Vinyl acetate	< 10	< 10
1,1-Dichloroethane	< 0.5	< 0.5
2,2-Dichloropropane	< 0.5	< 0.5
cis-1,2-Dichloroethene	< 0.5	< 0.5
2-Butanone(MEK)	< 5	< 5
Bromochloromethane	< 0.5	< 0.5
Tetrahydrofuran(THF)	< 5	< 5
Chloroform	< 0.5	< 0.5
1,1,1-Trichloroethane	< 0.5	< 0.5
Carbon tetrachloride	< 0.5	< 0.5
1,1-Dichloropropene	< 0.5	< 0.5
Benzene	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5
1,2-Dichloropropane	< 0.5	< 0.5
Dibromomethane	< 0.5	< 0.5
Bromodichloromethane	< 0.5	< 0.5
4-Methyl-2-pentanone(MIBK)	< 5	< 5
cis-1,3-Dichloropropene	< 0.3	< 0.3
Toluene	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.3	< 0.3
1,1,2-Trichloroethane	< 0.5	< 0.5
2-Hexanone	< 5	< 5
Tetrachloroethene	< 0.5	< 0.5
1,3-Dichloropropane	< 0.5	< 0.5
Dibromochloromethane	< 0.5	< 0.5
1,2-Dibromoethane(EDB)	< 0.5	< 0.5
Chlorobenzene	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	< 0.5	< 0.5
Ethylbenzene	< 0.5	< 0.5



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Sample ID:	Test Well 7A	Trip Blank - VOC's
Lab Sample ID:	115208.01	115208.02
Matrix:	aqueous	aqueous
Date Sampled:	10/16/12	10/2/12
Date Received:	10/17/12	10/17/12
Units:	ug/l	ug/l
Date of Analysis:	10/18/12	10/18/12
Analyst:	BAM	BAM
Method:	524.2	524.2
Dilution Factor:	1	1
mp-Xylene	< 0.5	< 0.5
o-Xylene	< 0.5	< 0.5
Styrene	< 0.5	< 0.5
Bromoform	< 0.5	< 0.5
IsoPropylbenzene	< 0.5	< 0.5
Bromobenzene	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5
1,2,3-Trichloropropane	< 0.5	< 0.5
n-Propylbenzene	< 0.5	< 0.5
2-Chlorotoluene	< 0.5	< 0.5
4-Chlorotoluene	< 0.5	< 0.5
1,3,5-Trimethylbenzene	< 0.5	< 0.5
tert-Butylbenzene	< 0.5	< 0.5
1,2,4-Trimethylbenzene	< 0.5	< 0.5
sec-Butylbenzene	< 0.5	< 0.5
1,3-Dichlorobenzene	< 0.5	< 0.5
p-Isopropyltoluene	< 0.5	< 0.5
1,4-Dichlorobenzene	< 0.5	< 0.5
1,2-Dichlorobenzene	< 0.5	< 0.5
n-Butylbenzene	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane	< 0.5	< 0.5
1,3,5-Trichlorobenzene	< 0.5	< 0.5
1,2,4-Trichlorobenzene	< 0.5	< 0.5
Hexachlorobutadiene	< 0.5	< 0.5
Naphthalene	< 0.5	< 0.5
1,2,3-Trichlorobenzene	< 0.5	< 0.5
4-Bromofluorobenzene (surr)	98 %R	99 %R
1,2-Dichlorobenzene-d4 (surr)	104 %R	106 %R



QC REPORT

EAI ID#: 115208

Client: Geosphere Environmental Management Inc.

Client Designation: Well 7 Test Well - New Bedrock Source | 12217.1

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Dichlorodifluoromethane	< 0.5	7.1 (71 %R)	7.1 (71 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Chloromethane	< 0.5	* 6.5 (65 %R)	* 6.5 (65 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Vinyl chloride	< 0.5	9.1 (91 %R)	9.1 (91 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Bromomethane	< 0.5	7.0 (70 %R)	7.9 (79 %R) (12 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Chloroethane	< 0.5	8.5 (85 %R)	8.4 (84 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Trichlorofluoromethane	< 0.5	10 (100 %R)	10 (102 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Diethyl Ether	< 5	8 (84 %R)	8 (83 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Acetone	< 10	< 10 (82 %R)	< 10 (80 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1-Dichloroethene	< 0.5	8.0 (80 %R)	8.2 (82 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
tert-Butyl Alcohol (TBA)	< 30	40 (87 %R)	40 (85 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Methylene chloride	< 0.5	8.8 (88 %R)	8.6 (86 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Carbon disulfide	< 2	8 (79 %R)	8 (81 %R) (3 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Methyl-t-butyl ether(MTBE)	< 0.5	9.1 (91 %R)	9.3 (93 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Ethyl-t-butyl ether(ETBE)	< 0.5	8.7 (87 %R)	8.8 (88 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Isopropyl ether(DIPE)	< 0.5	7.6 (76 %R)	7.6 (76 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
tert-amyl methyl ether(TAME)	< 0.5	9.0 (90 %R)	9.0 (90 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
trans-1,2-Dichloroethene	< 0.5	8.3 (83 %R)	8.3 (83 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Vinyl acetate	< 10	< 10 (71 %R)	< 10 (72 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1-Dichloroethane	< 0.5	8.3 (83 %R)	8.4 (84 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
2,2-Dichloropropane	< 0.5	7.3 (73 %R)	7.5 (75 %R) (3 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
cis-1,2-Dichloroethene	< 0.5	9.2 (92 %R)	9.2 (92 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
2-Butanone(MEK)	< 5	7 (70 %R)	* 7 (69 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Bromochloromethane	< 0.5	9.0 (90 %R)	9.1 (91 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Tetrahydrofuran(THF)	< 5	* 7 (69 %R)	* 7 (68 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Chloroform	< 0.5	9.2 (92 %R)	9.3 (93 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1,1-Trichloroethane	< 0.5	9.3 (93 %R)	9.3 (93 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Carbon tetrachloride	< 0.5	9.6 (96 %R)	9.7 (97 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1-Dichloropropene	< 0.5	8.3 (83 %R)	8.5 (85 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Benzene	< 0.5	8.4 (84 %R)	8.4 (84 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2-Dichloroethane	< 0.5	9.2 (92 %R)	9.1 (91 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Trichloroethene	< 0.5	8.4 (84 %R)	8.4 (84 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2-Dichloropropane	< 0.5	8.1 (81 %R)	8.1 (81 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Dibromomethane	< 0.5	9.1 (91 %R)	9.1 (91 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Bromodichloromethane	< 0.5	9.3 (93 %R)	9.2 (92 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
4-Methyl-2-pentanone(MIBK)	< 5	8 (81 %R)	8 (77 %R) (5 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
cis-1,3-Dichloropropene	< 0.3	8.8 (88 %R)	8.9 (89 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Toluene	< 0.5	8.8 (88 %R)	8.8 (88 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
trans-1,3-Dichloropropene	< 0.3	9.4 (94 %R)	9.4 (94 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1,2-Trichloroethane	< 0.5	9.1 (91 %R)	9.0 (90 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
2-Hexanone	< 5	8 (82 %R)	8 (79 %R) (4 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Tetrachloroethene	< 0.5	11 (108 %R)	11 (106 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,3-Dichloropropane	< 0.5	9.2 (92 %R)	9.0 (90 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Dibromochloromethane	< 0.5	9.9 (99 %R)	10 (100 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2-Dibromoethane(EDB)	< 0.5	9.4 (94 %R)	9.2 (92 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Chlorobenzene	< 0.5	8.9 (89 %R)	8.9 (89 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1,1,2-Tetrachloroethane	< 0.5	10 (102 %R)	10 (101 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2



QC REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Ethylbenzene	< 0.5	9.1 (91 %R)	9.1 (91 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
mp-Xylene	< 0.5	18 (91 %R)	18 (91 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
o-Xylene	< 0.5	9.3 (93 %R)	9.3 (93 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Styrene	< 0.5	9.8 (98 %R)	9.7 (97 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Bromoform	< 0.5	11 (107 %R)	11 (105 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
IsoPropylbenzene	< 0.5	10 (102 %R)	10 (103 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Bromobenzene	< 0.5	9.6 (96 %R)	9.7 (97 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,1,2,2-Tetrachloroethane	< 0.5	8.6 (86 %R)	8.7 (87 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2,3-Trichloropropane	< 0.5	9.6 (96 %R)	9.6 (96 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
n-Propylbenzene	< 0.5	9.2 (92 %R)	9.2 (92 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
2-Chlorotoluene	< 0.5	9.1 (91 %R)	9.2 (92 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
4-Chlorotoluene	< 0.5	9.3 (93 %R)	9.3 (93 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,3,5-Trimethylbenzene	< 0.5	9.5 (95 %R)	9.9 (99 %R) (4 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
tert-Butylbenzene	< 0.5	9.6 (96 %R)	9.7 (97 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2,4-Trimethylbenzene	< 0.5	9.5 (95 %R)	9.8 (98 %R) (3 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
sec-Butylbenzene	< 0.5	9.3 (93 %R)	9.3 (93 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,3-Dichlorobenzene	< 0.5	9.6 (96 %R)	9.5 (95 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
p-Isopropyltoluene	< 0.5	9.9 (99 %R)	10 (100 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,4-Dichlorobenzene	< 0.5	9.6 (96 %R)	9.4 (94 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2-Dichlorobenzene	< 0.5	9.5 (95 %R)	9.4 (94 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
n-Butylbenzene	< 0.5	9.2 (92 %R)	9.3 (93 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2-Dibromo-3-chloropropane	< 0.5	10 (104 %R)	10 (102 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,3,5-Trichlorobenzene	< 0.5	10 (100 %R)	10 (100 %R) (0 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2,4-Trichlorobenzene	< 0.5	10 (100 %R)	10 (102 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Hexachlorobutadiene	< 0.5	9.2 (92 %R)	9.3 (93 %R) (1 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
Naphthalene	< 0.5	7.9 (79 %R)	8.1 (81 %R) (3 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
1,2,3-Trichlorobenzene	< 0.5	9.9 (99 %R)	10 (101 %R) (2 RPD)	10/18/2012	ug/l	70 - 130	30	524.2
4-Bromofluorobenzene (surr)	99 %R	105 %R	103 %R	10/18/2012	% Rec	70 - 130		524.2
1,2-Dichlorobenzene-d4 (surr)	103 %R	108 %R	106 %R	10/18/2012	% Rec	70 - 130		524.2

Samples were extracted and analyzed within holding time limits.

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

Sample surrogate recoveries met the above stated criteria.

The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.

There were no exceptions in the analyses, unless noted.

*! Flagged analyte recoveries deviated from the QA/QC limits. Any impact to data is addressed below.



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Sample ID:	Test Well 7A	Trip Blank - Dioxane
Lab Sample ID:	115208.01	115208.03
Matrix:	aqueous	aqueous
Date Sampled:	10/16/12	10/2/12
Date Received:	10/17/12	10/17/12
Units:	ug/l	ug/l
Date of Analysis:	10/19/12	10/19/12
Analyst:	VG	VG
Method:	8260B SIM	8260B SIM
Dilution Factor:	1	1
1,4-Dioxane	< 0.25	< 0.25
4-Bromofluorobenzene (surr)	88 %R	89 %R
Toluene-d8 (surr)	89 %R	100 %R



QC REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
1,4-Dioxane	< 0.25	5.1 (102 %R)	5.2 (105 %R) (3 RPD)	10/19/2012	ug/l	70 - 130	20	8260B
4-Bromofluorobenzene (surr)	88 %R	89 %R	88 %R	10/19/2012	% Rec	70 - 130	50	8260B
Toluene-d8 (surr)	90 %R	89 %R	100 %R	10/19/2012	% Rec	70 - 130	50	8260B

Samples were extracted and analyzed within holding time limits.
 Instrumentation was calibrated in accordance with the method requirements.
 The method blanks were free of contamination at the reporting limits.
 Sample surrogate recoveries met the above stated criteria.
 The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
 There were no exceptions in the analyses, unless noted.
 *!/ Flagged analyte recoveries deviated from the QA/QC limits. Any impact to data is addressed below .



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Sample ID:	Test Well 7A	Trip Blank - EDB
Lab Sample ID:	115208.01	115208.04
Matrix:	aqueous	aqueous
Date Sampled:	10/16/12	4/6/12
Date Received:	10/17/12	10/17/12
Units:	ug/l	ug/l
Date of Extraction/Prep:	10/22/12	10/22/12
Date of Analysis:	10/22/12	10/22/12
Analyst:	JMR	JMR
Method:	8011/504	8011/504
Dilution Factor:	1	1
1,2-Dibromoethane(EDB)	< 0.02	< 0.02
Dibromochloropropane (DBCP)	< 0.02	< 0.02
1,1,1,2-Tetrachloroethane (surr)	114 %R	110 %R



QC REPORT

EAI ID#: 115208

Client: Geosphere Environmental Management Inc.

Batch ID: 634865-03702/A102212EDBDB1

Client Designation: Well 7 Test Well - New Bedrock Source | 12217.1

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
1,2-Dibromoethane(EDB)	< 0.02	0.11 (105 %R)	0.11 (108 %R) (3 RPD)	10/22/2012	ug/l	70 - 130	20	8011/504
Dibromochloropropane (DBCP)	< 0.02	0.11 (106 %R)	0.11 (109 %R) (3 RPD)	10/22/2012	ug/l	70 - 130	20	8011/504
1,1,1,2-Tetrachloroethane (surr)	112 %R	110 %R	113 %R	10/22/2012	% Rec	65 - 135	20	8011/504

Samples were extracted and analyzed within holding time limits.
 Instrumentation was calibrated in accordance with the method requirements.
 The method blanks were free of contamination at the reporting limits.
 Sample surrogate recoveries met the above stated criteria.
 The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
 There were no exceptions in the analyses, unless noted.
 *! Flagged analyte recoveries deviated from the QA/QC limits.



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Sample ID: Test Well 7A

Lab Sample ID: 115208.01

Matrix: aqueous

Date Sampled: 10/16/12

Date Received: 10/17/12

Solids Dissolved 270

Fluoride 0.55

Sulfate 29

Chloride 64

Nitrite-N < 0.5

Nitrate-N < 0.5

Alkalinity Total (CaCO₃) 100

Cyanide Total < 0.02

pH 8.2

Specific Conductance 470

Units	Analysis		Method	Analyst
	Date	Time		
mg/L	10/18/12	13:45	2540C	SCW
mg/L	10/23/12	10:11	300.0	KD
mg/L	10/23/12	10:11	300.0	KD
mg/L	10/18/12	9:15	4500CIE	KD
mg/L	10/18/12	9:15	353.2	KD
mg/L	10/18/12	9:15	353.2	KD
mg/L	10/18/12	13:46	2320B	KJP
mg/L	10/19/12	10:45	4500CNE	KD
SU	10/17/12	17:05	4500H+B	NZ
uS/cm	10/18/12	10:13	120.1	BML



QC REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source / 12217.1**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Solids Dissolved	< 5	1000 (101 %R)		NA	mg/L 10/18/12	85 - 115		2540C
Fluoride	< 0.1	2.0 (101 %R)	2.1 (105 %R) (4 RPD)	mg/L	10/23/12	90 - 110	20	300.0
Sulfate	< 1	21 (103 %R)	21 (106 %R) (3 RPD)	mg/L	10/23/12	90 - 110	20	300.0
Chloride	< 1	26 (105 %R)	25 (101 %R) (4 RPD)	mg/L	10/18/12	90 - 110	20	4500CIE
Nitrite-N	< 0.5	5.1 (103 %R)	5.0 (100 %R) (3 RPD)	mg/L	10/18/12	90 - 110	20	353.2
Nitrate-N	< 0.5	4.9 (98 %R)	4.7 (95 %R) (3 RPD)	mg/L	10/18/12	90 - 110	20	353.2
Alkalinity Total (CaCO3)	< 1	10 (102 %R)	10 (104 %R) (2 RPD)	mg/L	10/18/12	85 - 115	20	2320B
Cyanide Total	< 0.02	0.25 (98 %R)	0.23 (93 %R) (5 RPD)	mg/L	10/19/12	85 - 115	20	4500CNE
pH		6.0 (101 %R)	6.06 (101 %R) (0 RPD)	SU	10/17/12	5.95 - 6.07	10	4500H+B
Specific Conductance	< 1	1400 (100 %R)	1400 (100 %R) (0 RPD)	uS/cm	10/18/12	90 - 110	20	120.1

Samples were analyzed within holding times unless noted on the sample results page.
 Instrumentation was calibrated in accordance with the method requirements.
 The method blanks were free of contamination at the reporting limits.
 The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
 Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
 *! Flagged analyte recoveries deviated from the QA/QC limits.



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source / 12217.1**

Sample ID: Test Well 7A

Lab Sample ID: 115208.01

Matrix: aqueous

Date Sampled: 10/16/12

Date Received: 10/17/12

Parameter	Concentration	Units	Date of Analysis	Method
Gross Alpha	2.5	pCi/L	10/30/12	900
Uranium	0.2	ug/L	10/22/12	200.8
Uranium*	0.1	pCi/L	11/15/12	See Ref.
Adj. Gross Alpha**	2.4	pCi/L	11/15/12	See Ref.

Gross Alpha analyzed by a subcontracted lab, entire lab report enclosed.

*Uranium conversion factor = 0.67 pCi/ug

**Adj. (Compliance) Gross Alpha = Gross Alpha (pCi/L) - Uranium (pCi/L)

ND = None detected

Gross Alpha MCL = 15 pCi/L

References: 40 CFR parts 9, 141 and 142 - National Primary Drinking Water Regulations; Radionuclides; Final Rule, December 2000. Pages 76717 and 76725 (Table 1-8, footnote 12).



LABORATORY REPORT

EAI ID#: 115208

Client: **Geosphere Environmental Management Inc.**

Client Designation: **Well 7 Test Well - New Bedrock Source | 12217.1**

Sample ID: Test Well 7A

Lab Sample ID: 115208.01

Matrix: aqueous

Date Sampled: 10/16/12

Date Received: 10/17/12

		Analytical Matrix	Units	Date of Analysis	Method	Analyst
Aluminum	< 0.05	AqTot	mg/L	10/18/12	200.8	DS
Antimony	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Arsenic	0.006	AqTot	mg/L	10/18/12	200.8	DS
Barium	0.007	AqTot	mg/L	10/18/12	200.8	DS
Beryllium	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Cadmium	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Chromium	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Copper	0.001	AqTot	mg/L	10/18/12	200.8	DS
Iron	< 0.05	AqTot	mg/L	10/18/12	200.8	DS
Lead	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Manganese	0.016	AqTot	mg/L	10/18/12	200.8	DS
Mercury	0.0003	AqTot	mg/L	10/18/12	200.8	DS
Nickel	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Selenium	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Silver	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Thallium	< 0.001	AqTot	mg/L	10/18/12	200.8	DS
Zinc	0.012	AqTot	mg/L	10/18/12	200.8	DS
Uranium	0.2	AqTot	ug/l	10/22/12	200.8	DS



QC REPORT

EAI ID#: 115208

Client: Geosphere Environmental Management Inc.

Client Designation: Well 7 Test Well - New Bedrock Source | 12217.1

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Aluminum	< 0.05	11 (100 %R)		mg/L	10/18/12	85 - 115	20	200.8
Antimony	< 0.001	0.95 (95 %R)		mg/L	10/18/12	85 - 115	20	200.8
Arsenic	< 0.001	0.94 (94 %R)		mg/L	10/18/12	85 - 115	20	200.8
Barium	< 0.001	0.94 (94 %R)		mg/L	10/18/12	85 - 115	20	200.8
Beryllium	< 0.001	1.0 (101 %R)		mg/L	10/18/12	85 - 115	20	200.8
Cadmium	< 0.001	0.93 (93 %R)		mg/L	10/18/12	85 - 115	20	200.8
Chromium	< 0.001	0.95 (95 %R)		mg/L	10/18/12	85 - 115	20	200.8
Copper	< 0.001	0.87 (87 %R)		mg/L	10/18/12	85 - 115	20	200.8
Iron	< 0.05	11 (100 %R)		mg/L	10/18/12	85 - 115	20	200.8
Lead	< 0.001	0.93 (93 %R)		mg/L	10/18/12	85 - 115	20	200.8
Manganese	< 0.005	0.96 (96 %R)		mg/L	10/18/12	85 - 115	20	200.8
Mercury	< 0.0001	0.0010 (100 %R)		mg/L	10/18/12	85 - 115	20	200.8
Nickel	< 0.001	0.90 (90 %R)		mg/L	10/18/12	85 - 115	20	200.8
Selenium	< 0.001	0.90 (90 %R)		mg/L	10/18/12	85 - 115	20	200.8
Silver	< 0.001	0.10 (103 %R)		mg/L	10/18/12	85 - 115	20	200.8
Thallium	< 0.001	0.95 (95 %R)		mg/L	10/18/12	85 - 115	20	200.8
Uranium	< 0.0001	0.010 (104 %R)		ug/l	10/22/12	85 - 115	20	200.8
Zinc	< 0.005	0.87 (87 %R)		mg/L	10/18/12	85 - 115	20	200.8

Samples were analyzed within holding times unless noted on the sample results page.
 Instrumentation was calibrated in accordance with the method requirements.
 The method blanks were free of contamination at the reporting limits.
 The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
 Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
 *! Flagged analyte recoveries deviated from the QA/QC limits.



QC REPORT

EAI ID#: 115208

Client: Geosphere Environmental Management Inc.

Client Designation: Well 7 Test Well - New Bedrock Source | 12217.1

Parameter Name	MS/MSD Parent ID	MS/MSD Parent	Matrix Spike	MSD	Date of Units Analysis	Limits	RPD	Method
Aluminum	115169.01	0.06	10 (92 %R)	10 (93 %R) (1 RPD)	mg/L 10/18/12	70-130	20	200.8
Antimony	115169.01	< 0.0005	0.92 (91 %R)	0.91 (91 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Arsenic	115169.01	0.0012	0.89 (89 %R)	0.89 (89 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Barium	115169.01	0.015	0.92 (91 %R)	0.92 (91 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Beryllium	115169.01	< 0.0005	0.75 (75 %R)	0.75 (75 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Cadmium	115169.01	< 0.0001	0.87 (87 %R)	0.86 (86 %R) (1 RPD)	mg/L 10/18/12	70-130	20	200.8
Chromium	115169.01	0.0017	0.86 (86 %R)	0.87 (87 %R) (1 RPD)	mg/L 10/18/12	70-130	20	200.8
Copper	115169.01	0.0088	0.76 (75 %R)	0.76 (75 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Iron	115169.01	0.11	9.6 (85 %R)	9.7 (87 %R) (2 RPD)	mg/L 10/18/12	70-130	20	200.8
Lead	115169.01	0.0003	0.84 (84 %R)	0.84 (84 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Manganese	115169.01	0.080	0.91 (83 %R)	0.91 (83 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Mercury	115169.01	< 0.0001	0.0009 (94 %R)	0.0010 (95 %R) (1 RPD)	mg/L 10/18/12	70-130	20	200.8
Nickel	115169.01	0.0056	0.77 (76 %R)	0.78 (77 %R) (1 RPD)	mg/L 10/18/12	70-130	20	200.8
Selenium	115169.01	0.002	0.81 (81 %R)	0.79 (79 %R) (3 RPD)	mg/L 10/18/12	70-130	20	200.8
Silver	115169.01	< 0.0001	0.77 (77 %R)	0.77 (77 %R) (0 RPD)	mg/L 10/18/12	70-130	20	200.8
Thallium	115169.01	< 0.0005	0.88 (88 %R)	0.86 (86 %R) (2 RPD)	mg/L 10/18/12	70-130	20	200.8
Uranium	115168.01	9.5	0.12 (112 %R)	0.11 (101 %R) (10 RPD)	ug/l 10/22/12	70-130	20	200.8
Zinc	115169.01	0.019	0.74 (72 %R)	0.75 (73 %R) (1 RPD)	mg/L 10/18/12	70-130	20	200.8

Samples were analyzed within holding times unless noted on the sample results page.

Instrumentation was calibrated in accordance with the method requirements.

The method blanks were free of contamination at the reporting limits.

The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.

Exceptions to the above statements are flagged or noted above or on the QC Narrative page.

*! Flagged analyte recoveries deviated from the QA/QC limits.

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Eastern Analytical Inc.
25 Chenell Drive
Concord, NH 03301

November 15, 2012
Work Order: 1212394

Laboratory Report

Project Name		115208						
Parameters	Units	Results *	Method	PQL	MDL	Prepared	Analyzed	Dilution
Sample Description		Test Well 7A						
Matrix		Drinking Water						
SAL Sample Number		1212394-01						
Date/Time Collected		10/16/12 13:15						
Collected by		Client						
Date/Time Received		10/23/12 10:30						
Radiochemistry								
Gross Alpha (Incl. Uranium)	pCi/L	2.5 ± 1.9 U	SM 7110B	2.5	2.5	10/25/12 09:40	10/30/12 15:35	1
Gross Beta	pCi/L	3.5 ± 2 U	SM 7110B	3.5	3.5	11/02/12 10:41	11/07/12 16:41	1
Radium-226	pCi/L	0.1 ± 0.12 U	EPA 903.1	0.1	0.1	10/25/12 12:11	11/12/12 11:45	1
Radium-228	pCi/L	0.5 ± 0.3	EPA Ra-05	0.5	0.5	10/25/12 12:11	11/06/12 12:27	1
Ra226 + Ra228, Combined	pCi/L	0.6 U	Calculation	0.6	0.6	10/25/12 12:11	11/12/12 11:45	1

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Eastern Analytical Inc.
25 Chenell Drive
Concord, NH 03301

November 15, 2012
Work Order: 1212394

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limits and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below.

Questions regarding this report should be directed to :

Kathryn Nordmark
Telephone (813) 855-1844 FAX (813) 855-2218
Kathryn@southernanalyticalabs.com

or to Client Services (clientservices@southernanalyticalabs.com).

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

12/23/94

EAI SRB# 115208

Sample ID Date Sampled Matrix aParameters Sample Notes

D1 Test Well 7A 10/16/2012 aqueous Radium 226 & Radium 228 Combined Subcontract Southern Analytical, Inc.

Test Well 7A 10/16/2012 aqueous Gross Alpha Beta Subcontract Southern Analytical, Inc.

3-12 PHW03

EAI SRB# 115208 Project State: NH Std.

Project ID: 0

Results Needed by: Preferred date
QC Deliverables
 A A+ B B+ C P.

Notes about project:
 Email pdf of results and invoice to
 customerservice@eailabs.com.

Company Southern Analytical
 Address 110 Bayview BLVD
 Address Oldsmar, FL 34677
 Account #
 Phone # 813-855-1844
 Fax Number 813-855-2218

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591

Eastern Analytical Inc. PO Number: 39543

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by: [Signature]
 Relinquished by: [Signature] Date/Time: 10/18/12 1530 Received by: [Signature]
 Relinquished by: [Signature] Date/Time: 10/18/12 1030 Received by: [Signature]

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Eastern Analytical Inc.
25 Chenell Drive
Concord, NH 03301

November 15, 2012
Work Order: 1212394

Workorder Quality Control Data Results

Radiochemistry - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ22512 - Gross Alpha by Evaporation, SM 7110 B										
Blank (BJ22512-BLK1)					Prepared: 10/25/12 Analyzed: 10/30/12					
Gross Alpha (Incl. Uranium)	2.5 U	2.5	2.5	pCi/L						
LCS (BJ22512-BS1)					Prepared: 10/25/12 Analyzed: 10/30/12					
Gross Alpha (Incl. Uranium)	80.8	2.5	2.5	pCi/L	100		81	58-143		
Matrix Spike (BJ22512-MS1)					Source: 1212131-01		Prepared: 10/25/12 Analyzed: 10/30/12			
Gross Alpha (Incl. Uranium)	95.1	2.5	2.5	pCi/L	100	ND	95	57-140		
Matrix Spike Dup (BJ22512-MSD1)					Source: 1212131-01		Prepared: 10/25/12 Analyzed: 10/30/12			
Gross Alpha (Incl. Uranium)	116	2.5	2.5	pCi/L	100	ND	116	57-140	20	52
Batch BJ22523 - Ra-226 by EPA 903.1 / Ra-228 by EPA Ra-05 (Modif)										
Blank (BJ22523-BLK1)					Prepared: 10/25/12 Analyzed: 11/12/12					
Radium-226	0.1 U	0.1	0.1	pCi/L						
LCS (BJ22523-BS1)					Prepared: 10/25/12 Analyzed: 11/12/12					
Radium-226	15.4	0.1	0.1	pCi/L	15		105	43-119		
Matrix Spike (BJ22523-MS1)					Source: 1212224-01		Prepared: 10/25/12 Analyzed: 11/12/12			
Radium-226	16.5	0.1	0.1	pCi/L	10	4.82	117	33-120		
Matrix Spike Dup (BJ22523-MSD1)					Source: 1212224-01		Prepared: 10/25/12 Analyzed: 11/12/12			
Radium-226	15.3	0.1	0.1	pCi/L	10	4.82	104	33-120	8	65
Batch BJ22524 - Ra-226 by EPA 903.1 / Ra-228 by EPA Ra-05 (Modif)										
Blank (BJ22524-BLK1)					Prepared: 10/25/12 Analyzed: 11/06/12					
Radium-228	0.5 U	0.5	0.5	pCi/L						

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Eastern Analytical Inc.
25 Chenell Drive
Concord, NH 03301

November 15, 2012
Work Order: 1212394

Workorder Quality Control Data Results

Radiochemistry - Quality Control

Analyte	Result	PQL	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch BJ22524 - Ra-226 by EPA 903.1 / Ra-228 by EPA Ra-05 (Modif)										
LCS (BJ22524-BS1)					Prepared: 10/25/12 Analyzed: 11/06/12					
Radium-228	7.57	0.5	0.5	pCi/L	8.7		87	64-141		
Matrix Spike (BJ22524-MS1)					Source: 1212224-01 Prepared: 10/25/12 Analyzed: 11/06/12					
Radium-228	8.77	0.5	0.5	pCi/L	8.7	ND	101	55-149		
Matrix Spike Dup (BJ22524-MSD1)					Source: 1212224-01 Prepared: 10/25/12 Analyzed: 11/06/12					
Radium-228	8.75	0.5	0.5	pCi/L	8.7	ND	101	55-149	0.2	42
Batch BK20217 - Gross Beta by Evaporation, SM 7110 B										
Blank (BK20217-BLK1)					Prepared: 11/02/12 Analyzed: 11/07/12					
Gross Beta	3.5 U	3.5	3.5	pCi/L						
LCS (BK20217-BS1)					Prepared: 11/02/12 Analyzed: 11/07/12					
Gross Beta	95.2	3.5	3.5	pCi/L	100		95	38-126		
Matrix Spike (BK20217-MS1)					Source: 1212394-01 Prepared: 11/02/12 Analyzed: 11/07/12					
Gross Beta	105	3.5	3.5	pCi/L	100	ND	105	59-127		
Matrix Spike Dup (BK20217-MSD1)					Source: 1212394-01 Prepared: 11/02/12 Analyzed: 11/07/12					
Gross Beta	106	3.5	3.5	pCi/L	100	ND	106	59-127	1	59

SOUTHERN ANALYTICAL LABORATORIES, INC.

110 BAYVIEW BOULEVARD, OLDSMAR, FL 34677 813-855-1844 FAX 813-855-2218



Eastern Analytical Inc.
25 Chenell Drive
Concord, NH 03301

November 15, 2012
Work Order: 1212394

Workorder Quality Control Data Results

* Qualifiers, Notes and Definitions

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limits and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

Granite State Analytical, LLC

Main Office / Laboratory
22 Manchester Rd. / Rt. 28
Derry, NH 03038
(603) 432-3044

Lab Contact: Donald A. D'Anjou, Ph. D., Laboratory Director

DATE PRINTED: 10/29/2012

CLIENT NAME: Eastern Analytical Inc.
CLIENT ADDRESS: 25 Chenell Drive
Concord, NH, 03301

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

SAMPLE ID#: 1210-00518-001 DATE & TIME COLLECTED: 10/16/12 1:15 pm
SAMPLED BY: Eastern Analytical Inc. DATE & TIME RECEIVED: 10/18/12 10:35 am
SAMPLE LOCATION: 115208-Test Well 7A ANALYSIS PACKAGE: SOC GSA Eastern
RECEIPT TEMPERATURE: ON ICE 5.8 CELSIUS

Test Description	Results	Test Units	Test Fails	Analysis Method	Analyst	Date & Time Analyzed	MCL
Chlordane*	<0.4	ug/L		EPA 505	DD	10/26/12 11:58	2.0 ug/L
Date Extracted	Completed			EPA 505	JA	10/25/12 12:00	
Toxaphene*	<2	ug/L		EPA 505	DD	10/26/12 11:58	3 ug/L
2,4,5-TP (Silvex)*	<0.25	ug/L		EPA 515.3	DD	10/24/12 13:54	50 ug/L
2,4-D*	<1	ug/L		EPA 515.3	DD	10/24/12 13:54	70 ug/L
Date Extracted	Completed			EPA 515.3	JA	10/22/12 9:05	
Dicamba*	<0.5	ug/L		EPA 515.3	DD	10/24/12 13:54	
Dinoseb*	<1	ug/L		EPA 515.3	DD	10/24/12 13:54	7 ug/L
Pentachlorophenol*	<0.1	ug/L		EPA 515.3	DD	10/24/12 13:54	1 ug/L
Picloram*	<2	ug/L		EPA 515.3	DD	10/24/12 13:54	500 ug/L
2,4-Dichlorophenylacetic acid	108	%		EPA 515.3 - SS	DD	10/24/12 13:54	
Alachlor*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	2 ug/L
Aldrin*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	
Atrazine*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	3 ug/L
Benzo(a)pyrene*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	0.2 ug/L
Butachlor*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	
Date Extracted	Completed			EPA 525.2	DD	10/18/12 12:50	
Di(2-ethylhexyl)adipate*	<1	ug/L		EPA 525.2	DD	10/19/12 16:32	400 ug/L
Di(2-ethylhexyl)phthalate*	<1	ug/L		EPA 525.2	DD	10/19/12 16:32	6 ug/L
Dieldrin*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	
Endrin*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	2 ug/L
Heptachlor Epoxide*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	0.2 ug/L
Heptachlor*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	0.4 ug/L
Hexachlorobenzene*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	1 ug/L
Hexachlorocyclopentadiene*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	50 ug/L
Lindane*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	0.2 ug/L

The results presented in this report relate to the samples listed above in the condition in which they were received.

MCL = Maximum Contaminant Level

* NELAC Accredited Analysis

A list of our certifications is available upon request.



A handwritten signature of Donald A. D'Anjou, Ph.D., Laboratory Director.

Donald A. D'Anjou, Ph.D.
Laboratory Director

This analysis meets NELAC requirements except as noted.

This certificate shall not be reproduced, except in full, without the written approval of Granite State Analytical, LLC

Granite State Analytical, LLC

Main Office / Laboratory
22 Manchester Rd. / Rt. 28
Derry, NH 03038
(603) 432-3044

Lab Contact: Donald A. D'Anjou, Ph. D., Laboratory Director

DATE PRINTED: 10/29/2012

CLIENT NAME: Eastern Analytical Inc.
CLIENT ADDRESS: 25 Chenell Drive
Concord, NH, 03301

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

SAMPLE ID#: 1210-00518-001 DATE & TIME COLLECTED: 10/16/12 1:15 pm
SAMPLED BY: Eastern Analytical Inc. DATE & TIME RECEIVED: 10/18/12 10:35 am
SAMPLE LOCATION: 115208-Test Well 7A ANALYSIS PACKAGE: SOC GSA Eastern
RECEIPT TEMPERATURE: ON ICE 5.8 CELSIUS

Test Description	Results	Test Units	Test Fails	Analysis Method	Analyst	Date & Time Analyzed	MCL
Methoxychlor*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	40 ug/L
Metolachlor*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	
Metribuzin*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	
Propachlor*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	
Simazine*	<0.1	ug/L		EPA 525.2	DD	10/19/12 16:32	4 ug/L
1,3-Dimethyl-2-nitrobenzene	101	%		EPA 525.2 - SS	DD	10/19/12 16:32	
Perylene-d12	82	%		EPA 525.2 - SS	DD	10/19/12 16:32	
Pyrene-d10	97	%		EPA 525.2 - SS	DD	10/19/12 16:32	
Triphenylphosphate	102	%		EPA 525.2 - SS	DD	10/19/12 16:32	
3-Hydroxycarbofuran*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Aldicarb Sulfone*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Aldicarb Sulfoxide*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Aldicarb*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Carbaryl*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Carbofuran*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	40 ug/L
Methiocarb*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Methomyl*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Oxamyl (Vydate)*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	200 ug/L
Propoxur (Baygon)*	<1	ug/L		EPA 531.1	ES	10/25/12 12:37	
Glyphosate*	<10	ug/L		EPA 547	ES	10/22/12 17:51	700 ug/L

The results presented in this report relate to the samples listed above in the condition in which they were received.

MCL = Maximum Contaminant Level

* NELAC Accredited Analysis
A list of our certifications is available upon request.



A handwritten signature in black ink, appearing to read "Donald A. D'Anjou".

Donald A. D'Anjou, Ph.D.
Laboratory Director

This analysis meets NELAC requirements except as noted.

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Eastern Analytical Inc.
25 Chenell Drive
Concord, NH 03301

November 15, 2012
Work Order: 1212394

Workorder Quality Control Data Results

*** Qualifiers, Notes and Definitions**

Results followed by a "U" indicate that the sample was analyzed but the compound was not detected. Results followed by "I" indicate that the reported value is between the laboratory method detection limits and the laboratory practical quantitation limit.

A statement of estimated uncertainty of test results is available upon request.

For methods marked with **, all QC criteria have been met for this method which is equivalent to a SAL certified method.

Test results in this report meet all the requirements of the NELAC standards. Any applicable qualifiers are shown below. Questions regarding this report should be directed to Client Services at 813-855-1844.

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

EAI SRB# 115208

Sample ID _____ Date Sampled _____ Matrix _____ aParameters _____

Test Well 7A | 10/16/2012 | aqueous | NH SOCs - 505, 525.2, 515.3, 531.1, 547 Subcontract GSA
| 13:15

Sample Notes

EAI SRB# 115208 Project State: NH

Project ID: 0

Company Granite State Analytical
Address 22 Manchester Road
Derry, NH 03038
Account #
Phone # 432-3044
Fax Number 434-4837

Results Needed by: Preferred date Std.

QC Deliverables

- A A+ B B+ C P.

Notes about project:

Email pdf of results and invoice to customerservice@eailabs.com.

Eastern Analytical Inc. PO Number: 39542

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by: [Signature] Date/Time: 10/18/12 7:35 Received by: [Signature]
Relinquished by: [Signature] Date/Time: 10/18/12 8:55 Received by: [Signature]

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591

As a subcontractor to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontractor, your officers, agents or employees

SEACOAST ANALYTICAL SERVICES

Route 125 & Pinkham Road
Lee, New Hampshire
(Mail to: PO Box 849, Durham, NH 03824)
Tel 603-868-1457 Fax 603-868-1030



RADON TEST RESULTS

Date: October 24, 2012

Reference #: S10182CR

Client: Eastern Analytical Inc

YOUR RADON IN WATER RESULTS

Test Site: EA 115208
Test Well 7A

1,686 pCi/L

Seacoast Analytical Services is a National Radon Safety Board Accredited Radon Laboratory (NRSB#ARL0008) in New Hampshire, Maine, Massachusetts, Vermont, Rhode Island, and Connecticut. We are also registered (#ME07800C) as required with the State of Maine.

Reading the attached sheet "Understanding Your Radon Test Results" should help you interpret this report. Further information and advice is available by contacting any of the state radon programs (phone numbers are listed below) and through the EPA internet site (www.epa.gov/radon/index.html). New Hampshire has closed its radon office, and refers calls to EPA Boston.

EPA Boston	(617-918-1285)	Maine	(207-287-5676)
Massachusetts	(413-586-7525)	Vermont	(802-865-7730)
Rhode Island	(401-222-7756)	Connecticut	(860-509-7367)

Two national organization web sites list accredited radon mitigation companies. Follow the links to radon mitigation. (www.nrsb.org) (www.radongas.org)

Seacoast Analytical Services - TRUE COPY
Mel Mosley
Laboratory Director

UNDERSTANDING YOUR RADON TEST RESULTS

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GENERAL INFORMATION - Radon is a radioactive gas produced by the natural breakdown of uranium (which is present in soil and in rock formations throughout this country). Studies have shown that exposure to radon contributes to the incidence of lung cancer. This relationship between radon exposure and lung cancer is the primary basis for the EPA's radon policy. The EPA advises you to take action to reduce the level of radon in your air if it exceeds 4.0 pci/L (picocuries per liter of air) in the lowest lived-in level of your home. The EPA is in the process of setting a national standard for a maximum recommended radon concentration in water through the Safe Drinking Water Act.

RADON IN YOUR AIR - Radon gas rises through underground rocks and soil and collects around and under the foundation of your home. Radon enters your home through cracks and/or holes in the foundation. The highest concentration of radon will be found in the level of the home closest to the ground (usually the basement). The radon concentration decreases at each successive level above the basement.

RADON IN YOUR WATER - Just as oxygen gas dissolves into lake water, radon gas dissolves into your well water underground. When radon is present in your water, there are two ways that it can affect your health.

1. Radon escapes into the air when you wash your dishes or laundry, or when you shower or use the kitchen or bathroom sink. The more water you use, the more radon gas will escape into your air. In this case, radon from your water contributes to the level of radon in your air.
2. Radon is ingested when you drink your water. The health effects from radon ingestion are currently being studied, and a federally recommended maximum level of radon in water is expected soon.

HOW SHOULD I REACT TO MY REPORTED RADON AIR CONCENTRATION ?

1. The EPA has advised homeowners to take action to reduce the radon in their home if the concentration in the lowest LIVED-IN level exceeds 4.0 pci/L. This number was statistically generated based on a lifetime exposure of 18 hours per day. When considering the risk YOU face from your reported radon concentration, remember to compare the amount of time you spend in the level of your home where the measurement was made to the 18 hour per day factor. You may wish to measure the radon in other levels of the home.
2. The statistical risk factor is based on the entire population, but everyone has a different susceptibility to cancer. Your risk of getting cancer is also based on genetic factors, the environment you live in, and on your general health and lifestyle. For instance, the EPA and other health agencies have found that people who smoke are especially at risk from radon exposure.

HOW SHOULD I REACT TO MY REPORTED RADON WATER CONCENTRATION ?

1. The EPA is considering an upper limit of radon in public water supplies. When the level is agreed upon and finalized, it will provide us with a nationally recommended maximum level for our own water wells.
2. Each New England state currently recommends an action level where private well owners should investigate water treatment to remove radon. The current action levels (picocuries per liter of water) by state are:

New Hampshire	2,000	Maine	4,000	Connecticut	5,000
Massachusetts	10,000	Vermont	4,000	Rhode Island	4,000

WHAT IF MY REPORTED RADON CONCENTRATION EXCEEDS THE RECOMMENDED LEVELS?

Consider the information above and make a personal 'risk assessment'. You need to consider whether or not you are comfortable with the radon level you are faced with. If you are not, you should consider making repairs and/or installing a radon reduction system. You might make your own repairs. There are also companies that specialize in radon mitigation. We recommend you contact your state radon program for information and advice. You can also find information at the EPA internet site (www.epa.gov/iaq/radon). Two national organization web sites list accredited radon mitigation companies. Follow the links to radon mitigation. (www.nrsb.org)(www.radongas.org)

The good news about radon problems is that they can be reduced. If you install a radon reduction system, keep up with recommended maintenance and occasionally retest for radon to be sure the system is working.

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

EAI SRB# 115208

Sample ID Test Well 7A Date Sampled 10/16/2012 13:15 Matrix aqueous aParameters Radon Subcontract Seacoast Analytical

EAI SRB# 115208 Project State: NH

Project ID: 0

Company Seacoast Analytical
Address Route 125 & Pinkham Road
Address Lee, NH 03824
Account #
Phone # 868-1457
Fax Number 868-1030

Results Needed by: Preferred date

QC Deliverables
 A A+ B B+ C P

Notes about project:
Email pdf of results and invoice to customerservice@eailabs.com.

Eastern Analytical Inc. PO Number: 39544

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by: [Signature] Date/Time 10/18/12 Relinquished by: [Signature] Date/Time 10/18/12 9:03
Received by: [Signature] Date/Time 10/18/12 7:21

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees



Eastern Analytical, Inc.

professional laboratory and drilling services

Carl McMorran
Aquarion Water Company of NH
7 Scott Road
Hampton, NH 03842



Subject: Laboratory Report

Eastern Analytical, Inc. ID: 163985
Client Identification: New Well Test | Dec 2016
Date Received: 12/15/2016

Dear Mr. McMorran :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

- Solid samples are reported on a dry weight basis, unless otherwise noted
- < : "less than" followed by the reporting limit
- > : "greater than" followed by the reporting limit
- %R : % Recovery


Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,


Lorraine Olashaw, Lab Director

2.14.17
Date

31
of pages (excluding cover letter)



SAMPLE CONDITIONS PAGE

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Temperature upon receipt (°C): **1.1**

Received on ice or cold packs (Yes/No): **Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
163985.01	Well #22	12/15/16	12/14/16	aqueous		Adheres to Sample Acceptance Policy
163985.02	Trip Blank - 524.2	12/15/16	11/14/16	aqueous		Adheres to Sample Acceptance Policy
163985.03	Trip Blank - 1,4 diox	12/15/16	11/4/16	aqueous		Adheres to Sample Acceptance Policy
163985.04	Trip Blank - SOC	12/15/16	11/29/16	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis. Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater, 20th Edition, 1998 and 22nd Edition, 2012
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 2nd edition, 1992



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID:	Well #22	Trip Blank - 524.2
Lab Sample ID:	163985.01	163985.02
Matrix:	aqueous	aqueous
Date Sampled:	12/14/16	11/14/16
Date Received:	12/15/16	12/15/16
Units:	ug/L	ug/L
Date of Analysis:	12/19/16	12/19/16
Analyst:	BAM	BAM
Method:	524.2	524.2
Dilution Factor:	1	1
Dichlorodifluoromethane	< 0.5	< 0.5
Chloromethane	< 0.5	< 0.5
Vinyl chloride	< 0.5	< 0.5
Bromomethane	< 0.5	< 0.5
Chloroethane	< 0.5	< 0.5
Trichlorofluoromethane	< 0.5	< 0.5
Diethyl Ether	< 5	< 5
Acetone	< 10	< 10
1,1-Dichloroethene	< 0.5	< 0.5
tert-Butyl Alcohol (TBA)	< 30	< 30
Methylene chloride	< 0.5	< 0.5
Carbon disulfide	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 0.5	< 0.5
Ethyl-t-butyl ether(ETBE)	< 0.5	< 0.5
Isopropyl ether(DIPE)	< 0.5	< 0.5
tert-amyl methyl ether(TAME)	< 0.5	< 0.5
trans-1,2-Dichloroethene	< 0.5	< 0.5
Vinyl acetate	< 10	< 10
1,1-Dichloroethane	< 0.5	< 0.5
2,2-Dichloropropane	< 0.5	< 0.5
cis-1,2-Dichloroethene	< 0.5	< 0.5
2-Butanone(MEK)	< 5	< 5
Bromochloromethane	< 0.5	< 0.5
Tetrahydrofuran(THF)	< 5	< 5
Chloroform	< 0.5	< 0.5
1,1,1-Trichloroethane	< 0.5	< 0.5
Carbon tetrachloride	< 0.5	< 0.5
1,1-Dichloropropene	< 0.5	< 0.5
Benzene	< 0.5	< 0.5
1,2-Dichloroethane	< 0.5	< 0.5
Trichloroethene	< 0.5	< 0.5
1,2-Dichloropropane	< 0.5	< 0.5
Dibromomethane	< 0.5	< 0.5
Bromodichloromethane	< 0.5	< 0.5
4-Methyl-2-pentanone(MIBK)	< 5	< 5
cis-1,3-Dichloropropene	< 0.3	< 0.3
Toluene	< 0.5	< 0.5
trans-1,3-Dichloropropene	< 0.3	< 0.3
1,1,2-Trichloroethane	< 0.5	< 0.5
2-Hexanone	< 5	< 5
Tetrachloroethene	< 0.5	< 0.5
1,3-Dichloropropane	< 0.5	< 0.5
Dibromochloromethane	< 0.5	< 0.5
1,2-Dibromoethane(EDB)	< 0.5	< 0.5
Chlorobenzene	< 0.5	< 0.5
1,1,1,2-Tetrachloroethane	< 0.5	< 0.5
Ethylbenzene	< 0.5	< 0.5



LABORATORY REPORT

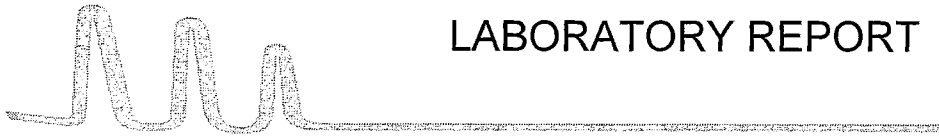
EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID:	Well #22	Trip Blank - 524.2
Lab Sample ID:	163985.01	163985.02
Matrix:	aqueous	aqueous
Date Sampled:	12/14/16	11/14/16
Date Received:	12/15/16	12/15/16
Units:	ug/L	ug/L
Date of Analysis:	12/19/16	12/19/16
Analyst:	BAM	BAM
Method:	524.2	524.2
Dilution Factor:	1	1
mp-Xylene	< 0.5	< 0.5
o-Xylene	< 0.5	< 0.5
Styrene	< 0.5	< 0.5
Bromoform	< 0.5	< 0.5
IsoPropylbenzene	< 0.5	< 0.5
Bromobenzene	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	< 0.5	< 0.5
1,2,3-Trichloropropane	< 0.5	< 0.5
n-Propylbenzene	< 0.5	< 0.5
2-Chlorotoluene	< 0.5	< 0.5
4-Chlorotoluene	< 0.5	< 0.5
1,3,5-Trimethylbenzene	< 0.5	< 0.5
tert-Butylbenzene	< 0.5	< 0.5
1,2,4-Trimethylbenzene	< 0.5	< 0.5
sec-Butylbenzene	< 0.5	< 0.5
1,3-Dichlorobenzene	< 0.5	< 0.5
p-Isopropyltoluene	< 0.5	< 0.5
1,4-Dichlorobenzene	< 0.5	< 0.5
1,2-Dichlorobenzene	< 0.5	< 0.5
n-Butylbenzene	< 0.5	< 0.5
1,2-Dibromo-3-chloropropane	< 0.5	< 0.5
1,3,5-Trichlorobenzene	< 0.5	< 0.5
1,2,4-Trichlorobenzene	< 0.5	< 0.5
Hexachlorobutadiene	< 0.5	< 0.5
Naphthalene	< 0.5	< 0.5
1,2,3-Trichlorobenzene	< 0.5	< 0.5
4-Bromofluorobenzene (surr)	96 %R	93 %R
1,2-Dichlorobenzene-d4 (surr)	111 %R	106 %R

Acetone, 2-Butanone(MEK), 2-Hexanone and Naphthalene exhibited recovery outside acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID:	Well #22	Trip Blank - 1,4 diox
Lab Sample ID:	163985.01	163985.03
Matrix:	aqueous	aqueous
Date Sampled:	12/14/16	11/4/16
Date Received:	12/15/16	12/15/16
Units:	ug/L	ug/L
Date of Analysis:	12/21/16	12/21/16
Analyst:	VG	VG
Method:	8260B SIM	8260B SIM
Dilution Factor:	1	1
1,4-Dioxane	< 0.25	< 0.25
4-Bromofluorobenzene (surr)	98 %R	98 %R
Toluene-d8 (surr)	91 %R	91 %R



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID:	Well #22	Trip Blank - SOC
Lab Sample ID:	163985.01	163985.04
Matrix:	aqueous	aqueous
Date Sampled:	12/14/16	11/29/16
Date Received:	12/15/16	12/15/16
Units:	ug/L	ug/L
Date of Extraction/Prep:	12/16/16	12/16/16
Date of Analysis:	12/16/16	12/16/16
Analyst:	JMR	JMR
Method:	8011/504	8011/504
Dilution Factor:	1	1
1,2-Dibromoethane(EDB)	< 0.02	< 0.02
Dibromochloropropane (DBCP)	< 0.02	< 0.02
1,1,1,2-Tetrachloroethane (surr)	92 %R	89 %R



LABORATORY REPORT

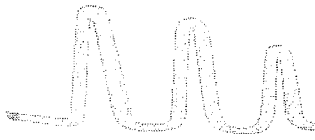
EAI ID#: 163985

Client: **Aquarion Water Company of NH**
Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01
Matrix: aqueous
Date Sampled: 12/14/16
Date Received: 12/15/16
Units: ug/L
Date of Extraction/Prep: 12/16/16
Date of Analysis: 12/16/16
Analyst: JMR
Method: 505
Dilution Factor: 1

Chlordane < 0.5
Toxaphene < 2
1,1,1,2-Tetrachloroethane (surr) 92 %R



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01
Matrix: aqueous
Date Sampled: 12/14/16
Date Received: 12/15/16
Units: ug/L
Date of Extraction/Prep: 12/20/16
Date of Analysis: 12/20/16
Analyst: AR
Method: 515.4
Dilution Factor: 1

Pentachlorophenol < 1
2,4-D < 5
2,4,5-TP (Silvex) < 5
Dinoseb < 5
Picloram < 5
2,4-DCAA 105 %R



LABORATORY REPORT

EAI ID#: 163985

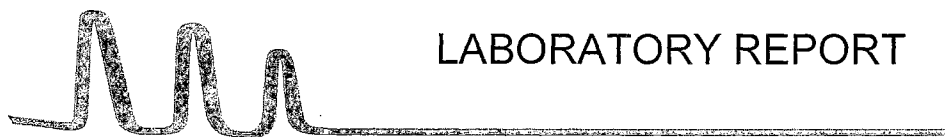
Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01
Matrix: aqueous
Date Sampled: 12/14/16
Date Received: 12/15/16
Units: ug/L
Date of Extraction/Prep: 12/21/16
Date of Analysis: 12/21/16
Analyst: JMR
Method: 525.2
Dilution Factor: 1

Hexachlorocyclopentadiene	< 1
Hexachlorobenzene	< 1
bis(2-Ethylhexyl)adipate	< 1
bis(2-Ethylhexyl)phthalate	< 1
Benzo[a]pyrene	< 0.2
Simazine	< 1
Atrazine	< 1
Alachlor	< 1
Lindane(gamma-BHC)	< 0.2
Endrin	< 1
Heptachlor	< 0.4
Heptachlor Epoxide	< 0.2
Methoxychlor	< 1
1,3-Dimethyl-2-nitrobenzene(surr)	95 %R
Pyrene-d10(surr)	102 %R
Triphenylphosphate(surr)	101 %R
Perylene-d12(surr)	99 %R



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01

Matrix: aqueous

Date Sampled: 12/14/16

Date Received: 12/15/16

Units: ug/L

Date of Analysis: 12/22/16

Analyst: BML

Method: 531.2

Dilution Factor: 1

Aldicarb < 0.5

Aldicarb Sulfone < 0.5

Aldicarb Sulfoxide < 0.5

Carbaryl < 0.5

Carbofuran < 0.5

3-Hydroxycarbofuran < 0.5

Methiocarb < 0.5

Methomyl < 0.5

Oxamyl < 0.5

Propoxur < 0.5

BMDC (surr) 87 %R



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01

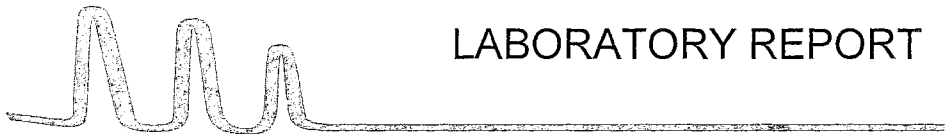
Matrix: aqueous

Date Sampled: 12/14/16

Date Received: 12/15/16

Fluoride **0.55**
Sulfate **28**
Chloride **47**
pH **8.1**

Units	Analysis		Method	Analyst
	Date	Time		
mg/L	12/28/16	22:22	300.0	KD
mg/L	12/28/16	22:22	300.0	KD
mg/L	12/16/16	11:13	4500CIE-97	KD
SU	12/15/16	16:00	4500H+B-00	AMB



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01

Matrix: aqueous

Date Sampled: 12/14/16

Date Received: 12/15/16

		Analytical Matrix	Units	Date of Analysis	Method	Analyst
Antimony	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Arsenic	0.003	AqTot	mg/L	12/16/16	200.8	DS
Barium	0.006	AqTot	mg/L	12/16/16	200.8	DS
Beryllium	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Cadmium	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Chromium	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Copper	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Iron	< 0.05	AqTot	mg/L	12/16/16	200.8	DS
Manganese	0.016	AqTot	mg/L	12/16/16	200.8	DS
Mercury	0.0002	AqTot	mg/L	12/16/16	200.8	DS
Nickel	0.003	AqTot	mg/L	12/16/16	200.8	DS
Selenium	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Sodium	86	AqTot	mg/L	12/16/16	200.8	DS
Thallium	< 0.001	AqTot	mg/L	12/16/16	200.8	DS
Uranium	< 0.1	AqTot	ug/L	12/19/16	200.8	DS
Zinc	< 0.005	AqTot	mg/L	12/16/16	200.8	DS



LABORATORY REPORT

EAI ID#: 163985

Client: **Aquarion Water Company of NH**

Client Designation: **New Well Test | Dec 2016**

Sample ID: Well #22

Lab Sample ID: 163985.01

Matrix: aqueous

Date Sampled: 12/14/16

Date Received: 12/15/16

Parameter	Concentration	Units	Date of Analysis	Method
Gross Alpha	1.3	pCi/L	12/29/17	900
Uranium	ND	ug/L	12/19/17	200.8
Uranium*	ND	pCi/L	2/14/17	See Ref.
Adj. Gross Alpha**	1.3	pCi/L	2/14/17	See Ref.

Gross Alpha analyzed by a subcontracted lab, entire lab report enclosed.

*Uranium conversion factor = 0.67 pCi/ug

**Adj. (Compliance) Gross Alpha = Gross Alpha (pCi/L) - Uranium (pCi/L)

ND = None detected

Gross Alpha MCL = 15 pCi/L

References: 40 CFR parts 9, 141 and 142 - National Primary Drinking Water Regulations; Radionuclides; Final Rule, December 2000. Pages 76717 and 76725 (Table 1-8, footnote 12).

If requested, the potassium-40 beta particle activity is calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

Reference: MA DEP

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Eastern Analytical
25 Chenell Drive
Concord NH 03301

Report Date: January 20, 2017

Project: New Well Test - Dec 2016

Submittal Date: 12/20/2016

Group Number: 1746489

PO Number: 45585

State of Sample Origin: NH

Client Sample Description

EAI ID #163985 Well #22 Grab Water

Lancaster Labs

(LL) #

8753849

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Eastern Analytical

Attn: Customer Service

Respectfully Submitted,



Stacy L. Hess
Project Manager

(717) 556-7236

Sample Description: EAI ID #163985 Well #22 Grab Water
 New Well Test - Dec 2016

LL Sample # WW 8753849
 LL Group # 1746489
 Account # 11730

Project Name: New Well Test - Dec 2016

Collected: 12/14/2016 13:00

Eastern Analytical
 25 Chenell Drive
 Concord NH 03301

Submitted: 12/20/2016 08:25

Reported: 01/20/2017 17:03

W22--

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
Misc. Organics			EPA 537 Rev 1.1	ng/l	ng/l	
10954	Perfluorooctanoic acid	335-67-1	6 B	0.5	2	1
10954	Perfluorononanoic acid	375-95-1	N.D.	0.6	2	1
10954	Perfluorodecanoic acid	335-76-2	N.D.	0.5	2	1
10954	Perfluoroundecanoic acid	2058-94-8	N.D.	1	3	1
10954	Perfluorododecanoic acid	307-55-1	N.D.	0.5	2	1
10954	Perfluorotridecanoic acid	72629-94-8	N.D.	0.5	2	1
10954	Perfluorotetradecanoic acid	376-06-7	N.D.	0.5	2	1
10954	Perfluorohexanoic acid	307-24-4	N.D.	0.5	2	1
10954	Perfluoroheptanoic acid	375-85-9	N.D.	0.5	2	1
10954	Perfluorobutanesulfonate	375-73-5	N.D.	0.7	2	1
10954	Perfluorohexanesulfonate	355-46-4	N.D.	1	3	1
10954	Perfluoro-octanesulfonate	1763-23-1	N.D.	2	6	1

Target analytes were detected in the method blank associated with the samples as noted on the QC Summary. The following corrective action was taken: The sample was reextracted outside the holding time and no reportable hits were observed in the method blank. PFOA was observed in the re-extracted sample at 0.763 ng/l. The data is reported from the in-hold extraction. Both sets of data are included in the data package.

The stated QC limits are advisory only until sufficient data points can be obtained to calculate statistical limits.

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10954	PFAS in Water by LC/MS/MS	EPA 537 Rev 1.1	1	16358012	12/31/2016 22:02	Marissa C Drexinger	1
14091	PFAA Water Prep	EPA 537 Rev 1.1	1	16358012	12/27/2016 10:45	Robert Brown	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

 Client Name: Eastern Analytical
 Reported: 01/20/2017 17:03

Group Number: 1746489

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ng/l	ng/l	ng/l
Batch number: 16358012	Sample number(s): 8753849		
Perfluorooctanoic acid	6	0.5	2
Perfluorononanoic acid	N.D.	0.6	2
Perfluorodecanoic acid	N.D.	0.5	2
Perfluoroundecanoic acid	N.D.	1	3
Perfluorododecanoic acid	N.D.	0.5	2
Perfluorotridecanoic acid	N.D.	0.5	2
Perfluorotetradecanoic acid	N.D.	0.5	2
Perfluorohexanoic acid	N.D.	0.5	2
Perfluoroheptanoic acid	N.D.	0.5	2
Perfluorobutanesulfonate	N.D.	0.7	2
Perfluorohexanesulfonate	N.D.	1	3
Perfluoro-octanesulfonate	N.D.	2	6

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ng/l	ng/l	ng/l	ng/l					
Batch number: 16358012	Sample number(s): 8753849								
Perfluorooctanoic acid	200	161.25	200	165.49	81	83	70-130	3	30
Perfluorononanoic acid	200	160.43	200	162.11	80	81	70-130	1	30
Perfluorodecanoic acid	200	156.48	200	167.42	78	84	70-130	7	30
Perfluoroundecanoic acid	200	157.72	200	132.23	79	66*	70-130	18	30
Perfluorododecanoic acid	200	166.21	200	170.45	83	85	70-130	3	30
Perfluorotridecanoic acid	200	157	200	164.59	79	82	70-130	5	30
Perfluorotetradecanoic acid	200	155.21	200	148.61	78	74	70-130	4	30
Perfluorohexanoic acid	200	156.79	200	159.45	78	80	70-130	2	30
Perfluoroheptanoic acid	200	72.49	200	82.89	36*	41*	70-130	13	30
Perfluorobutanesulfonate	176.8	142.94	176.8	153.95	81	87	70-130	7	30
Perfluorohexanesulfonate	189.2	156.28	189.2	172.03	83	91	70-130	10	30
Perfluoro-octanesulfonate	191.2	138.83	191.2	147.7	73	77	70-130	6	30

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

 Client Name: Eastern Analytical
 Reported: 01/20/2017 17:03

Group Number: 1746489

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ng/l	MS Spike Added ng/l	MS Conc ng/l	MSD Spike Added ng/l	MSD Conc ng/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 16358012	Sample number(s): 8753849 UNSPK: 8753849									
Perfluorooctanoic acid	5.67	199.76	159.76			77		70-130		
Perfluorononanoic acid	N.D.	199.76	151.31			76		70-130		
Perfluorodecanoic acid	N.D.	199.76	161.09			81		70-130		
Perfluoroundecanoic acid	N.D.	199.76	147.59			74		70-130		
Perfluorododecanoic acid	N.D.	199.76	159.8			80		70-130		
Perfluorotridecanoic acid	N.D.	199.76	179.17			90		70-130		
Perfluorotetradecanoic acid	N.D.	199.76	145.72			73		70-130		
Perfluorohexanoic acid	N.D.	199.76	160.35			80		70-130		
Perfluoroheptanoic acid	N.D.	199.76	78.12			39*		70-130		
Perfluorobutanesulfonate	N.D.	176.59	143			81		70-130		
Perfluorohexanesulfonate	N.D.	188.97	162.83			86		70-130		
Perfluoro-octanesulfonate	N.D.	190.97	157.37			82		70-130		

*- Outside of specification

**-This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

A-11730
G-1746489
S-8-753849
Sample Notes Page 1

Sample ID Date Sampled Matrix aParameters

Well #22 | 12/14/2016 | aqueous | Subcontract - Perfluorinated Compounds EPA 537 (14 Compound List)
| 13:00

EAI ID#: 163985 Project State: NH
Project Name: New Well Test | Dec 2016

Results Needed by: Preferred date

Std

Company Lancaster Labs aka Eurofins
Address 2425 New Holland Pike PO
Address Lancaster, PA 17601
Account # 11730
Phone # 717-656-2300
Fax Number 717-656-2681

QC Deliverables

A A+ B B+ C P

Notes about project

PO #: 45585

EAI ID#: 163985

Report To: Front Office / Ship hard copy overnight

E-Mail PDF: customerservice@eailabs.com

Invoice To: Front Office with hard copy report

Relinquished by *Paul Thomas* 12/19/16 15:30 UPS
Date/Time

Relinquished by *PLH* 12/22/16 8:25 UPS
Date/Time Received by

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603)228-0525 1-800-287-0525

Fax: (603)228-4591

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

Client: Eastern Analytical

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>12/20/2016 8:25</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Porsha Hill (12046) at 08:44 on 12/20/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	2.6	IR	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference...
- W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



DOH Certification #E84025

Report Date: January 11, 2017

Eastern Analytical, Inc.
25 Chenell Dr.
Concord, NH 03301

Field Custody: Client
Client/Field ID: 163985
Well #22

PWS ID#
Sample Collection : 12-14-16/1300
Lab ID No: 16.15143
Lab Custody Date: 12-28-16/1000
Sample Description: Water

CERTIFICATE OF ANALYSIS

Contam Code	Parameter	Units	Results	Analysis Date/Time	Method	Detection Limit
4002	Analytical gross alpha (aga)	pCi/L	1.3 ± 0.9	12-29-16/0700	EPA 900.0	2.1
4010	Radium-226 + Radium-228	pCi/L	1.5 ± 0.5	Calc	Calc	0.7
4020	Radium-226	pCi/L	0.9 ± 0.3	1-5-17/1044	EPA 903.0	0.4
4030	Radium-228	pCi/L	0.6 ± 0.5	1-9-17/1130	EPA Ra-05	0.7

Alpha Standard: Th-230

James W. Hayes
Laboratory Manager

Test results meet all requirements of the NELAC standards. Statement of estimated uncertainty available upon request. Test results refer only to sample(s) listed. Contact person: Jim Hayes (813) 229-2879.

CHAIN-OF-CUSTODY RECORD

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professional laboratory services

Sample ID Date Sampled Matrix aParameters Sample Notes Page 1

Well #22 | 12/14/2016 | 13:00 | aqueous | Radium 226 & Radium 228 Combined Subcontract KNL

Well #22 | 12/14/2016 | 13:00 | aqueous | Subcontract - Gross Alpha (KNL)

16-15143

gt 1-12-17

EAI ID#: 163985 Project State: NH
Project Name: New Well Test | Dec 2016

Results Needed by: Preferred date *SHD*

Company: KNL Environmental Testing
Address: 3202 N. Florida Ave.
Address: Tampa, FL 33603
Account #
Phone #: 813-229-2879
Fax Number: 813-229-0002

QC Deliverables
 A A+ B B+ C P
Notes about project

PO #: 45584 EAI ID#: 163985
Report To: Front Office / Ship hard copy overnight
E-Mail PDF: customerservice@ealabs.com
Invoice To: Front Office with hard copy report
Relinquished by: *[Signature]* Date/Time: *12/21/16 15:30 UPS*
Relinquished by: *[Signature]* Date/Time: *12/21/16 11:00* Received by: *[Signature]*

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591
As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damage arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees



Pace Analytical Services, LLC
110 South Bayview Blvd.
Oldsmar, FL 34677
(813)881-9401

December 23, 2016

Customer Service

RE: Project: New Well Test | Dec 2016
Pace Project No.: 35284255

Dear Customer Service:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kathryn Nordmark
kathryn.nordmark@pacelabs.com
Project Manager

Enclosures

cc: Jennifer Laramie, Eastern Analytical Inc.



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: New Well Test | Dec 2016
Pace Project No.: 35284255

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074

Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

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SAMPLE SUMMARY

Project: New Well Test | Dec 2016
Pace Project No.: 35284255

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35284255001	Well #22	Water	12/14/16 13:00	12/20/16 10:30

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
110 South Bayview Blvd.
Oldsmar, FL 34677
(813)881-9401

SAMPLE ANALYTE COUNT

Project: New Well Test | Dec 2016
Pace Project No.: 35284255

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35284255001	Well #22	EPA 547	CRT	1	PASI-O

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: New Well Test | Dec 2016
Pace Project No.: 35284255

Sample: Well #22 Lab ID: 35284255001 Collected: 12/14/16 13:00 Received: 12/20/16 10:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
547 HPLC Glyphosate	Analytical Method: EPA 547								
Glyphosate	4.2 U	ug/L	6.0	4.2	1		12/23/16 02:49		J(M1), J(R1)

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: New Well Test | Dec 2016
 Pace Project No.: 35284255

QC Batch: 340216 Analysis Method: EPA 547
 QC Batch Method: EPA 547 Analysis Description: 547 HPLC Glyphosate
 Associated Lab Samples: 35284255001

METHOD BLANK: 1825439 Matrix: Water
 Associated Lab Samples: 35284255001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Glyphosate	ug/L	4.2 U	6.0	4.2	12/22/16 22:58	

LABORATORY CONTROL SAMPLE: 1825440

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Glyphosate	ug/L	50	51.5	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825441 1825442

Parameter	Units	35284362001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Glyphosate	ug/L	0.0042 U mg/L	50	50	53.7	56.4	107	113	80-120	5 30	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1825443 1825444

Parameter	Units	35284255001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Glyphosate	ug/L	4.2 U	50	50	74.4	148	149	296	80-120	66 30	J(M1), J(R1)

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: New Well Test | Dec 2016
Pace Project No.: 35284255

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-O Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

U Compound was analyzed for but not detected.
J(M1) Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
J(R1) Estimated Value. RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: New Well Test | Dec 2016
Pace Project No.: 35284255

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35284255001	Well #22	EPA 547	340216		

REPORT OF LABORATORY ANALYSIS


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CHAIN-OF-CUSTODY RECORD

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professional laboratory services

Sample ID: _____ Date Sampled: _____ Matrix: _____ aParameters: _____ Sample Notes: _____ Page 1

Well #22 | 12/14/2016 13:00 | aqueous | Subcontract - Glyphosate EPA Method 547

MO# : 35284255

35284255

EAI ID#: 163985 Project State: NH Results Needed by: Preferred date *Std*

Project Name: New Well Test | Dec 2016

Company: Southern Analytical
Address: 110 Bayview BLVD
Address: Oldsmar, FL 34677
Account #: _____
Phone #: 813-855-1844
Fax Number: 813-855-2218

QC Deliverables
 A A+ B B+ C P
Notes about project

PO #: 45586 EAI ID#: 163985
Report To: Front Office / Ship hard copy overnight
E-Mail PDF: customerservice@eailabs.com
Invoice To: Front Office with hard copy report
Relinquished by: *[Signature]* Date/Time: *12/14/16 15:30* Received by: *[Signature]* Date/Time: *12/14/16 10:30*
Relinquished by: *[Signature]* Date/Time: *12/14/16 10:30* Received by: *[Signature]* Date/Time: *12/14/16 10:30*

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591
As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees



Document Name:
Sample Condition Upon Receipt Form
Document No.:
F-FL-C-007 rev. 10

Document Revised:
August 10, 2016
Issuing Authority:
Pace Florida Quality Office

Sar **WO# : 35284255**

Project # PM: KN1 **Due Date:** 01/05/17
Project Manager: CLIENT: 37-EASANA
Client:

Date and Initials of person:
Examining contents: PH
Label: R. King 10/20/16
Deliver: PH
pH: PH
Initials: R.A.

Thermometer Used: F-204 Date: -0.2 Time: 10:30 Initials: R.A.

Samples shorted to lab (If Yes, complete)	Shorted Date:	Shorted Time:	Qty:
Cooler #1 Temp. *C <u>6.4</u> (Visual) <u>0.2</u> (Correction Factor) <u>0.6.2</u> (Actual)	<u>10/20/16</u>		
Cooler #2 Temp. *C _____ (Visual) _____ (Correction Factor) _____ (Actual)			
Cooler #3 Temp. *C _____ (Visual) _____ (Correction Factor) _____ (Actual)			
Cooler #4 Temp. *C _____ (Visual) _____ (Correction Factor) _____ (Actual)			
Cooler #5 Temp. *C _____ (Visual) _____ (Correction Factor) _____ (Actual)			
Cooler #6 Temp. *C _____ (Visual) _____ (Correction Factor) _____ (Actual)			

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____
Shipping Method: First Overnight Priority Overnight Standard Overnight Ground Other Next day air
Billing: Recipient Sender Third Party Unknown
Tracking # # 1Z X46 599 01 9234 0320

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No Ice: Wet Blue None
Packing Material: Bubble Wrap Bubble Bags None Other _____

Comments:

Chain of Custody Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody Filled Out	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Relinquished Signature & Sampler Name COC	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples Arrived within Hold Time	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush TAT requested on COC	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient Volume	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Sample Labels match COC (sample IDs & date/time of collection)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
All containers needing acid/base preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Preservation Information: Preservative: _____ Lot#/Trace #: _____ Date: _____ Time: _____ Initials: _____
All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA Vials? (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments):

Project Manager Review: _____ Date: _____

SEACOAST ANALYTICAL SERVICES

Route 125 & Pinkham Road
Lee, New Hampshire
603 868 1457

(Mail to: PO Box 555, Barrington, NH 03825)



RADON TEST RESULTS

Date: December 19, 2016

Reference #: S12166JR

Client: Eastern Analytical Inc

YOUR RADON IN WATER RESULTS

Test Site: EAI #163985
Well #22

1,835 pCi/L

Seacoast Analytical Services is a National Radon Safety Board Accredited Radon Laboratory (NRSB #ARL0008) in New Hampshire, Maine, Massachusetts, Vermont, Rhode Island, and Connecticut. We are also registered (#ME07800C) as required with the State of Maine.

Reading the attached sheet "Understanding Your Radon Test Results" should help you interpret this report. Further information and advice is available by contacting any of the state radon programs (phone numbers are listed below) and through the EPA internet site (www.epa.gov/radon/index.html). New Hampshire has closed its radon office, and refers calls to EPA Boston.

EPA Boston (888-372-7341)
Massachusetts (413-586-7525)
Rhode Island (401-222-7756)

Maine (207-287-5676)
Vermont (802-865-7730)
Connecticut (860-509-7367)

Two national organization web sites list accredited radon mitigation companies. Follow the links to radon mitigation. (www.nrsb.org) (www.radongas.org)

Seacoast Analytical Services - TRUE COPY

Katy Anderson, Technical Director

CHAIN-OF-CUSTODY RECORD eastern analytical professional laboratory services

EAI ID# 163985

Sample ID _____ Date Sampled Matrix _____ aParameters _____ Sample Notes _____

Well #22 | 12/14/2016 | aqueous | Radon Subcontract SAS
13:00

EAI ID# 163985 Project State: NH
Project ID: 1495
Company Seacoast Analytical
Address Route 125 & Pinkham Road
Address Lee, NH 03824
Account # _____
Phone # 868-1457
Fax Number 868-1030

Results Needed by: Preferred date Std
QC Deliverables
 A A+ B B+ C P
Notes about project:
Email pdf of results and invoice to
customerservice@ealabs.com.

PO #: 45583 EAI ID# 163985
Please call prior to analyzing, if RUSH surcharges will be applied.
Samples Collected by: _____
Relinquished by: _____ Date/Time _____ Received by: _____
Relinquished by: _____ Date/Time _____ Received by: _____

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591
As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

CHAIN-OF-CUSTODY RECORD

163985

AWCNH

Date/Time
Composites need start
and stop dates/times

Matrix

Parameters and Sample Notes

of containers

Sample IDs

Well #22

aqueous

AqTot/ICP/Meets: Sb, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Hg, Ni, Se, Na, Ti, Zn, U/C/I/F/p/H/SO4/Radon/AqSubSAS/Rad226Rad228CComboSubKNL/AdjGrossAlpha/GrossAlphaSubKNL/VNH524F-ullist/ EASOCsNH/V8260SIM14DIOXANE/PFCSSubLL

16-14-16
1:00 PM

23

Sampler confirms ID and parameters are accurate

Circle preservative/s: HCL, HNO₃, H₂SO₄, NaOH, MEOH, Na₂S₂O₈, ICE

Dissolved Sample Field Filtered

Trip Blank - 524.2

aqueous

AqTot/VNH524F-ullist

1

Sampler confirms ID and parameters are accurate

Circle preservative/s: HCL, HNO₃, H₂SO₄, NaOH, MEOH, Na₂S₂O₈, ICE

Dissolved Sample Field Filtered

Trip Blank - 1.4 diox

aqueous

AqTot/V8260SIM14DIOXANE

2

Sampler confirms ID and parameters are accurate

Circle preservative/s: HCL, HNO₃, H₂SO₄, NaOH, MEOH, Na₂S₂O₈, ICE

Dissolved Sample Field Filtered

Please ensure this auto COC is accurate, adheres to permit or sampling requirements for this sampling event, and modify as necessary.

EAL Project ID 1495
Project Name New Well Test | Dec 2016

Results Needed by: Preferred date _____
Notes: Trip Samples - ENT

Reporting Options
 HC
 EDD PDF
 EDD email
 PDF prelim, NO FAX
 e-mail Login Confirmation
 NO FAX
 Partial FAX
 PDF Invoice
 EQUIS
 Temp 11°C
 PO# 4500014201
 Quote#: 1009520

Client (Pro Mgr) Carl McMorran
Customer Aquarion Water Company of NH
Address 7 Scott Road
City Hampton NH 03842
Phone 926-3319 Fax 926-4356
Email: cmcmorran@aquarionwater.com
Direct 926-3319 X116

QC deliverables
 A
 A+
 B
 B+
 C
 PC

Samples Collected by: GLENN EATOR
 Relinquished by: [Signature] Date/Time: 2016-12-15 10:15
 Relinquished by: [Signature] Date/Time: 2016-12-15 14:30
 Received by: [Signature]

Appendix E

NHDES PCS Inventory
Windshield Survey Results
Known Contamination Sources File Review

**PCS Windshield Survey Results
Existing Aquarion Wellhead Protection Area
GEOSPHERE, NOVEMBER 2016**

DESID	SITE NAME	ADDRESS	SITE TYPE	TOWN	LOCATED?	CONTACT/NOTES	STATUS
PCSO1193	(NO NAME PROVIDED)	LAFAYETTE RD	LOCAL PCS	NORTH HAMPTON	CNL		
PCSO1174, 15681	ADVENTURE MOTOR SPORTS	9 ANNS LANE	LOCAL PCS, HAZ WASTE GEN	HAMPTON	E		
PCSO1213	ALTERNATIVE IMAGES INC	819 LAFAYETTE RD	LOCAL PCS	HAMPTON	E		
PCSO1189	APPLEDORE MEDICAL GROUP FAMILY PRACTICE	29 LAFAYETTE RD	LOCAL PCS	NORTH HAMPTON	E	NORTH HAMPTON FAMILY PRACTICE	
47713	AQUARIUM WATER CO WELL #9	MILL ROAD	UIC	HAMPTON	E		REGISTRATION
11059	ATLANTIC NEW SUNDAY ADV INC	893 LAFAYETTE RD	HAZ WASTE GEN	HAMPTON	E	HUTCHINSON'S CANDY OUTLET	RCRA REGULATED
15838	AUTO WHOLESALERS OF NORTH HAMPTON	57 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E		RCRA REGULATED
49959	BLAKE MITSUBISHI	25 LAFAYETTE RD	HOLDTANK	NORTH HAMPTON	E	VERIZON WIRELESS	REGISTRATION
11736	BOB HENDRY AUTO	74 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	CNL		STATE REGULATED
PCSO1216	CAROUSEL MOTORS	775 LAFAYETTE RD	LOCAL PCS	HAMPTON	E		
67306	CARRIGG PROPERTY	173 ATLANTIC AVE	OPUF	NORTH HAMPTON	NEW		CLOSED
PCSO1176	CORE PHYSICIANS	879-881 LAFAYETTE RD	LOCAL PCS	HAMPTON	E	HAMPTON HEALTH	
56128	DONNA COLLYER	10 BLAKE LN	OPUF	HAMPTON	E	RESIDENCE	CLOSED
PCSO1191	ELIZABETH GRADY FACE FIRST	29 LAFAYETTE RD	LOCAL PCS	NORTH HAMPTON	E	INTERNATIONAL BEAUTY SALON	
50713	EVE JAECKEL RESIDENCE	8 PINE RD	OPUF	NORTH HAMPTON	E	RESIDENCE	CLOSED
11033	FAIRPOINT COMMUNICATIONS	169 WINNACUNNET RD	HAZ WASTE GEN	HAMPTON	NEW		RCRA REGULATED
PCSO1187	FAMILY DENTISTRY GN SIMMONDS DMD	220 HIGH ST	LOCAL PCS	HAMPTON	CNL	RESIDENCE	
59964	FANNING RESIDENCE	11 NAVES ROAD	OPUF	HAMPTON	E	RESIDENCE	CLOSED
15667	FIRST STUDENT INC 12508	25 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E	IPSWITCH BAY YACHT SALES	RCRA REGULATED
11636, 15496	FITTS PHOTO & HOBBY	69 LAFAYETTE RD	HAZ WASTE GEN, UIC	NORTH HAMPTON	CNL		RCRA REGULATED
1887	FRANK FITZGERALD INC	17 BARBOUR RD	LUST, UIC, UST	HAMPTON	E	ANDERSON MASONRY	CLOSED
1888	G M S EXCAVATING	157 LITTLE RIVER ROAD	UST	HAMPTON	E	RESIDENCE	UST
1889	GETTY STATION 55260	22 TUCK RD	LUST, UIC, UST	HAMPTON	E	747 LAFAYETTE ROAD	UNASSIGNED
10715, 1890	GETTY STATION 55241	747 LAFAYETTE RD	HAZ WASTE GEN, UIC, LUST, UST	HAMPTON	E		RCRA REGULATED
11735	GLOBAL MONTELLO GROUP CORP	70 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E	NORTH HAMPTON MOBIL	RCRA REGULATED
14914	GOLDEN HEN CONVENIENCE STORE	775 LAFAYETTE ROAD	SITE/EVAL	HAMPTON	CNL		CLOSED
65526	GRENIER (SHERR) PROPERTY	11 PHILBROOK TER	OPUF	HAMPTON	E	RESIDENCE	CLOSED
11635	GUS S INTL BICYCLE SHOP INC	55 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E		STATE REGULATED
1891	HAMPTON ACADEMY JR HIGH SCHOOL	29 ACADEMY AVE	UST	HAMPTON	NEW		UST
4457	HAMPTON AIRFIELD	9A LAFAYETTE RD	UST	NORTH HAMPTON	CNL		UST
68282	HAMPTON ROD AND GUN CLUB	189 ATLANTIC AVENUE		NORTH HAMPTON	NEW		
PCSO1207	HAMPTON VETRENIARIAN HOSPITAL	871 LAFAYETTE RD	LOCAL PCS	HAMPTON	E		
15501	HAMPTON WATER WORKS	7 MILL RD	SPILL/RLS	NORTH HAMPTON	E		CLOSED
16784	HAMPTON WATER WORKS	LITTLE RIVER RD	HAZ WASTE GEN	NORTH HAMPTON	E		RCRA REGULATED
14934	HESS 29202-LUCIER HOLDINGS	639 LAFAYETTE RD	IRSPILL	HAMPTON	E	SPEEDWAY GAS STATION	CLOSED
16537	HOME DEPOT 3405	35 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E		RCRA REGULATED
11066	HOUGHTON JAMES	204 MILL RD	HAZ WASTE GEN	HAMPTON	E	JOHNSON'S HANDYMAN SERVICE	STATE REGULATED
58267	HUNTER RESIDENCE	167 HIGH STREET	SPILL/RLS	HAMPTON	NEW		CLOSED
16538	ITS ABOUT TIME	43 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	CNL		STATE REGULATED
PCSO1188	JEFF'S CUSTOM TRAILERS	6 CEDAR RD	LOCAL PCS	NORTH HAMPTON	E		
17042, 55861	JIFFY LUBE 3021	27 LAFAYETTE RD	HAZ WASTE GEN, SEPTIC	NORTH HAMPTON	E	ALSO A MIDAS ADDRESS	RCRA REGULATED, CLOSED
15504	LITTLE RED WAGON	57 LAFAYETTE ROAD	UIC	NORTH HAMPTON	CNL		CLOSED
15675	LYMAN MCCREA AUTOMOTIVE INC	775 LAFAYETTE RD	HAZ WASTE GEN	HAMPTON	E		RCRA REGULATED
PCSO1210	MARGUERITES BEAUTY SALON	861 LAFAYETTE RD	LOCAL PCS	HAMPTON	E		
50620	MARK SICARD	7 LITTLE RIVER ROAD	OPUF	HAMPTON	CNL		CLOSED
1905	MARSTON SCHOOL	4 MARSTON WAY	LUST, UST	HAMPTON	E		CLOSED
64552	MARTILLE PROPERTY	4 HIGGINS LANE	OPUF	HAMPTON	NEW		CLOSED
62707	MATTHEWS RESIDENCE	8 TOBEY ST	OPUF	HAMPTON	E		CLOSED
PCSO1192	M'LORDS HAIR STYLISTS	LAFAYETTE RD	LOCAL PCS	NORTH HAMPTON	E		
15668, 50715, PCSO1190	MY STYLIST	29 LAFAYETTE RD	HAZ WASTE GEN, UIC, LOCAL PCS	NORTH HAMPTON	E	INTERNATIONAL BEAUTY SALON	RCRA REGULATED
4466	NORTH HAMPTON ELEMENTARY SCHOOL	201 ATLANTIC AVE	UST	NORTH HAMPTON	NEW		UST
4469	NORTH HAMPTON IRVING	73 LAFAYETTE RD	HOLDTANK, LUST, UST	NORTH HAMPTON	E		REGISTRATION
16541	NORTH HAMPTON MAINWAY	73 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E	NORTH HAMPTON IRVING	RCRA REGULATED
4470	NORTH HAMPTON MOBIL	70 LAFAYETTE RD	HAZWASTE GEN, LUST, MOST, UST	NORTH HAMPTON	E		CLOSED
10152	NORTH HAMPTON SERVICE CENTER	25 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E	VERIZON WIRELESS	RCRA REGULATED
PCSO1205	NORTHEAST MOTORS	15 LAFAYETTE ROAD	LOCAL PCS	NORTH HAMPTON	E		
14928	OAKS OF HAMPTON/PACHECO PROPERTY	BETWEEN HIGH & WINNACUNNET ST	HAZWASTE	HAMPTON	CNL		CLOSED

**PCS Windshield Survey Results
Existing Aquarion Wellhead Protection Area
GEOSPHERE, NOVEMBER 2016**

PCS01177	OLSONS	7 CEDAR RD	LOCAL PCS	NORTH HAMPTON	E	NO FORMAL BUSINESS SIGN	
PCS01175	PLOUFFE	157 LITTLE RIVER RD	LOCAL PCS	HAMPTON	E	RESIDENCE	
PCS01214	REMICK & GENDRON FUNERAL HOME AND CREMATORY	811 LAFAYETTE ROAD	LOCAL PCS	HAMPTON	E		
16540	RITE AID 3282	69 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E	NEW72 LAFAYETTE ROAD	RCRA REGULATED
15666	ROCKINGHAM AIRCRAFT ENT INC	HAMPTON AIRFIELD	HAZ WASTE GEN	NORTH HAMPTON	CNL		RCRA REGULATED
PCS02317	ROUTE 1 TRACTOR SALES	71 LAFAYETTE RD	LOCAL PCS	NORTH HAMPTON	E		
17041	SEACOAST HARLEY DAVIDSON	17 LAFAYETTE RD	HAZ WASTE GEN	NORTH HAMPTON	E		RCRA REGULATED
PCS01198	SIMMONS & SONS	82 LAFAYETTE RD	LOCAL PCS	NORTH HAMPTON	E		
11734	SKYCRAFT CORP	RTE 1	HAZ WASTE GEN	NORTH HAMPTON	CNL		RCRA REGULATED
1879	VERIZON (FMR NEWENGLAND TELEPHONE)	169 WINNACUNNET RD	IRSPILL, LUST, UST	HAMPTON	NEW		CLOSED
16796	WALLINGFORD CALVIN DMD	150 WINNACUNNET RD	HAZ WASTE GEN	HAMPTON	NEW		RCRA REGULATED
PCS01194	WJ YURCHESHEN PROFESSIONAL ASSOCIATES GENER	215 ATLANTIC AVE	LOCAL PCS	NORTH HAMPTON	CNL		
1900	XTRA MART	685 LAFAYETTE RD	LUST, UST	HAMPTON	E		CLOSED

NOTES:

- CNL = Could Not Locate, E = Exists, NEW= not included in 2016 windshield survey
- PCS Windshield Survey notes cross referenced with PCS & BMP Windshield Survey for Aquarion Wellhead Protection Area, GEOSPHERE ENVIRONMENTAL INC., 2016

Known Contamination Sites

DESID	SITE NAME	ADDRESS	SITE TYPE	TOWN	LOCATED?	CONTACT/NOTES	STATUS
49959	BLAKE MITSUBISHI/FIRST STUDENT	25 LAFAYETTE RD	HOLDTANK	NORTH HAMPTON	E	VERIZON WIRELESS	REGISTRATION
67306	CARRIGG PROPERTY	173 ATLANTIC AVE	OPUF	NORTH HAMPTON	NEW		CLOSED
56128	DONNA COLLYER	10 BLAKE LN	OPUF	HAMPTON	E	RESIDENCE	CLOSED
50713	EVE JAECKEL RESIDENCE	8 PINE RD	OPUF	NORTH HAMPTON	E	RESIDENCE	CLOSED
59964	FANNING RESIDENCE	11 NAVES ROAD	OPUF	HAMPTON	E	RESIDENCE	CLOSED
1887	FRANK FITZGERALD INC	17 BARBOUR RD	LUST, UIC, UST	HAMPTON	E	ANDERSON MASONRY	CLOSED
1889	GETTY STATION 55260	22 TUCK RD	LUST, UIC, UST	HAMPTON	E	747 LAFAYETTE ROAD	UNASSIGNED
65526	GRENIER (SHERR) PROPERTY	11 PHILBROOK TER	OPUF	HAMPTON	E	RESIDENCE	CLOSED
15501	HAMPTON WATER WORKS	7 MILL RD	SPILL/RLS	NORTH HAMPTON	E		CLOSED
14934	HESS 29202-LUCIER HOLDINGS	639 LAFAYETTE RD	IRSPILL	HAMPTON	E	SPEEDWAY GAS STATION	CLOSED
58367	HUNTER RESIDENCE	167 HIGH STREET	SPILL/RLS	HAMPTON	NEW		CLOSED
17042, 55861	JIFFY LUBE 3021	27 LAFAYETTE RD	HAZ WASTE GEN, SEPTIC	NORTH HAMPTON	E	ALSO A MIDAS ADDRESS	RCRA REGULATED, CLOSED
50620	MARK SICARD	7 LITTLE RIVER ROAD	OPUF	HAMPTON	CNL		CLOSED
1905	MARSTON SCHOOL	4 MARSTON WAY	LUST, UST	HAMPTON	E		CLOSED
64552	MARTILLE PROPERTY	4 HIGGINS LANE	OPUF	HAMPTON	NEW		CLOSED
62707	MATTHEWS RESIDENCE	8 TOBEY ST	OPUF	HAMPTON	E		CLOSED
4469	NORTH HAMPTON IRVING	73 LAFAYETTE RD	HOLDTANK, LUST, UST	NORTH HAMPTON	E		REGISTRATION
4470	NORTH HAMPTON MOBIL	70 LAFAYETTE RD	HAZWASTE GEN, LUST, MOST, UST	NORTH HAMPTON	E		CLOSED
1879	VERIZON (FMR NEWENGLAND TELEPHONE)	169 WINNACUNNET RD	IRSPILL, LUST, UST	HAMPTON	NEW		CLOSED
1900	XTRA MART	685 LAFAYETTE RD	LUST, UST	HAMPTON	E		CLOSED

- CNL= Could Not Locate, E = Exists, NEW= not identified in 2016 windshield survey.
- PCS Windshield Survey notes cross referenced with PCS & BMP Windshield Survey for Aquarion Wellhead Protection Area, GEOSPHERE ENVIRONMENTAL INC., 2016.
- Red highlight indicates closed sites according to NHDES Records or windshield survey findings.

Known Contamination Sources
NHDES Site Remediation Database File Review

Site Name: Blake Mitsubishi/First Student
DES ID #: 49959
Address: 25 Lafayette Rd, North Hampton
Site Type: Holdtank/AST

File Review Summary:

NHDES files indicate the presence of an Aboveground Petroleum Storage Tank (AST) on site. An AST registration was issued by NHDES on 03/12/2012. The most recent Annual Leak Monitor & Overfill Protection review submitted 5/23/16 found the site to be in compliance with the registration requirements. This site is located approximately 9,500 ft northwest of the Well 22 withdrawal site. The contact information for this site is BFP, LLC. Brian Blake, PO BOX 700 North Hampton NH 03862. Phone: (603) 964-7900.

Site Name: Getty Station 55260
DES ID #: 1889
Address: 22 Tuck Road, Hampton
Site Type: LUST, UIC, UST

File Review Summary:

A Discharge of a Regulated Substance submittal was received by NHDES on 10/06/1993. A Remedial Implementation Plan was approved on 01/10/2000. Following remediation activities and groundwater monitoring, a groundwater management permit (NHDES #199309051) was issued. Groundwater monitoring results from the most recent groundwater monitoring program, which occurred on October 20, 2016, detected a 1/8 of an inch layer of NAPL in a groundwater monitoring well (MW-5). Groundwater samples collected on that date from several monitoring wells contained VOCs at an excess of NHDES AGQs, including Toluene, Ethyl-Benzene, and Naphthalene. 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, n-Propylbenzene, and Styrene. This site is approximately 5,500 ft northwest from the Well 22 withdrawal site. Ongoing groundwater monitoring is being conducted by Geolnsight, Inc. 186 Granite Street, 3rd Floor, Suite A. Manchester, NH 03101-2643 Tel: (603) 314-0820.

Site Name: North Hampton Irving
DES ID #: 4469
Address: 73 Lafayette Road
Site Type: Holdtank, LUST, UST

File Review Summary:

Groundwater monitoring related to groundwater management permit requirements (#GWP-199101036-N-007) has been conducted by Ransom Environmental Consultants, Inc. The second most recent round of groundwater sample results indicate that all of the monitoring wells on site were below AGQS, with the exception of one well that had a detection of MtBE at 15 ppb on June 20, 2016. Samples collected at the defected well on 12/02/2016 indicated that MtBE levels had fallen back below AGQSs. This site is located approximately 13,000 ft north of the Well 22 withdrawal site. Ongoing compliance monitoring is being reported to DES triannually. Contact: Ransom Environmental Consultants, Inc. 195 Commerce Way, Suite D, Portsmouth, New Hampshire 03801. Tel: (603) 436-1490.

Appendix F

NHDES Water Resource and Use Inventory

Water User Inventory Map

This map shows the New Hampshire Department of Environmental Services (NHDES) geospatial data which is critical to groundwater withdrawal permitting. The tables below list data sites that intersect the buffer of the proposed new well location. A table will be blank if there is no data within the buffer.

National Pollutant Discharge Elimination System (NPDES)

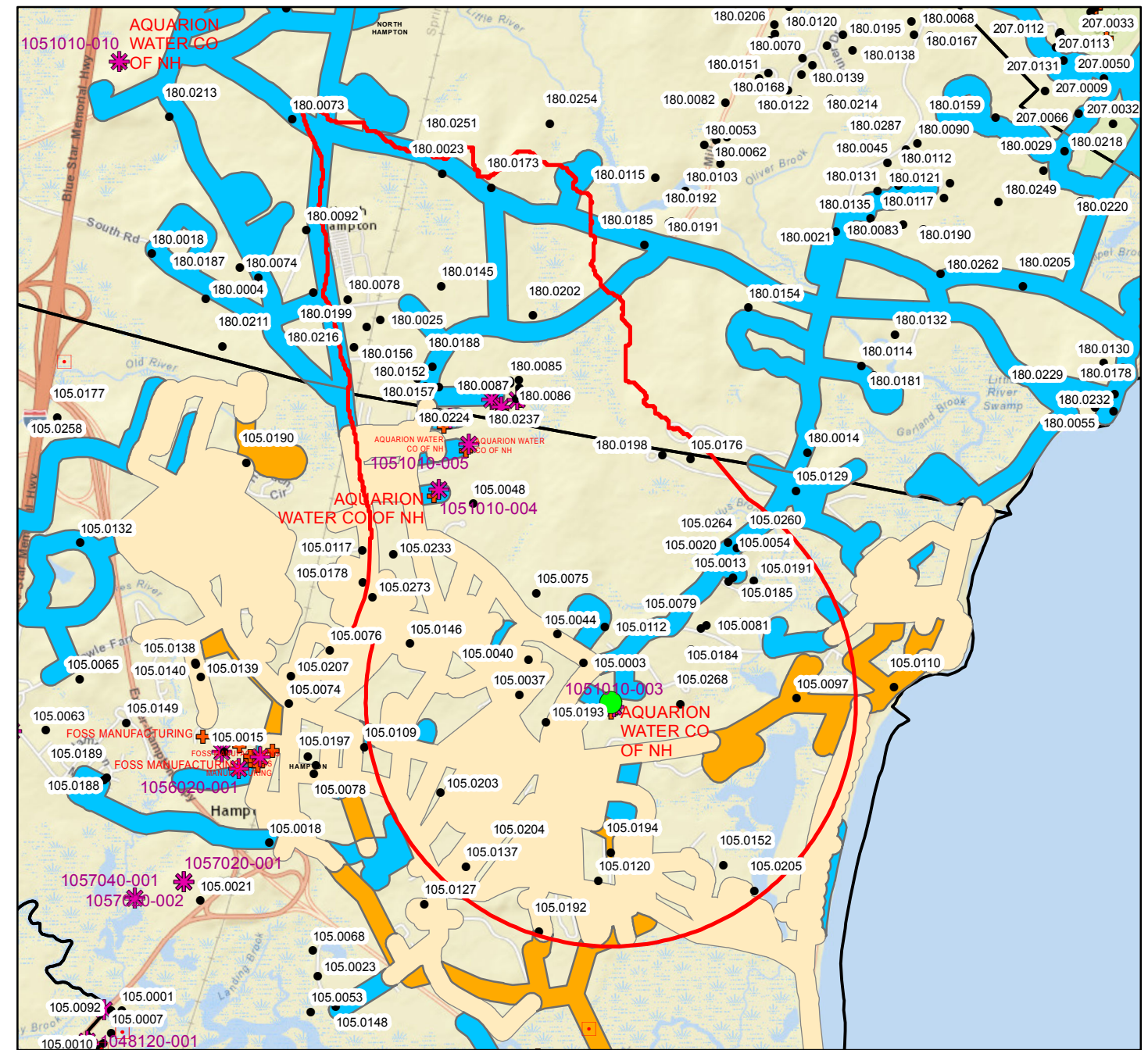
FACILITY	ADDRESS	TOWN	ID	TYPE	CATEGORY	STREAM	STATUS
----------	---------	------	----	------	----------	--------	--------

Private Water Wells

WRB ID	STREET NUMBER	ROAD	TOWN	TYPE	USE	TOTAL DEPTH	YIELD
105.0003	117	LITTLE RIVER RD	HAMPTON	1	1	160	10
105.0013	6	MOHAWK ST	HAMPTON	1	1	120	10
105.0020		WOODLAND RD	HAMPTON	1	1	100	15
105.0037		CURTIS RD	HAMPTON	1	1	165	30
105.0044		LITTLE RIVER RD	HAMPTON	1	1	360	4
105.0048			HAMPTON	2	8	44.7	0.8
105.0054	189	WOODLAND RD	HAMPTON	1	1	140	8
105.0075	17	BARBOUR RD	HAMPTON	2	8	9.5	0
105.0081		NORTH SHORE RD	HAMPTON	1	1	205	20
105.0097		RTE 101C	HAMPTON	1	0	300	20
105.0112	11	BEAR PATH	HAMPTON	1	1	160	50
105.0120	384	WINNACUNNET RD	HAMPTON	1	1	220	50
105.0137	59	EDGEWOOD DR	HAMPTON	1	1	120	30
105.0146		HOMESTEAD CIR	HAMPTON	1	1	240	15
180.0025	28	CEDAR RD	NORTH HAMPTON	1	1	305	1
180.0078	39	CEDAR RD	NORTH HAMPTON	1	1	362	2
180.0085	OFF	MILL RD	NORTH HAMPTON	1	8	423	85
180.0086	OFF	MILL RD	NORTH HAMPTON	1	8	363	50
180.0087	OFF	MILL RD	NORTH HAMPTON	1	9	203	15
180.0145	25A	CEDAR RD	NORTH HAMPTON	1	1	385	12
105.0176	34	MUNSEY DR	HAMPTON	1	1	500	3
180.0152	8	MILL PL	NORTH HAMPTON	1	1	185	10
180.0156	16	MILL PL	NORTH HAMPTON	1	1	305	15
180.0157	15	MILL PL	NORTH HAMPTON	1	1	145	50
105.0184		NORTH SHORE RD	HAMPTON	1	1	260	18
180.0173	201	ATLANTIC AVE	NORTH HAMPTON	1	6	240	50
180.0188	20	MILL RD	NORTH HAMPTON	1	1	580	6
180.0177		MILL RD	NORTH HAMPTON	2	3	40	225
105.0185		MOHAWK ST	HAMPTON	1	1	240	10
180.0023	202	ATLANTIC AVE	NORTH HAMPTON	1	1	142	6
105.0002		MOHAWK ST	HAMPTON	1	1	240	25
105.0019	154	WOODLAND RD	HAMPTON	1	1	100	25
105.0191	8	PAWNEE ST	HAMPTON	1	1	205	15
180.0196	16	ROCKRIMMON RD	NORTH HAMPTON	1	1	420	22
180.0199	25	LAFAYETTE RD	NORTH HAMPTON	1	4	723	20
105.0268	11	HUNTER DR	HAMPTON	1	6	140	40
105.0193	157	LITTLE RIVER RD	HAMPTON	1	1	220	50
105.0194	16	FIELDING LN	HAMPTON	1	1	240	50
105.0203	31	WINDMILL LN	HAMPTON	1	6	380	20
105.0204	38	EDGEWOOD DR	HAMPTON	1	6	180	30
105.0205	6.88	HEMLOCK ST	HAMPTON	1	1	235	50
180.0202	50	MILL RD	NORTH HAMPTON	1	1	320	20
180.0216	17	LAFAYETTE RD	NORTH HAMPTON	1	4	480	10
180.0224	3	MILL PLACE SUBDIV	NORTH HAMPTON	1	1	450	4.25
105.0192		PENNIMAN LN	HAMPTON	1	6	400	20
180.0235		MILL RD	NORTH HAMPTON	5	8	10	0
180.0236		MILL RD	NORTH HAMPTON	5	8	32	0
180.0237		MILL RD	NORTH HAMPTON	5	8	57	0
105.0040		LITTLE RIVER RD	HAMPTON	1	1	180	20
105.0079		NORTH SHORE RD	HAMPTON	1	1	200	70

Public Water Supply Sources

NAME	TOWN	PWSID	SYSTEM TYPE	SYSTEM ACTIVITY	SOURCE ACTIVITY	SOURCE TYPE
AQUARION WATER.NH	HAMPTON	1051010-015	C	A	A	G
AQUARION WATER.NH	HAMPTON	1051010-017	C	A	A	G
AQUARION WATER.NH	HAMPTON	1051010-016	C	A	A	G
AQUARION WATER.NH	HAMPTON	1051010-003	C	A	A	G
AQUARION WATER.NH	HAMPTON	1051010-005	C	A	A	G
AQUARION WATER.NH	HAMPTON	1051010-004	C	A	A	G
AQUARION WATER.NH	HAMPTON	1051010-006	C	A	A	G



Legend

- Proposed New Well Location
- Proposed New Well Location Buffer
- NPDES Discharge
- Private Water Wells
- ✱ Public Water Supply Sources
- + Registered Water Users
- Town Boundaries

Water and Sewer Service Areas

- Water & Sewer Service Area
- Sewer Service Area
- Water Service Area



3,250 Feet



NOTE: The coverages presented are under constant revision as new sites or facilities are added. They may not contain all of the potential or existing sites or facilities. NHDES is not responsible for the use or interpretation of this information. Not intended for legal purposes. For more information, please contact the Community Well Siting Program at 603-271-8866.

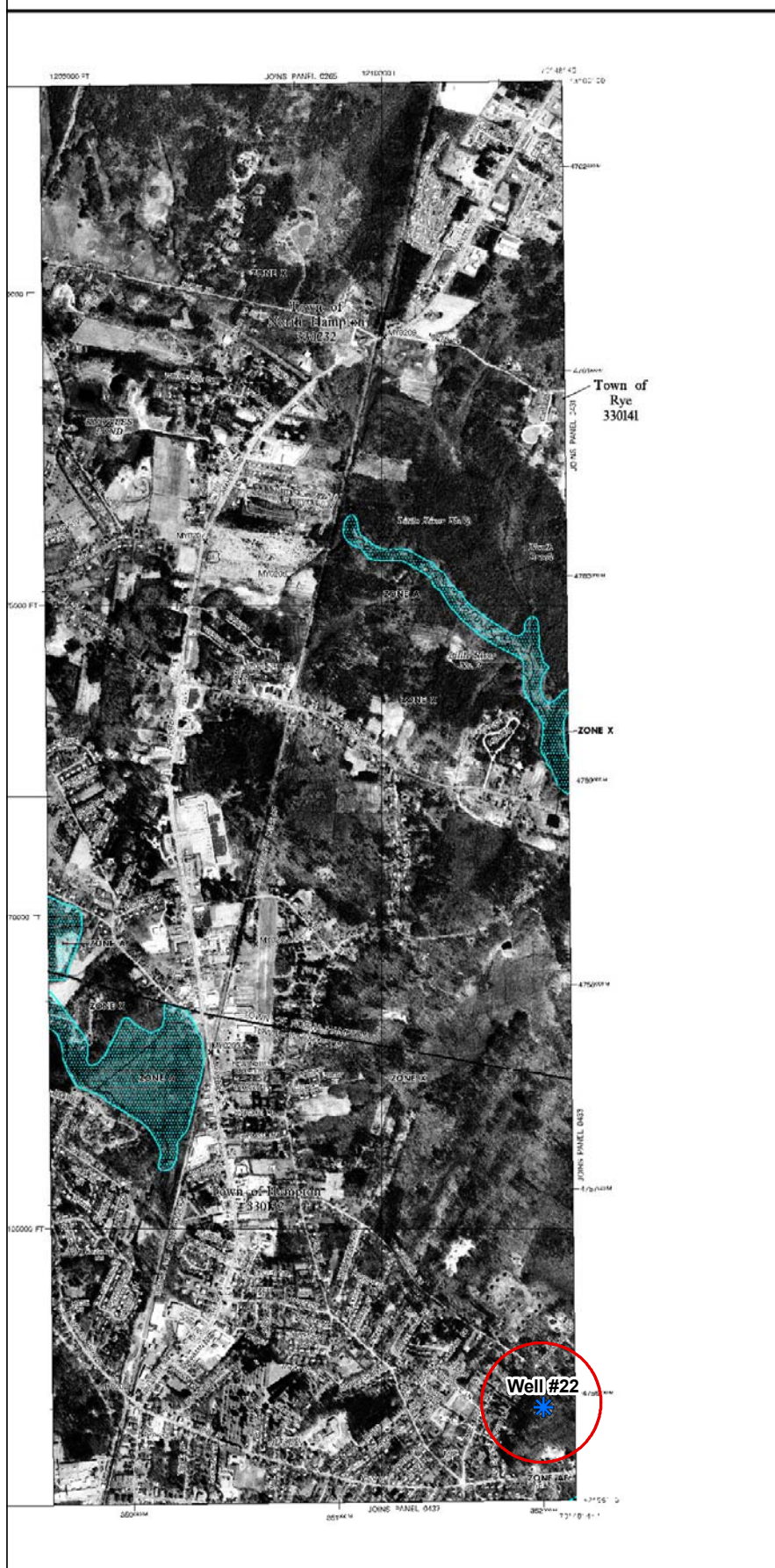
Registered Water Users

FACILITY NAME	ADDRESS	TOWN	TYPE	ACTION	SOURCE/DESTINATION NAME
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	WHITE'S FIELD WELL #6
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	MARSTON SPRINGS WELL #8
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	SCAMMON WELL #9
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	SICARD WELL #11
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	MILL ROAD BRW #20
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	MILL ROAD BRW #21
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	WELL #8A
AQUARION WATER CO OF NH	WINNICUT ROAD	NORTH HAMPTON	WS	WL	RYDER'S WELL #7

Date: 2/28/2017

Appendix G

FEMA Flood Insurance Rate Map, Hampton, NH



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHA) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (base flood) also known as the base flood is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually areas with no sloping terrain); average depths determined; for areas of shallow fan flooding velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently abandoned; Zone AE locations that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area so protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (water velocity); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (water velocity); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPA)**

OPA areas are OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone (X) boundary
- EFHM and SFHA boundary
- Boundary defining Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation (in and value; elevation in feet)
- Base Flood Elevation value where uniform within zone; elevation in feet

*Referenced to the National Geodetic Vertical Datum of 1929

- Close section line
- Traverse line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

2000-meter Universal Transverse Mercator grid tick values are 1000000 + 1

2000 Grid, New Hampshire State Plane coordinate system, NAD 83, UTM Zone 18N, UTM Mercator projection.

Bench mark (see explanation in Notes to Users section of the FIRMA panel)

MVF: MAP VERTICAL

Effective Date of Countywide Flood Hazard Rate Map: MAY 17, 2005

Effective Date of Revision to this Panel

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-456-3434.



PANEL 0430E

**FIRM
FLOOD INSURANCE RATE MAP**

**ROCKINGHAM COUNTY,
NEW HAMPSHIRE
(ALL JURISDICTIONS)**

PANEL 430 OF 681

(SEE MAP INDEX FOR OTHER PANEL LAYOUTS)

COMMUNITY	DATE	NO.	DATE
ROCKINGHAM COUNTY	05/17/05	0430E	05/17/05
ROCKINGHAM COUNTY	05/17/05	0430E	05/17/05
ROCKINGHAM COUNTY	05/17/05	0430E	05/17/05

Note: Use the Map Number shown above to be used for flood insurance rate maps. The Community Map Number shown above should be used for insurance applications for the subject community.

**MAP NUMBER
33015C0430E**

**EFFECTIVE DATE
MAY 17, 2005**

Federal Emergency Management Agency

NOTES TO USERS

This map is based on topographic, hydrographic, and other data furnished by the National Flood Insurance Program. It shows the estimated extent of areas expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map. It is not intended to be used as a basis for design or construction.

Legend: Areas shaded in light blue indicate areas that are expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map. Areas shaded in dark blue indicate areas that are expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map. Areas shaded in light green indicate areas that are expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map.

Other: Areas shaded in light blue indicate areas that are expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map. Areas shaded in dark blue indicate areas that are expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map. Areas shaded in light green indicate areas that are expected to be flooded from the indicated source of water under the conditions and assumptions stated on this map.

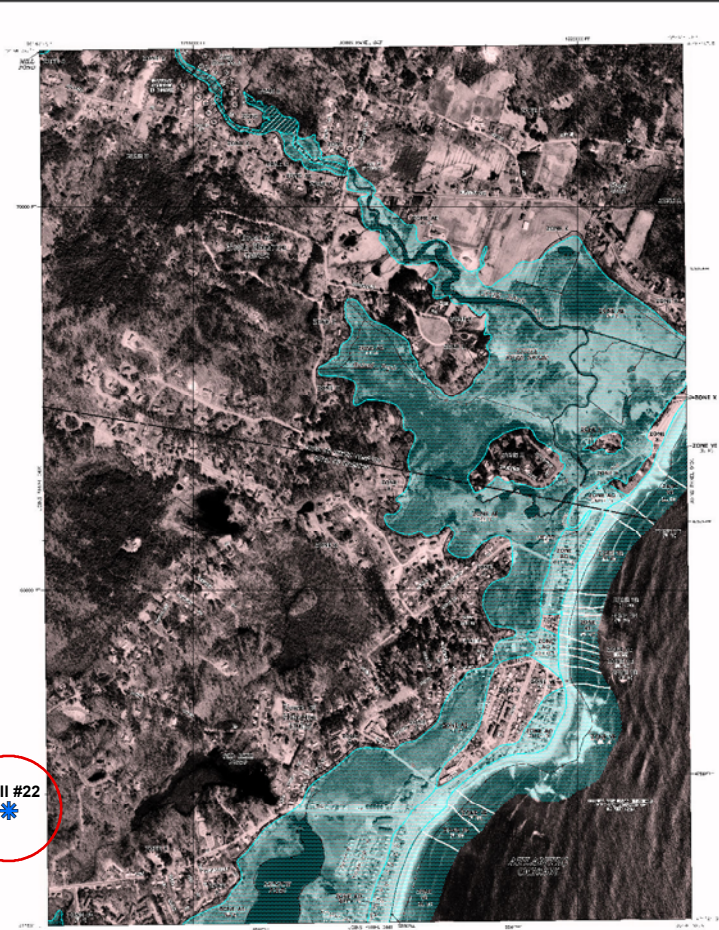
Scale: 1 inch = 1 mile

Projection: North Carolina State Plane, NAD 83

Source: National Flood Insurance Program, FEMA

Revision: 1/15/2015

Well #22



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SUBJECT TO PREMIUMS) - 1% ANNUAL FLOOD FLOOD RISK
- SPECIAL FLOOD HAZARD AREAS (SUBJECT TO PREMIUMS) - 0.2% ANNUAL FLOOD FLOOD RISK
- SPECIAL FLOOD HAZARD AREAS (SUBJECT TO PREMIUMS) - 1% ANNUAL FLOOD FLOOD RISK
- OTHER AREAS
- ROAD
- RAILROAD
- CANAL
- DAM
- DRAINAGE CANAL
- DRAINAGE CANAL
- DRAINAGE CANAL
- DRAINAGE CANAL
- DRAINAGE CANAL
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FIRM
FLOOD INSURANCE RATE MAP
ROCKINGHAM COUNTY,
NEW HAMPSHIRE
(ALL FLOOD ZONING)

MAP SCALE 1" = 1 MILE

FEDERAL BUREAU OF SURVEY
NATIONAL CENTER FOR GEOSPATIAL INFORMATION

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANOGRAPHIC AND MARINE ADMINISTRATION

EFFECTIVE DATE
MAY 15, 2015

FEDERAL BUREAU OF SURVEY
NATIONAL CENTER FOR GEOSPATIAL INFORMATION

Appendix H

NH Natural Heritage Bureau Correspondence

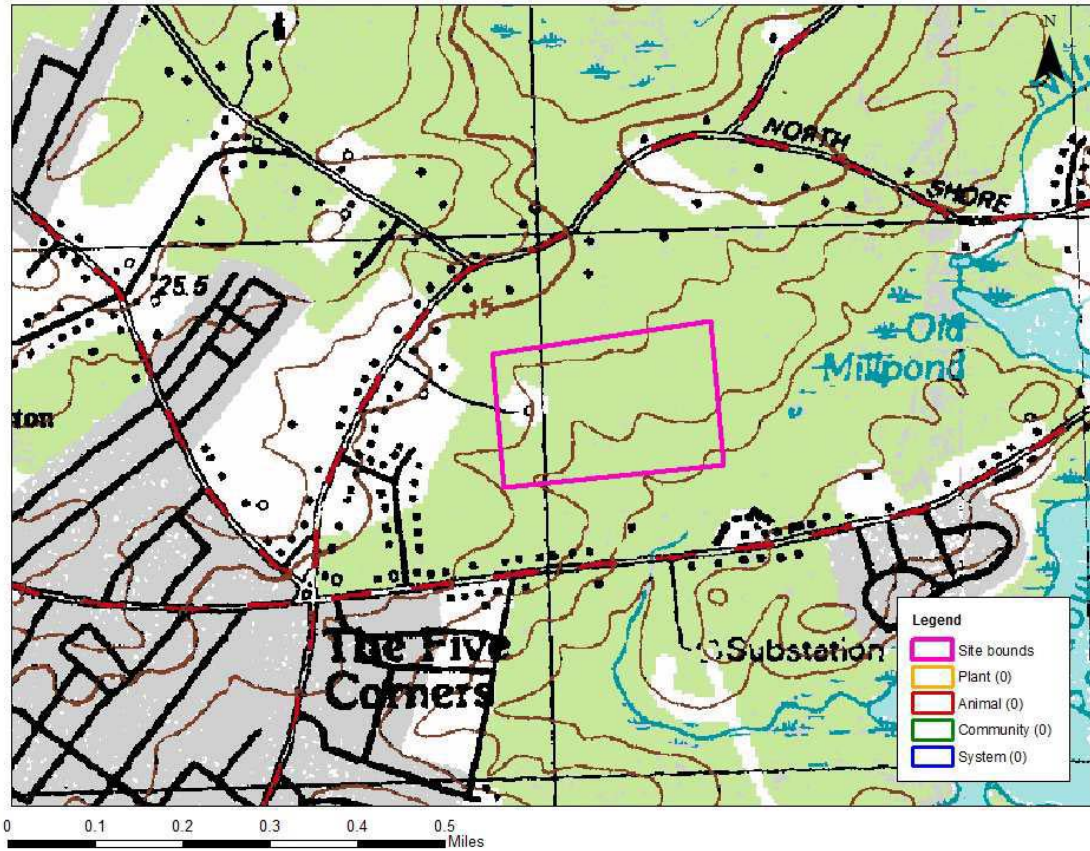


NEW HAMPSHIRE NATURAL HERITAGE BUREAU
NHB DATACHECK RESULTS LETTER





NHB17-0383



Appendix I

Private Well Owner Notification Letter and Questionnaire

FORM LETTER REQUESTING ACCESS TO MONITOR WATER LEVELS IN A PRIVATE WATER SUPPLY WELL

**This is the form letter provided by NHDES
in accordance with Env-Dw 302.14(h)(1)**

March 17, 2017

Dear Well Owner:

AQUARION WATER COMPANY of NEW HAMPSHIRE and its consultant GEOSPHERE ENVIRONMENTAL MANAGEMENT, INC. are requesting information pertaining to your private well, and permission to access your well in relation to permitting a new bedrock public water supply well (i.e., a large groundwater withdrawal permit for a new source greater than 57,600 gallons/day) off **Little River Road, in Hampton, NH**. The laws of the State of New Hampshire (RSA 485:3 and 485-C) require that any entity developing a new large groundwater withdrawal assess if the withdrawal may adversely impact existing water users. A new large groundwater withdrawal is not allowed by the State if it is determined that unmitigated adverse impacts may occur to existing water users or environmental resources.

You are not required to provide **AQUARION** information about your well, or to grant them permission to access your well to collect water level measurements. However, any information you provide, or monitoring data that is collected from your well will allow the New Hampshire Department of Environmental Services (NHDES) to more fully assess if the withdrawal proposed by **AQUARION** will adversely impact your water supply. In the absence of having information about, or having access to your well, the impact assessment will be completed using data collected from other nearby wells, or be based upon technical estimates.

The collection of water level measurements in your well will likely include the temporary installation of a water level measuring device that automatically records a water level measurement every minute. This device is installed in your well, above the pump. The device is generally left in the well for a period of two to four weeks, so that the water level in your well can be measured prior to, during, and after the proposed withdrawal test.

If you agree to allow **AQUARION** to monitor your water well, then **AQUARION** is required by law to complete the following in writing:

- 1) Request permission from you in writing to access your well;
- 2) Define who is responsible for preparing the source for monitoring;
- 3) State the monitoring requirements (duration of monitoring, frequency of visits to the well);

- 4) Include an offer to disinfect and reseal the source when monitoring ends. If well disinfection is requested or required, you should be notified by the **AQUARION** in writing when disinfection of the well will occur, and informed that you should not drink or bathe in the water after the well is disinfected and until it is completely flushed;
- 5) Indicate that testing of the proposed withdrawal will cease, or potable water will be provided, should your water needs be affected by the test;
- 6) Identify the name and phone number of the contact person in the event of water outage or other emergency during testing.

A primary concern of introducing foreign objects into a water well is that bacteria may be introduced into the well and adversely impact water quality. NHDES recommends that **AQUARION** collect and analyze samples for total coliform bacteria, e-coli bacteria, and for non-coliform organisms, in conformance with NHDES sanitary practice guidelines (see enclosed fact sheet). NHDES recommends that these biological water quality samples be collected prior to installing, and after removing monitoring equipment from the well in order to document pre- and post-monitoring water quality conditions. You may require that **AQUARION** collect these samples, and provide the laboratory results to you, and to no other third party entity, if you allow your well to be monitored. If bacteria are introduced into your well during monitoring, **AQUARION** is required to disinfect the well.

Should you like more information regarding the State's Large Groundwater Withdrawal regulations, please contact Christine Bowman at (603) 271-8866 or Christine.Bowman@des.nh.gov or visit the NHDES website at www.des.nh.gov/dwspp/lgwith.htm.

WATER WELL QUESTIONNAIRE

Aquarion Water Company of New Hampshire (AQUARION) has filed an application for a Large Groundwater Withdrawal Permit with the New Hampshire Department of Environmental Services (NHDES). AQUARION and its consultant, Geosphere Environmental Management, Inc. (GEOSPHERE), are in the process of identifying private well water users in the vicinity of the proposed withdrawal. In order to obtain this information, requesting that private well owners fill out the following questionnaire. Your well installer or real estate agent may be able to assist you in providing the information on this questionnaire. If available, please provide a copy of the well driller's log.

Name _____ Telephone No. _____

Address _____ Tax Map _____ Lot No - _____

Is your well for domestic use only? Yes ___ No ___ If no, what are your non-domestic uses and what quantity of water is used each day?

What year did you purchase home? _____ Number of residents in the house? _____

Well Type (bedrock, dug, driven point) _____ Well Driller: _____

Date Installed _____ Well Depth _____ ft Well Diameter _____ Inches

Casing Depth _____ ft (Estimated)

Yield (gallons per minute) _____ Estimated Water Depth _____ ft Pump Size _____ HP

Pump Depth _____ ft Pump Age _____ yrs Estimated Depth to Bedrock _____ ft

Do you have more than one (1) well on the property? Yes ___ No ___ If so, what type of well?

List any water treatment equipment:

Describe any water shortage problems with the well; when and why:

Describe any changes in water quality; when and why:

Describe any maintenance performed on your well or pump:

May your well be used to monitor water levels during the pumping test to be performed by Aquarion? (Please circle your answer) YES____ NO____

If yes, the monitoring will be preceded by water quality testing in conformance with NHDES guidance protocol (see attached). This sampling and testing will assist in the development of baseline water quality data for the area near the withdrawal. This will be valuable information for the long term monitoring of ground water quality.

Additional comments or known problems with your well:

Signature: _____

Date:_____

Your participation in the questionnaire is not mandatory. Those wishing to participate should return the completed form in the enclosed self-addressed stamped envelope to David Niemeyer at GEOSPHERE, 51 Portsmouth Avenue, Exeter, NH 03833 or FAX the form to (603) 773-0077 by MM/DD/YYYY. A copy of this completed questionnaire will be sent to Christine Bowman of NHDES. If you have questions, contact David Niemeyer at (603) 773-0075 ex. 12 or Christine Bowman at (603) 271-8866.

May your well be used to monitor water levels during the pumping test to be performed by Aquarion? (Please circle your answer) YES____ NO____

If yes, the monitoring will be preceded by water quality testing in conformance with NHDES guidance protocol (see attached). This sampling and testing will assist in the development of baseline water quality data for the area near the withdrawal. This will be valuable information for the long term monitoring of ground water quality.

Additional comments or known problems with your well:

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