FIFTH FIVE-YEAR REVIEW REPORT FOR TINKHAM GARAGE SUPERFUND SITE ROCKINGHAM COUNTY, NEW HAMPSHIRE

Prepared by

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Region 1
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LIST OF ABBREVIATIONS & ACRONYMS

AGQS-	Ambient Groundwater Quality Standards
ARAR -	Applicable or Relevant and Appropriate Requirement
AROD -	Amended Record of Decision
bgs -	Below Ground Surface
CERCLA -	Comprehensive Environmental Response, Compensation, and Liability Act
CFR -	Code of Federal Regulations
COCs -	Contaminants of Concern
COPC -	Contaminants of Potential Concern
(cis-)1,2-DCE -	cis-l,2-dichloroethene
1,2-DCA -	1,2-Dichloroethane
1,1-DCE -	1,1-Dichloroethene
EPA -	United States Environmental Protection Agency
ESD -	Explanation of Significant Differences
FS -	Feasibility Study
FYR -	Five-Year Review
GMP -	Groundwater Management Permit
GMZ -	Groundwater Management Zone
ICs -	Institutional Controls
HA -	Health Advisories
HHRA -	Human Health Risk Assessment
LTRA -	Long Term Remedial Action
MCLs -	Maximum Contaminant Levels
MCLG -	Maximum Contaminant Level Goals
MDL -	Method Detection Limit
MNA -	Monitored Natural Attenuation
MOM -	Management of Migration
Ng/L -	Nanograms per Liter (Parts per trillion)
NHDES -	New Hampshire Department of Environmental Services
NCP -	National Oil and Hazardous Substances Pollution Contingency Plan
NPL -	National Priorities List
OU -	Operable Unit
O&M -	Operation and Maintenance
PCE -	Tetrachloroethene
PFAS-	Per- and Polyfluoroalkyl Substances
PFBS -	Perfluorobutane Sulfonate
PFOA -	Perfluorooctanoic Acid
PFOS -	Perfluorooctane Sulfonic Acid
ppm -	Parts per million
ppb -	Parts per billion
Ppt -	Parts per trillion
POTW -	Publicly Owned Treatment Works
PRP -	Potentially Responsible Party
PQL -	Practical Quantitation Limit
QAPP -	Quality Assurance Project Plan
RA -	Remedial Action
RAO -	Remedial Action Objectives
RA -	Remedial Action
RCRA -	Resource Conservation and Recovery Act
RfC -	reference concentration

RfD -	reference dose
RI -	Remedial Investigation
ROD -	Record of Decision
RPM -	Remedial Project Manager
SVOCs -	Semivolatile Organic Compounds
1,1,1-TCA -	1,1,1-Trichloroethane
TCE -	Trichloroethene
TG -	Tinkham Garage
UU/UE -	unlimited use and unrestricted exposure
UCL-	upper confidence limit
µg/L -	micrograms per liter (parts per billion)
VEE-	vacuum-enhanced extraction
VOCs -	Volatile Organic Compounds
yd^{3-}	cubic yards

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in five-year review reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the fifth FYR for the Tinkham Garage (TG) Superfund Site (Site). The triggering action for this policy review is the previous FYR, which was completed on September 17, 2014. This FYR has been prepared because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of one operable unit (OU), the Tinkham Garage Site, which required both source control (SC) and Management of Migration (MOM) components. This fifth FYR focuses on remedial action implementation associated with the OU1 MOM (i.e. the groundwater remedy), which included the extraction and treatment of bedrock and shallow groundwater to remove concentrations of volatile organic compounds (VOCs) and modification to monitored natural attenuation (MNA) in 2003. The remedial action associated with OU1 source control (i.e., soils) was completed prior to the first Five-Year Review. This fifth FYR includes an overview of the Site, Remedial Action Objectives (RAOs), and remedy components. Remedial protectiveness is evaluated using the most recent monitoring data along with a series of evaluations involving groundwater flow and MNA.

The Tinkham Garage Superfund Site Five-Year Review was led by Cheryl Sprague, EPA Remedial Project Manager (RPM). Participants included Courtney Carroll, EPA Human Health Risk Assessor; Richard Sugatt, EPA Ecological Risk Assessor; RuthAnn Sherman, Enforcement Counsel; Kelsey Dumville, EPA Community Involvement Coordinator; and Andrew Fuller, New Hampshire Department of Environmental Services (NHDES) Project Manager; with support from Weston Solutions, Inc., contractor to NHDES. The review began on February 8, 2019.

Site Background

The Tinkham's Garage Superfund Site (Site) includes approximately 375 acres of primarily residential, commercial, as well as undeveloped lands and wetlands located approximately one mile southwest of the intersection of Interstate Route 93 and State Route 102 in Londonderry, New Hampshire.

In 1978, approximately 400 people resided within the Londonderry Green Apartments (now the Woodland Village Condominium complex), which consisted of thirteen multi-unit buildings. Additional housing included private, one-family homes along Mercury and McAllister Drive in the northern sector of the site, and along Gilcreast Road and Ross Drive bordering the site to the south, and east. The Tinkham Garage is located on property behind the Tinkham Realty Office in the northeastern sector of the site. A 57-acre wetland existed to the south and east of the garage. In 2001, Home Depot purchased land abutting the Tinkham Garage and constructed a retail shopping center including a Staples, 99

Restaurant, and Dunkin' Donuts. A portion of the Home Depot development was constructed in the area of the Site where remedial actions took place to address contaminated soils and shallow groundwater. In January 2003, Gilcreast Realty Holdings II, LLC purchased the 95-acre undeveloped area in the central portion of the Site for development into active senior housing called The Nevins.

Topography across the site is relatively flat with surface drainage from north to south, overburden groundwater flow towards the south-southeast and groundwater discharges toward Beaver Brook and a large wetland area south/south-west of the condominium area.

Initial complaints of excessive foam and odors occurring in a residential water supply well on Ross Drive and in an adjacent small unnamed brook (which runs along the Tinkham Garage property and crosses Ross Drive to the south/southeast) led the Londonderry Health Department to evaluate activities at the Tinkham Garage in April 1978. Their investigation concluded that liquids, lubricating oils, septic sludges, and other substances from tank truck washings dumped behind the Tinkham Garage directly to the ground surface were migrating into the wetland and toward Ross Drive via this brook. A subsequent citizen complaint to the New Hampshire Water Supply and Pollution Control Commission (NHWS&PCC), now the NHDES, resulted in ordering a cleanup involving removal of the surface contamination, and excavation of a diversion trench to direct surface water run-off from behind the garage area away from Ross Drive. Contamination from waste disposal discharges behind the Tinkham's Garage reportedly ceased in 1979.

EPA completed a Preliminary Assessment at the Site in August 1981 that showed groundwater, as well as soil and surface water, were contaminated with numerous volatile organic compounds (VOCs). At the time of the site's discovery, the site and surrounding residential areas relied on bedrock water supply wells to provide potable water. In January 1983, the drinking water supply well (LGSW) servicing the Londonderry Green Apartments (presently Woodland Village Condominiums) and several residential water supply wells along Mercury and McAllister Drives were taken out of service because of documented and potential organic chemical contamination. These residents were temporarily supplied bottled water and point of entry (POE) treatment systems until a feasibility study was completed and a permanent water line was installed by the NHWS&PCC (NHDES) under a cooperative agreement between the State and the EPA in November 1983.

The Site was added to the National Priorities List (NPL) in September 1983.

Refer to Appendix A for a list of documents reviewed and references considered and Appendix B for a chronology of site-related activities and information. Monitoring Data and Tabled information is included in Appendix C while site plans and figures used to support this FYR are included in Appendix D.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Tinkham Garage Superfund Site		
EPA ID: NHD062004569		
Region: 1	**State:** NH	**City/County:** Londonderry / Rockingham County

SITE STATUS	
NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA ***[If "Other Federal Agency", enter Agency name]*:**
Author name (Federal or State Project Manager): Cheryl Sprague (Remedial Project Manager)
Author affiliation: EPA Region 1
Review period: 9/17/2014 – 9/17/2019
Date of site inspection: 6/17/2019
Type of review: Policy
Review number: 5
Triggering action date: 9/17/2014
Due date *(five years after triggering action date)*: 9/17/2019

II. RESPONSE ACTION SUMMARY

BASIS FOR TAKING ACTION

The Tinkham Garage served as a facility for the storage, maintenance and cleaning of tankers associated with Tinkham Enterprises. These activities resulted in improper waste disposal activities at the Site, and the release of hazardous substances, detergents, septage and oils. The predominant releases at the Site were generally considered to be associated with four major release or "source" areas:

1. The field and wetland areas behind and east of the Tinkham Garage;
2. The leach fields of the Londonderry Green apartments (now the Woodland Village Condominium Complex);
3. A soil pile behind condominium building C; and
4. A solvent swale located adjacent to condominium buildings E and F and the tributary which migrates through the condominium development.

The swale, which was reported as an open, water filled trench, was noted as containing extremely high levels of toluene (15 ppm) and 1,1,1-trichloroethane (1,1,1-TCA) (6 ppm) in surface water and 2 ppm toluene and 35 ppm 1,1,1-TCA in soils in October 1982. (NUS, 1983 and 1984) This trench was backfilled on November 18, 1982, by the owners of the Londonderry Green Apartments, at the request of the EPA.

Ground water as well as soil and surface water, were contaminated by volatile organic compounds. Routes of exposure from groundwater and soil include ingestion of contaminated groundwater and direct contact and incidental ingestion of contaminated soils.

Groundwater at the Site was the primary source of drinking water prior to 1983 when the alternative water supply line was installed. The bedrock aquifer is considered a potential drinking water source and remains the source of drinking water for residents living near the site within the neighborhoods of Ross Drive, Tokanel Drive, Gilcreast Road, Boston Avenue, Charleston Avenue and Albany Avenue. The Human Health Risk Assessment (HHRA), conducted as part of the original Remedial Investigations (RI), concluded that the bedrock aquifer was contaminated and posed an unacceptable risk from ingestion, though the provisions made in 1983 to provide residents on-site with an alternative water supply significantly reduced the potential for exposure to contaminated groundwater. Because of the installation of the waterline there were, at the time, no residents or other users of groundwater within the Site, and therefore no current exposures to groundwater and no current risk. However, the exposure potential for future risk remained through the use of these nearby private residential wells which continued to draw water from the aquifer for their drinking water source. The RI concluded that the potential existed for contaminated groundwater to migrate to residential wells still in use within nearby neighborhoods, and specifically the Ross Drive and Tokanel Drive neighborhood, located south of the Site, representing a future potential exposure to contaminated groundwater and a future risk. There have been no changes in land use at the site which would change the exposure assumptions contained in the ROD.

The HHRA also concluded that contaminated soils in the source area behind the Tinkham Garage presented a direct contact and incidental ingestion risk to sensitive populations, such as children, though access was deemed limited and the greater risk posed by contaminants in soil was the potential for VOCs to continue to leach into the groundwater above and exceed cleanup standars. Contaminants that

were detected in condominium area soils, on-site surface waters and associated sediments were concluded not to pose a significant risk to public health and welfare and the environment through direct contact and incidental ingestion.

An ecological receptor assessment was also performed as part of the 1986 RI, however it was limited to the sampling of surface waters in and migrating toward the nearby Beaver Brook, which is used for fishing and which discharges into the Merrimack River. No ecological concerns have been associated with the low levels of VOCs (including 1,4-dioxane) discharging into and present in the surface waters of the intermittent streams located within the Groundwater Management Zone (GMZ).

While many hazardous substances were brought to and released to the subsurface at the Site, the primary contaminants of concern and the basis for the soil and groundwater clean-up are VOCs. The 1986 ROD included chemicals of concern (COCs) for both soils and groundwater based on chemicals that could result in unacceptable levels of human health risk through potential leaching to and/or contaminant concentrations exceeding cleanup levels or MCLs in groundwater.

The 1986 ROD, as amended, required the remediation of all contaminated soils containing greater than 1 mg/kg total Volatile Organic Compounds (TVOCs) to a concentrations of 1 mg/kg (ppm) total VOCs or less. The 1988 pre-design investigations assessed the extent of the soils requiring treatment. The source control remedial action specified that the contaminated soils from the Soil Pile, I/J Leach field, and K/L leach field would be excavated and transported to the Garage Area, where all the contaminated soils would be treated using Dual Vacuum Extraction. A total of 3,558 yd^3 of soil was excavated from the condominium areas and placed over the central portion of the roughly 1 acre designated as containing 6,500 yd^3 of contaminated soils in the field behind Tinkham Garage. Shallow overburden groundwater behind the garage, with concentrations of total volatile organic compounds ranging from below detection limits (BDL) to a maximum of 32 mg/1 (milligrams per liter or ppm) required pretreatment prior to mixing with groundwater extracted from the bedrock aquifer near the condominiums and sent to the Derry POTW for treatment. (EPA, 1986; Malcolm Pirnie, 1988).

At the time of the 1986 ROD, VOC concentations in groundwater ranged from approximately 1 µg/L to 6,700 µg/L total VOCs and the upper limit lifetime cancer risk was estimated at $2 \times l0^{-2}$. As a result, the bedrock aquifer presented unacceptable risks and was undrinkable. Groundwater COCs were defined in the 1986 ROD, however the basis for the ROD cleanup was attainment of MCLs for TCE and PCE, the primary constituents found in groundwater at the time. The 2016 ESD later added 1,4-dioxane as a groundwater COC and selected a cleanup level of 3 ppb.

Remedial Action Objectives (RAOs)

The remedial action objectives presented in the 1986 ROD for source control and management of migration response alternatives were developed to mitigate existing and future potential threats to public health and the environment.

The remedial action objectives for source control were to:

1. Prevent or mitigate further release of contaminants to the surrounding environmental media and

2. Eliminate or minimize the threat posed to public health, welfare and the environment from the source area.

The source control component of the remedy required vacuum extraction until contaminant levels in soil were reduced to a level of 1 mg/kg total VOCs or less. The source control remedy was completed in September 1995. Confirmatory soil sampling verified compliance with the remediation objectives.

The remedial objectives for the on-going management of migration are to:

1. Prevent or mitigate further migration of contaminants beyond their current extent and

2. Eliminate or minimize the threat posed to public health, welfare and the environment from the current extent of contaminant migration.

The first objective, preventing or mitigating further migration of contaminants beyond their current extent, addresses the migration pathways affecting contaminated groundwater on site. Those pathways included: further transport within the bedrock aquifer via groundwater flow through bedrock fractures (of special concern was transport to residential wells along Ross Drive); surficial exposure of contaminated groundwater via the vertical upward component of groundwater flow in artesian wells located on site (i.e. in the condominium complex and along Mercury Drive), and migration to surface water via groundwater recharge to the unnamed tributary.

RESPONSE ACTIONS

1986 ROD

This ROD included cleanup of contaminated soil by either aeration, composting, or soil washing. The 1986 ROD as amended, established a target cleanup level of 1 ppm total VOCs or less for treatment of the contaminated soils. The 1 ppm total VOC corresponded to the lateral extent of contamination while the vertical extent would proceed to the seasonal low water table.

The groundwater cleanup required: (1) removal of VOC contaminated groundwater from the overburden and bedrock aquifers through the use of two former bedrock supply wells (LGSW and LGAW), and a shallow trench to be located behind the Tinkham Garage building; (2) transfer of contaminated groundwater through a force main and pump station to the Derry Publicly Owned Treatment Works (POTW) for off-site treatment; (3) pre-treatment of extracted groundwater on-site as necessary to attain pretreatment standards required by the Derry POTW; and 4) monitoring of residential water supply wells which continue to be used for drinking water purposes. The installation of the water line for private residences and the condominiums in 1983 was relied upon for the continued protection of public health in the selection of the 1986 remedial action as well as the extension of the water line for residences and commercial properties built within the boundaries of the Site since 1986.

1989 Administrative Consent Order (AOC)

This AOC required performance of additional characterization prior to implementation of the remedy and the assessment of which condominium leach field(s) posed a threat to groundwater, the extent and method of leach field remediation required, the determination of the extent and volume of the contaminated soils requiring treatment in the garage area, solvent swale and soil piles areas, and evaluation of soil treatment technologies and characterization of the groundwater to be included in the

groundwater remediation. These pre-design studies concluded that the leaching fields were having a detectable effect upon the overburden and shallow bedrock aquifers, that VOCs were directly beneath and downgradient of both leaching fields K/L and I/J, and that approximately 9,000 yd^3 of contaminated soils required remediation.

A pumping test performed as part of those pre-design investigations concluded that the Ross Drive area residential supply wells, of concern during the RI, "are relatively secure from potential contamination from the garage area." That study concluded that the orientation of the bedrock fracture set precluded direct migration in the bedrock aquifer from the source area toward Ross Drive and further hydraulic gradients in the aquifer under static (non-pumping) conditions would not favor migration toward Ross Drive. The report concluded that contaminant migration from the garage source area was principally south/south west, and toward the tributary located within the Woodland Village Condominiums (Malcom Pirnie 1988 Pre-design report).

March 1989 ROD amendment

This ROD amendment changed the remedial approach for soils to vacuum-enhanced extraction (VEE) which, in turn, allowed the shallow groundwater extraction remedy to be modified from the planned trench behind the Tinkham Garage building, to a well system installed as part of the VEE. Groundwater extraction would proceed for a two-year period from the date of implementation to assess progress towards meeting the remedial objectives for the cleanup of groundwater at the Site. The ROD stated that should steady state conditions be reached, and the remedial objectives set for groundwater were not achievable, EPA would re-evaluate the objectives and its remedial approach for groundwater at the Tinkham Site.

1989 CD

A Consent Decree for the comprehensive settlement of all the Cannons Engineering Sites required the PRPs to implement the remedial action. The Decree was entered by the District Court and became effective on August 14, 1989. Following entry of the Decree, the PRPs began the remedial design and planning for remedial action.

Remedial Actions

The provision of the alternate drinking water source (1983 waterline) reduced the potential for exposure to contamination at the Site and protected public health while cleanup activities were being completed. The source control component of the remedial action initiated in 1994, was completed in 1995 following attainment of soil cleanup levels.

Groundwater extraction was initiated in May 1995. Bedrock groundwater was extracted from the two previous condominium supply wells, LGAW and LGSW, and was conveyed back on-site via a dedicated pipeline. At the Tinkham Garage source area, shallow groundwater was removed using the vacuum extraction wells and pretreated on-site via an air stripper and carbon, before the combined flow rate of 110,000 gallons per day was discharged to the Derry POTW. Following attainment of the soil remedial goals in November 1995, the VEE system was dismantled, and the shallow groundwater extraction system was modified to include six independent wells pumping a combined flow of 4,500 gallons per day; however reduced contaminant levels allowed pretreatment to be discontinued, prior to discharge to the POTW. In July 1996, the potentially responsible party (PRP) group requested a temporary shutdown

of the two bedrock pumping wells on the basis that VOC contamination had reached steady-state conditions and a temporary shutdown of the two-bedrock ground water extraction wells was granted.

In May 1997, the PRPs requested that EPA consider the permanent shutdown of the complete groundwater extraction system based on evidence of natural attenuation through active biodegradation in the shallow aquifer, attainment of steady-state conditions in the bedrock aquifer, and an estimate that drinking water standards were expected to be achieved via natural attenuation within a 15-year period. Monthly monitoring of VOC levels in the two bedrock wells LGSW and LGAW, performed from July 1996 through February 2001, documented that VOC concentrations in both wells, and other bedrock monitoring wells throughout the site, remained "statistically constant."

2003 ESD

A 2003 ESD documented the data collected to support a change in the groundwater remedy from active extraction and treatment to the use of natural attenuation processes to reduce residual concentrations in groundwater at the Site to the 1986 ROD cleanup levels within 15 years and determined that the use of a natural attenuation remedy would eliminate or minimize migration of contaminants and be protective of public health and the environment in the long-term and in the interim, relied upon monitoring and implementation of institutional controls as part of a NHDES GMP.

The first GMP was issued by the NHDES in 2002 and subsequently renewed in 2007, 2012, and again in 2019. The GMP is used to establish the boundaries of the groundwater management zone (GMZ), and manage the use of contaminated groundwater. In addition, currently the GMP is relied upon to implement the ROD/ESD required monitoring at the Site.

The 2003 ESD required the collection of performance monitoring and continued assessment to assure the long-term effectiveness of natural attenuation and attainment of groundwater standards within a reasonable timeframe. The GMP is being relied upon to ensure that monitoring required in the ROD/ESDs is being performed and includes monitoring of select wells on either a semi-annual or annual basis. Long-term monitoring suggests that anaerobic degradation processes are reducing chlorinated VOCs in groundwater at the Site, but concentrations of VOCs, and 1,4-dioxane remain elevated and in excess of ROD and ESD cleanup standards.

2016 ESD

In 2016, EPA issued an ESD which set a cleanup level for 1,4-dioxane at 3 ug/l and required connection of a waterline to impacted households along Charleston and Boston Avenues, following confirmation of cleanup level exceedances for VOCs, including 1,4-dioxane within their bedrock water supply wells. The ESD also required a bedrock remedial investigation to assess residual contamination in groundwater at the site and migration pathways.

A summary of the groundwater cleanup standards to be met at the completion of the remedy is included below in Table 1:

Table 1

Summary of Groundwater Cleanup Levels
Tinkham Garage Superfund Site Londonderry, New Hampshire

Chemical of Concern (COC)	Date of Establishment	Groundwater Cleanup Levels	Basis for Cleanup Level	Notes
Tetrachloroethylene	ROD - 1986	5 µg/L	MCL	The 1986 ROD set a cleanup level of 5 ppb for PCE, which is the MCL for TCE, even though an MCL had not yet been promulgated for PCE because PCE has similar chemical, physical and toxicological properties as TCE. In 1991, EPA promulgated the same cleanup level of 5 ppb for PCE.
Trichloroethylene	ROD - 1986	5 µg/L	MCL	
1,4-Dioxane	ESD - 2016	3 µg/L	NH AGQS	Emerging contaminant added to the groundwater monitoring program in 2008 due to known association with chlorinated solvents previously identified in site groundwater. The 2016 ESD set the cleanup at 3 ug/l (NHDES promulgated a 3 ug/l AGQS in 2005).

Status of Implementation

A summary of the major remedy components and their status include:

OU1 Source Control (Soils): Completed.

EPA signed a Record of Decision (ROD) on September 30, 1986, which called for excavation of contaminated soils containing greater than 1 mg/kg total VOCs from behind the Tinkham Garage and treatment by either aeration, composting or soil washing to a concentration of 1 mg/kg total VOCs or less. Contaminated soils from the Londonderry Green Apartment area (presently Woodland Village Condominiums) were to be evaluated further. On September 11, 1987, EPA entered an Administrative Consent Order which required the PRPs to perform pre-design studies to evaluate various soil treatment technologies and determine the full extent of soil and groundwater contamination. The pre-design study concluded that vacuum extraction was the preferred soil treatment technology, that approximately 9,000 yd^3 of contaminated soil required treatment (including soil behind the garage and from two leach fields and a soil pile in the condominium complex), and that two bedrock supply wells located in the

Woodland Village Condominium Complex were hydraulically connected to the contaminated shallow aquifer behind Tinkham Garage. Based on results of the pre-design study, a ROD amendment was approved on March 10, 1989 which called for all contaminated soils from the garage and condominium areas be treated by vacuum extraction and that groundwater remediation be performed by simultaneously extracting groundwater from the shallow aquifer near the designated soil source area behind Tinkham Garage and from the two bedrock wells (LGSW and LGAW) located within the condominium complex. The shallow groundwater extraction and soil remediation would be accomplished by a dual-phased vacuum extraction system (DVE). Treatment would be performed via discharge of the contaminated water to the Derry Publicly Owned Treatment Works (POTW), following on-site pre-treatment of shallow groundwater. Groundwater remediation would continue until drinking water standards were obtained for all VOCs, including the primary groundwater contaminants at that time, trichlorethylene (TCE) and tetrachloroethylene (PCE).

Implementation of the remedy required extension of a municipal sewer line from the Town of Derry. Delays in the sewer line extension lead EPA to issue an Explanation of Significant Differences (ESD) on January 21,1992. That ESD required the PRPs to construct an on-site treatment and recharge system for groundwater rather than relying on construction of a sewer line to initiate remedial activities. In response, the PRPs performed a Subsurface Groundwater Infiltration Study in March 1992. Results of the study concluded that on-site recharge at the required flow rates was not feasible. However, following issuance of the ESD, an agreement between the towns of Londonderry and Derry was reached and construction of the sewer line began in March 1993. Construction of the sewer line allowed on-site soil remediation to begin in March 1994, and active DVE remediation began in November 1994. The DVE system achieved the soil clean-up goal in September 1995.

<u>OU1 Management of Migration (Groundwater): On-going</u>.

The 1986 ROD, as modified, required groundwater to be extracted from the shallow aquifer behind the Tinkham Garage and from two bedrock supply wells located within the condominium complex. From May 1995 until November 1996, during the Source Control operations, groundwater was extracted and pumped to the Derry POTW following on-site pre-treatment. In November 1995, following the attainment of the soil cleanup levels, the shallow groundwater extraction system was modified to an operation of 6 shallow wells, independent of the former DVE system, and with direct pumping of groundwater to the Derry POTW for treatment. In July 1996, the PRPs requested a temporary shutdown of the two bedrock wells on the basis the that VOCs had reached steady state. In May 1997, the PRP's requested a permanent shutdown of all pumping wells on-site based on a report submitted by their consultant, GEI, that bioremediation mechanisms were evident, and that natural attenuation would result in the attainment of groundwater remediation goals in the shallow aquifer within a 15-year time period. A 2003 ESD modified the MOM remedy for groundwater from active extraction and treatment to MNA based on those findings and required long-term monitoring of the water quality on-site. Monitoring of nearby residential water supply wells along Ross Drive, a requirement of the 1986 ROD as modified, was performed by NHDES until 2006. On-site long-term monitoring as required by the ROD has been performed under a state GMP since 2002. Institutional Controls (ICs) in the form of a GMZ, was established as part of the GMP to manage the potable use of groundwater.

In 1986, given the active pumping and the short distance to the former condominium supply wells, as well as geological factors, EPA concluded that the disposal area behind the Tinkham Garage was the

primary source of contaminants found toward the west, in the nearby residential supply wells. While the plume of groundwater contaminants has now dispersed across much of the Site and the total VOC concentrations have decreased, contaminant concentrations in excess of cleanup levels remain highest within and near the former source area behind the Tinkham Garage and in one location near Condominium N. Long-term groundwater monitoring continues at the Site as currently outlined and required by the GMP. While concentrations of VOCs, specifically the chlorinated VOCs, have decreased in many locations, and the presence of daughter products, consistent with active biological degradation, are found in groundwater, concentrations of TCE still exceed the target cleanup level for groundwater remediation identified in the ROD (5 µg/L), well beyond the original 15-18 years originally estimated in 1997 to achieve cleanup.

Site data collected from 2014 through 2019 shows areas of high concentrations and general widespread detection of 1,4-dioxane in the bedrock aquifer, and includes detections beyond the GMZ boundary into residential water supply wells downgradient of the site. This data suggests that the time to achieve cleanup standards in groundwater at the Site by natural attenuation will be significantly longer, and further, that natural attenuation alone, may not eliminate or minimize migration nor protect human health per the RAO's set in the ROD for groundwater. The confirmed presence of site related Per- and polyfluoroalkyl substances (PFAS) recently detected in Site groundwater and in nearby residential water supply wells indicates that further evaluation as to whether natural attenuation processes would be able to address PFAS compounds found at the Site may be warranted. Remedial investigations are on-going and are expected to be completed in 2021.

Water supply wells along Boston and Charleston Avenues, found to have concentrations above cleanup levels, were connected to a nearby waterline per the requirements of the 2016 ESD. Assessments of contaminant migration along Mercury Drive and within the Ross and Tokanel Drive neighborhood in 2018 resulted in the PRPs providing bottled water to households exceeding NHDES' revised 1,4-dioxane AGQS in compliance with the GMP. The 2019 GMP renewal included an expansion of the GMZ based upon the review of sampling data collected since 2012 (the last GMP issued), which demonstrated that the plume had expanded and contaminants from the Site had migrated within the bedrock fractures into nearby residential neighborhoods.[1] The 2019 GMP also included increased monitoring requirements for both on and off-site locations to further assess concentrations in groundwater across the Site, plume migration and the potential capture by nearby residential drinking water supply wells which remain in use near the Site.

Systems Operations/Operation & Maintenance

Operations and maintenance activities for the Site currently involves:

[1] Up until 2018, the annual monitoring reports, submitted under the GMP, have concluded that the monitoring results demonstrated migration of the shallow and bedrock plumes beyond its current extent has not occurred, that active natural attenuation is allowing for mostly downward concentration trends and that the remedy remained protective. The annual reports have noted that concentrations in groundwater, while decreasing, would not attain cleanup levels within the 15 years originally predicted.

- Semi-annual and annual groundwater, surface water, and residential supply well sampling for VOCs, 1,4-dioxane and PFAS. Chloride, alkalinity, and other parameters are also analyzed at selected locations to assess natural attenuation potential.
- Inspection and maintenance of the integrity of the groundwater monitoring network.

Institutional Controls (ICs)

Institutional Controls, in the form of a Groundwater Management Permit and Groundwater Management Zone (GMZ) under New Hampshire regulations, or a local ordinance, if one is put in place, will be maintained for groundwater contamination associated with the Site.

Following completion of the source control actions in 1995 and cessation of the bedrock and shallow groundwater pump and treat operations, a GMP was issued by the State of NH in 2002, and subsequently renewed in 2007, 2012 and 2019 (GWP-199004008-L-004). The GMP provides for the necessary institutional controls, as called for in the 2003 ESD, to remain in place until cleanup levels are achieved in groundwater at the Site. Monitoring required by the ROD/ESDs is currently being performed pursuant to the GMP and documented in an annual report. Within the GMZ, the use of groundwater, contaminant concentrations and remedy progress will be monitored until cleanup standards are met. In accordance with Env-Or-600, notification of the GMP is recorded on deeds for properties located within the GMZ to address use of contaminated groundwater until such time as NHDES AGQS are attained.

In May 2019, a revised GMP was approved by NHDES which expanded the GMZ based on monitoring data collected since 2016, along existing property boundaries to include areas of impacted groundwater on Mercury and McAllister as well as Ross and Tokanel (See Table 2 and Appendix B, Table 5)[2]. While not currently included within the GMZ, monitoring is being performed under the GMP, within the nearby Boston and Charleston Avenues neighborhood due to exceedances of cleanup levels for VOCs, including 1,4-dioxane within several water supply wells. The State's GMP requires a contingency plan to provide potable drinking water should a drinking water supply well become impacted above AGQSs or if a new drinking water supply well is discovered within the GMZ. (See Appendix D, Figure 2).

Table 2: Summary of Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date

[2] Although EPA has required ICs for all areas that exceed cleanup numbers in EPA's decision documents, NHDES, in accordance with their GMP, requested that the PRPs increase the size of the GMZ to incorporate any exceedances of the state's AGQS.

current conditions					
Groundwater	Yes	Yes	Parcel numbers are identified in the Site's Groundwater Management Permit (See Appendix B, Table 5)	Monitor groundwater until cleanup levels have been attained	GMP GWP-199004008-L-004 Issued May 17, 2019

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last five-year review as well as the recommendations from the last five-year review and the current status of those recommendations.

Table 3: Protectiveness Determinations/Statements from the 2014 FYR

OU #	Protectiveness Determination	Protectiveness Statement
Sitewide	Short-term Protective	The remedy at the Tinkham Garage Superfund Site currently protects human health and the environment because institutional controls remain in place to prevent use of and exposure to contaminated groundwater. Investigations performed since the 2009 Five Year Review have demonstrated that vapor intrusion is not a concern at the Site and that contaminants in excess of the MCLs and New Hampshire AGQS are within the Groundwater Management Zone. However, for the Site to be protective in the long term and document Site closure, the groundwater monitoring program will be modified to enable observation of water quality conditions within individual fracture zones.

Table 4: Status of Recommendations from the 2014 FYR

OU#	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date
OU1 Sitewide: Management of Migration	Monitoring: VOCs and 1,4-dioxane concentrations in excess of MCLs and/or AGQS remaining within individual fracture zones within the GMZ are not currently monitored.	Modify existing groundwater monitoring program.	On-going	Completed: Downhole geophysical logging was conducted at three deep bedrock wells (FW11D, FW21D and FW-28D, to identify discrete hydraulically-active fracture zones. Results of the sampling were used to design multi-level screen completions. Work on the three bedrock wells was completed as documented in a letter dated June 22, 2018. Monitoring of the discrete zones at FW11D has indicated that significant concentrations of 1,4-dioxane reside within the deepest fractures (55-90 feet bgs) and range in concentration from approximately 447 ppb – 1,510 ppb. Ongoing: Additional bedrock investigations were required in the 2016 ESD following the detection of site contaminants in nearby residential wells, and the connection of five households to a waterline. Since 2016, investigations have shown that several residential bedrock water supply wells along Ross, Tokanel and Mercury Drives are impacted with site contaminants. Bottled water was provided, and the remedial investigations continue to assess the extent of the residual contamination within the	Completed: Three bedrock wells June 22, 2018 To be completed: September 2020

				bedrock aquifer and the migration pathways of contaminants via bedrock fractures. In addition to new monitoring well installations to provide an adequate monitoring well network, additional discrete fracture completions within existing open bore-hole bedrock wells will be required to assess residual mass and contaminant migration for the protection of nearby residences who continue to utilize the bedrock aquifer for their drinking water.	

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available through an EPA Region 1 press release on February 21, 2019, titled "EPA Begins Reviews of Four New Hampshire Superfund Site Cleanups This Year" (https://www.epa.gov/newsreleases/epa-begins-reviews-four-new-hampshire-superfund-site-cleanups-year).

This press release stated that EPA planned to conduct a FYR at several Region 1 sites in New Hampshire, including the Tinkham Garage Superfund Site, and invited the public to contact EPA with any comments or concerns.

While a document repository had been established at the Leach Library in the Town of Londonderry, this repository is no longer maintained as available documents and reports are somewhat limited in comparison to the availability of on-line documents maintained by NHDES and EPA. Both the EPA and NHDES continue to provide publicly-available information on websites maintained by each entity; these can be accessed using the following uniform resource locators (URLs):

EPA's Website for Tinkham Garage: www.epa.gov/superfund/TinkhamGarage

NHDES's One Stop data and information provider:
http://www2.des.state.nh.us/DESOnestop/BasicSearch.aspx

This FYR will be made available at the above listed URLs.

Community Involvement

The Town of Londonderry has been a key player in discussions regarding groundwater at the Site and are informed regularly of the GMZ monitoring and management under the GMP, the on-going remedial investigations and communications with the residents. Overall, EPA and NHDES has maintained close contact with Kevin Smith, Londonderry's Town Administrator, including presentations of on-going investigation work and results, and during outreach to the nearby residents regarding monitoring and waterline connections. Throughout the Site's history, community concern and involvement have been high. The PRP's contractor Haley & Aldrich maintains primary communication with the residents regarding sampling of their water supply wells and provisions for alternative water.

Site Interviews

During the FYR process, interviews were conducted to gain perspectives of the Site from people who have been involved with, have had an interest in, or been witness to the remedial progress at the Site. The results of these interviews are summarized below. Site interviews were conducted for this five-year review with Andrew Fuller, NHDES Project Manager, NHDES, Londonderry Town Officials, the Property Manager and Board Members for The Nevins, and with a Tokanel Drive resident.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date**.** The results of these interviews are summarized below. Completed interview questionnaires are included as Appendix F.

NHDES: NHDES is concerned that monitored natural attenuation may not be appropriate to remediate Site contaminants such as 1,4-dioxane and PFAS as these contaminants persist much longer in the environment and there is a risk that they will continue to migrate away from the Site. NHDES indicated an assessment is needed to determine whether previous Site-characterization efforts were sufficient to understand the extent of impacts at the Site as well as continued evaluation of the vapor intrusion pathway as TCE risk-based inhalation criteria has changed in recent years. Finally, NHDES considers provision of bottled water a temporary solution (per NH GMP regulations) and expects that all homes that exceed the State AGQS's or drinking water standards will be provided a permanent connection to the nearby water line.

Town of Londonderry: The Town is concerned about the recent data noting migration of contaminants impacting water supply wells and would like to know when a permanent waterline will be provided. The Town appreciates updates and indicated that quarterly updates as well as presentations to the Town Council would be welcomed. The Town is supportive of the agencies' efforts to ensure the protection of its residents.

Nevins Manager, Board President, and Board Members: The Nevins manager and Board expressed support for the past and on-going work but remain concerned for Nevins properties and any impact from future work required. Passive vapor mitigation systems were installed during construction; there are no testing or maintenance involved. Frequent communications with Haley and Aldrich are appreciated.

The resident interviewed was recently provided bottled water. Resident indicated they have confidence in the monitoring being performed, glad the government is monitoring her water supply well and appreciates the efforts of communication by Haley and Aldrich. Expects to be connected to a waterline.

Summary: All of the interviewees were generally aware of the Site and appreciated the update provided by EPA during the interview or by Haley and Aldrich during monitoring. They expressed interest in continuing to receive regular updates either by way of written reports or meetings. Local regulators were concerned about implementing a permanent alternative water supply to affected residents and the timing. They desire to work collaboratively with EPA on implementing that work and requested quarterly updates to stay appraised. The interviewees at The Nevins were mostly concerned with maintaining minimal impacts to their properties as a result of ongoing remedial or investigative efforts, while still assuring protectiveness of the remedy. Both The Nevins and local residents appreciated the notifications they were receiving from the consultant performing the groundwater sampling work conducted on their property. None of the interviewees noted any significant problems with how the site was being managed.

Data Review

For this FYR, the following documents were reviewed and summarized below. Of note, and as this fifth review for the Site is being performed within an on-going remedial investigation of the bedrock aquifer, there is continuing work being performed which will be presented in the final RI report, Feasibility Study and ROD Amendment, if required.

- 2016 ESD – collection of data and investigations related to the required connection to a waterline for all residences whose water supply wells are impacted or potentially impacted from Site

contaminants thereby preventing human exposure to contaminated groundwater with concentrations above cleanup standards.

- Residential Groundwater Monitoring– Results from residential drinking water supply well monitoring- 2014 through 2019.
- Haley and Aldrich GMP Annual Reports for 2014-2018 including monitoring results of groundwater, surface water and evaluation of concentration trends, extent of plume, natural attenuation progress at the Site and overall protectiveness of the remedy.
- Remedial Investigation submittals for 2016- 2019 including changes to the Conceptual Site Model, assessment of data gaps and work to address those data gaps.
- 2009 and 2014 Five Year Reviews.

Site-Wide Groundwater

Review of records and monitoring reports covering the past five years of groundwater monitoring indicates that VOC concentrations remain elevated within and downgradient of source areas. 1,4-Dioxane has been detected in the overburden and bedrock monitoring wells across the site, within and downgradient of the source areas as well as at low levels in nearby residential supply wells. PFAS has been recently detected within the source area behind the Tinkham Garage, within the condominium complex monitoring wells and present at low levels within some residential water supply wells.

The management of migration remedy (pump and treat within the shallow aquifer behind the garage) reduced concentrations of VOCs within the overburden aquifer which could continue to migrate into the bedrock aquifer, however historical concentrations in the bedrock wells indicates that significant migration into the bedrock behind the garage and within the condo area had already occurred and migration of those compounds would have followed bedrock fractures away from the source areas. At this time, natural attenuation is occurring, but not at a rate predicted or in accordance with the timeframe predicted in the ROD, as modified, indicating there is likely residual source material maintaining elevated concentrations in the aquifer.

TCE in the source area shallow bedrock well (NAI-K2) near the Tinkham Garage, since 2003 and its re-installation following the Home Depot construction, has maintained relatively constant concentrations between 40 and 300µg/L, and currently indicate TCE at 81 µg/L as well as PCE at 61 µg/L (October 2018). Total VOCs at NAI-K2 in this same time period range from 204-1480 µg/L, and is currently 440 µg/L in October 2018. The vertical extent of contamination in this area is unknown, however downgradient wells such as FW11D indicate lower concentrations of these VOCs as well as concentrations of 1,4-dioxane greater than 1 ppm in its deeper fracture data sets (55+ feet). OW2D and FW20, to the east of FW11D and south east of NAI-K2 are set in overburden/shallow bedrock and continue to indicate VOCs at elevated concentrations consistent with migration of groundwater in the overburden from the source area. Both FW-20-and OW2D show elevated 1,4-dioxane (322 µg/L and 99.8 µg/L respectively in October 2018); FW-20 also has elevated vinyl chloride (34 µg/L, October 2018) indicting active biodegradation of the chlorinated compounds is occurring in this area. Surface water data continue to show low concentrations, indicating potential groundwater discharge. See Appendix D, Figure 2 for monitoring locations.

The presence of elevated TCE concentrations detected in monitoring well ERT-04 within the condominium complex and within a water supply on Boston Avenue, prompted the request for investigations related to the potential for vapor intrusion and to ascertain if groundwater conditions from

the Site were having an unacceptable impact on indoor air quality. All the indoor air results were found to be below the USEPA and NHDES indoor air screening levels (VISLs), except chloroform and benzene; the findings of which were determined not to be associated with the contaminated groundwater at ERT-04.

Overall, the distribution of the site contaminants, and primarily 1,4-dioxane, is found in groundwater across and beyond the boundary of the 375-acre site. Residential water quality results indicate that nearby residential water supply wells intersect with deep bedrock fractures transporting site contaminants.

Appendix C includes Tables containing monitoring results and Appendix D contains the associated Figures.

Evaluation of Conceptual Site Model (CSM)

- Hazardous substances were released to the environment within and near the Tinkham Garage property, as well as various leach fields and a solvent swale within the condominium complex. Contaminants migrated from these areas via surface water or through the overburden soils into groundwater.
- VOCs remaining within source area soils continued to solubilize to groundwater.
- Dissolved VOCs in groundwater migrated horizontally to the east, southeast and south with a vertical gradient downward to bedrock;
- Impacted overburden groundwater migrated east, southeast and south from the source areas;
- Impacted groundwater entered bedrock fractures behind the Tinkham Garage and within the condominium area. Inferred bedrock groundwater flow is generally south across the Site. Pumping from the condominium water supply well (LGSW) would have drawn contaminants west from the Tinkham Garage area. Based on observed groundwater elevations at FW26D and FW25D during more comprehensive water level measurements in 2016, there appears to be a groundwater flow divide located in line with these wells.
- Artesian conditions observed in wells ERT01, LGSW, FW21D and LGAW, are indicative of upward vertical gradients from the bedrock to the overburden and eventually may discharge groundwater to nearby surface water.
- Residential water quality results indicate that nearby residential water supply wells intersect with bedrock fractures transporting site contaminants.
- The Ross and Tokanel Drive residential area is located approximately 600 feet south of stream 1D (This stream was acknowledged in the initial complaint in 1978 whereby a Ross Drive resident complained of excessive foaming in the brook and was subsequently determined to have impacted well water prompting the State to request that the flow along this brook be diverted away from Ross Drive.)
- The condominium complex lies approximately 1,600 feet south/south-west of the Tinkham Garage; Mercury and McAllister Drives are west/south-west of the Tinkham Garage; Ross and Tokanel Drives are located more than 2,000 feet south of the Tinkham Garage; the Boston/Charleston neighborhood lies 1,500 feet southeast of the Tinkham Garage property.

Additional discussion regarding the CSM can be found in the 2014 through 2018 Annual GMP Water Quality Monitoring Reports.

Monitoring/Investigation Events:

2014/2015:

GMP monitoring: Monitoring well NAI-K2 was sampled in April and November 2014. Results of VOC and 1,4-dioxane analyses indicated that concentrations of PCE, TCE, cis-1,2- DCE, and vinyl chloride exceeded cleanup standards for both sampling rounds while wells located down gradient of the former source area, FW20 and OW-2D, had concentrations of 1,2-dichloroethane (1,2-DCA), vinyl chloride (VC) in excess of MCLs, and 1,4-dioxane in excess of the NHDES AGQS (3 ug/l). Monitoring locations LGSW, ERT-01 and FW21D had at least one compound which exceeded MCLS or the AGQS for 1,4-dioxane in 2014, while FW11D exceeded the AGQS for 1,4-dioxane, and MCLs for VC, TCE, benzene and 1,2-DCA. In 2014, VOCs were not detected in the GMP designated GMZ boundary wells FW-25, ERT-04, and FW28D in the April and November sampling rounds. 1,4-Dioxane was detected in the GMZ boundary well FW28D at concentrations of 1.6 µg/L (open borehole) in April 2014.

Surface water samples collected, near the former source area behind the Tinkham Garage, were sampled in April and November 2014; 1,4-dioxane was detected at 1.1 µg/L and 1.3 µg/L at locations SW-1 and SW-2, respectively.

Investigations: The 2009 FYR initially raised concerns about elevated concentrations of 1,4-dioxane and its mobility in groundwater at the Site. Subsequently, EPA required additional investigations to evaluate the long-term protectiveness of the existing groundwater monitoring program. Specifically, existing monitoring wells utilized to monitor bedrock water quality at the Site were constructed as continuous open-hole completions in bedrock, and therefore span and connect multiple fracture zones in each well. Additional investigations were conducted from 2014 through 2018 in bedrock monitoring wells to evaluate contaminant concentrations and characterize discrete fracture zones, water flow and water quality. Investigations conducted from April through October 2014 indicated that elevated concentrations (up to 760 µg/L) of 1,4-dioxane were present within discrete fractures in bedrock intercepted by monitoring well FW-11D. This well is considered to represent bedrock conditions within and immediately downgradient of the former Tinkham Garage property, and the designated Tinkham Garage source area. In addition, a 1,4-dioxane concentration of 3.2 µg/L (above the then-current AGQS of 3 µg/L), was identified in a water sample collected from a discrete fracture zone in monitoring well FW-28D, located in an area considered to represent the southern boundary conditions for the Site and at 4.8 µg/L in monitoring well FW-21D which represents the southwest boundary conditions. These investigations demonstrated that the plume had expanded and that the current horizontal and vertical extent of groundwater contamination had not been fully delineated. The initial bedrock fracture scope and assessment conducted in 2014, prepared by Haley & Aldrich, is summarized in a report titled Fractured- Bedrock Evaluation, Tinkham Garage Site, Londonderry, New Hampshire, dated October 24, 2014.

Also in 2014, the NHDES MtBE Remediation Bureau, as part of their investigations conducted to evaluate the potential presence of MtBE in residential water supply wells near the Site, provided the NHDES Hazardous Waste Remediation Bureau and EPA with data which indicated that residential wells along Boston and Charleston Avenues were found contaminated with chemical constituents, similar to those found in groundwater at the Site (TCE, VC, and 1,4-dioxane), at levels which exceeded

MCLs and the then-current AGQS for 1,4-dioxane. These residences utilize the bedrock aquifer as their source for drinking water and are located approximately 1,500 feet southeast of the major contaminant source area at the Site. Monitoring of all residential wells within the Boston/Charleston Avenue neighborhood was then conducted and five households were determined to be impacted above MCLs and the AGQS for 1,4-dioxane and subsequently connected to a waterline per the 2016 ESD.

In May 2015, annual GMZ monitoring continued consistent with the 2012 GMP and of note, monitoring well ERT04, a GMP designated boundary well which historically has had no detections of TCE, had TCE concentrations exceeding the 5 µg/L ROD cleanup level (MCL). Continued detections of elevated TCE in this well prompted a vapor intrusion investigation within the nearby condominium building. This well is located near leachfields, determined to be an areas of release during the initial RI.

2016:

As part of the 2016 ESD required RI, a comprehensive groundwater monitoring round was completed for all monitoring wells which remained at the Site. Results indicated wide spread contamination of Site contaminants toward GMZ boundaries, and beyond what was the current understanding of contaminant migration based on the GMP required monitoring.

2017/2018:

In a letter issued in February 2018, EPA indicated the need for a revised CSM with focus on residual source areas and the migration of contaminants towards nearby residential neighborhoods. A residential water supply well along Mercury Drive, which had not been connected to a water line as part of the original waterline connections required in 1983, was sampled and found to exceed the recently lowered (September 2018) NH AGQS for 1,4-dioxane of 0.32 µg/L; this household was initially placed on bottled water per the State's GMP requirements and later connected to the nearby waterline.

Remedial Investigations continued with investigations related to bedrock geophysics and groundwater-surface water interactions. In May 2018, EPA requested, on behalf on the NHDES, that groundwater, surface water and nearby residential wells be sampled for the presence of Per- and Polyfluoroalkyl Substances (PFAS). PFAS was documented within the source area greater than 70 ng/l (NHDES AGQS at the time) and in wells downgradient of source areas, however PFAS was not detected in FW28D to the south. PFAS was also found within surface waters at low levels as well as downgradient within residential water supply wells.

GMZ monitoring was performed consistent with the requirements of the 2012 GMP; RD-D, RD-S and FW25D which had not been part of the GMP were added to the monitoring in 2017 and 2018. Further sampling of residential water supply wells within the Ross and Tokanel neighborhood indicated the presence of 1,4-dioxane and PFAS in 2018. Eleven additional households were provided alternative water (bottled water), consistent with the requirements of the GMP following notification that their water supply wells exceeded the NH AGQS for 1,4-dioxane of 0.32 ug/l (as of September 2018). One household along Charleston Avenue was provided alternative water (bottled water) following notification that their water supply well exceeded the NH AGQS for total PFAS of 70 ng/l for total perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS).

2019:

NHDES renewed the GMP in May 2019 which expanded the GMZ to include those properties along Mercury/McAllister and the Ross/Tokanel neighborhoods, where groundwater concentrations were determined to be in excess of their AGQS's (See Appendix D, Figure 2). The state's renewal of the GMP in 2019 includes an extensive revision to the monitoring requirements in light of the findings of plume migration and impacts to residential water supply wells. These revisions include expanded requirement for monitoring all wells on-site and within the nearby residential neighborhoods until NHDES determines that sufficient data has been collected to: 1) ensure that these nearby receptors are not consuming drinking water impacted with site-related contaminants in excess of AGQS; 2) will not continue to draw contaminated groundwater to their well at levels in excess of AGQS's; or 3) until a remedial alternative is required and implemented that addresses plume migration, restoration of groundwater, and further residential well contamination thereby ensuring future protectiveness to receptors in the area of the site.

Summary:

VOCs in Groundwater

While VOC concentrations in overburden and bedrock groundwater, based on information collected from the existing monitoring well network, have generally remained unchanged or decreased across the Site, source area wells in the vicinity of the Tinkham's Garage building and one well (ERT04) near the condominiums have seen increases in contaminant concentrations. In April 2014, one overburden monitoring well and one bedrock monitoring well had total VOCs in excess of 100 ppb. As of October 2018, one overburden monitoring well (FW20, 194.2 ppb) and five bedrock monitoring wells (ERT04, 118 ppb; FW11D-55, 199 ppb; FW11D-70, 266 ppb; FW11D-90, 201 ppb; and NAI-K2, 440 ppb) had total VOCs in excess of 100 ppb.

The three discrete wells installed at FW11D were sampled twice in summer and fall 2018, and concentrations of benzene (FW11D-70 and FW11D-90), 1,2-dichloroethane (all three wells), cis-1,2-dichloroethene (FW11D-55), TCE (all three wells), and vinyl chloride (all three wells) were found in exceedance of their respective MCLs.

In addition to historical concentrations of 1,2-dichloroethane and vinyl chloride exceeding their respective MCLs since the 2014 FYR, some monitoring wells have also had concentrations of benzene and TCE that exceed their respective MCLs. Well NAI-K2, a shallow bedrock well with elevated levels of VOCs has not exhibited a strong trend in VOC concentrations, and concentrations were generally lower in 2019 than in 2016; however variations of concentrations are also evident with seasonal sampling. Concentrations in this well, indicated total VOCs near historic highs during the October 2016 sampling event.

The recent sample collected from overburden well OW2D in 2018 had concentrations of 1,2-dichloroethane and vinyl chloride exceeding their respective MCL and has exhibited an overall decreasing trend for total VOCs.

During the expanded sitewide sampling round conducted in 2016, and among wells not sampled as part of the GMP, VOCs were detected at concentrations above MCLs in monitoring wells D3 (vinyl chloride), and FW24D (benzene). ERT-04 in October 2018, contained 78 µg/L of TCE, which exceeds

the MCL by over an order of magnitude. The concentration trend for PCE in this well has been similar and a concentration of 7.2 µg/L was reported in the October 2018 sample.

The concentration trends of each of the individual VOCs greater than MCLs were analyzed by Haley and Aldrich using the Mann Kendall (M-K) test as part of the annual GMP reporting. As shown in Appendix B, all but one VOC in excess of MCLs (vinyl chloride in NAI-K2) have negative M-K Statistic (S) values. S values provide an indication of a decreasing trend (negative S values) or an increasing trend (positive S values). The magnitude of S indicates the strength of the trend (either decreasing or increasing).

Chloride and alkalinity analyses were reported for the following locations during May 2018 sampling: OW2D, NAI-M1, NAI-K2, DVE-7, DVE-3, FW11D, FW20, ERT01, ERT04, LGSW, FW25, FW28D-80, FW28D- 104, FW28D-174, FW21D-40, FW21D-60, FW21D-78, SW1, SW2, and TRWS. Concentrations and trends of these compounds are generally indicative of monitored natural attenuation, specifically dehalogenation of the chlorinated VOC compounds.

The 2003 ESD required continued long-term monitoring to assess attainment of cleanup levels in groundwater via natural attenuation. Recent data indicate that compounds in groundwater continue to exceed cleanup levels or MCLs for benzene, PCE, TCE, cis 1,2-DCE, 1,2-DCA, and vinyl chloride.

Concentrations of VOCs detected in samples collected from 2014 through 2018 can be found in Table 6.

1,4-Dioxane in Groundwater

Monitoring for 1,4-dioxane in groundwater at the Site was initiated in 2008. The 2009 FYR required monitoring of downgradient households along Ross Drive; nine households were sampled in December 2009 and found non-detect for 1,4-dioxane. In 2018, EPA requested sampling of all households within the Ross and Tokanel neighborhood, and an assessment for the potential migration within bedrock fractures.

Samples that have been collected as part of the GMP have been reported as having no trend from the M-K Test for most of the monitoring wells with 1,4-dioxane concentrations. Concentrations are found highest in well FW11D, where 1,4-dioxane was detected between 120 µg/L and 590 µg/L during the 2014 through May 2018 sampling rounds. Following groundwater sampling in May 2018, three wells were installed at discrete depth intervals within the FW11D borehole. In these wells, maximum concentrations of 557 µg/L (FW11D-50, June 2018), 1,170 µg/L (FW11D-70, October 2018), and 978 µg/L (FW11D-90, October 2018) were detected. Most recently, concentrations in FW11D-70 and FW11D-90 from the May/June 2019 round appear to show increases for 1,4-dioxane, suggesting that the fate and transport of 1,4-dioxane within deep bedrock is neither fully characterized nor adequately monitored by the existing well network.

Concentrations of 1,4-dioxane detected in samples collected from 2002 through 2018 can be found in Tables included in Appendix C, and in Figures included in Appendix D.

As part of the 2018 monitoring, concentrations of 1,4-dioxane were found exceeding the current (as of September 2018) NHDES AGQS of 0.32 ug/l in eleven residential wells along Ross Drive and Tokanel Drive. The current 2019 GMP permit requires private water supply biannual sampling at 76 residential locations to continue to evaluate the extent of the potential impacted residential supply wells.

Monitoring for residents who continue to use the bedrock aquifer is on-going and, in the meantime, households whose wells are impacted above the state's AGQS receive alternative water, per the NH Env-Or 600 regulations.

PFAS in Groundwater

Per-and polyfluoroalkyl substances (PFAS) are emerging contaminants which have been used in many industrial applications since the 1940s. Beginning in 2018, at the request of the EPA and NHDES, the presence of PFAS was screened for in Site groundwater, surface water and residential water supply wells. Site-specific screening levels for groundwater were generated using the EPA Regional Screening Level (RSL) calculator for a residential child (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). These screening levels (SL), representing a Hazard Quotient of 0.1, were set at 40 ng/L for PFOA and PFOS, and 40,000 ng/L for perfluorobutane sulfonate (PFBS).

Concentrations of PFOA and PFOS were found in exceedance of both the EPA SL and the NHDES AGQS, and in general, the distribution of PFAS mimicked the distribution of VOCs (including 1,4-dioxane). The highest concentration of PFOA and PFOS was found at the Tinkham Garage source area, within the shallow bedrock monitoring well NAI-K2 at 752 ng/L. Other PFAS compounds for which no regulatory criteria exist were detected, but at relatively low concentrations. One residential water supply well along Charleston Avenue was found to have greater than 70 ng/L total PFOA/PFOS and the PRPs provided bottled water in compliance with the GMP. The remedial investigations are on-going and will include additional investigations regarding characterization of the extent of PFAS in groundwater at the Site. Appendices C and D includes Tables and Figures representing the May-June 2018 PFAS sampling locations and results.

Surface Water

No cleanup levels were set for VOCs in surface waters in the ROD, as modified. Surface water samples have been collected per the GMP. During 2018, surface water samples were analyzed for VOCs and 1,4-dioxane (May and October) from two locations (SW-1 and SW-2) and PFAS (June and July) from three locations (Stream 1A/1B, Stream 1D 20+00, and SW-2) located along a tributary draining surface water from the Site. 1,4-dioxane was detected in samples SW-1 and SW2 at concentrations less than 1 µg/L. PFOA, PFOS, and other PFAS compounds were detected in all the samples, but none were detected above EPA site-specific screening levels. The on-going RI work includes a site-wide groundwater to surface water interaction investigation to better understand the fate and transport pathways for contaminants in groundwater. A summary of PFAS and VOC results for surface water samples collected in 2018 are summarized in Appendix C, Tables 8 and 11.

Vapor Intrusion

In 2015, EPA requested that investigations for a vapor intrusion exposure pathway be undertaken at a household on Boston Avenue following the finding of TCE and other VOCs at elevated levels in their residential drinking water supply well. Haley & Aldrich, Inc., performed a one-time sampling round of the property for indoor air in the basement and first floor levels and for ambient air in the vicinity on December 6, 2015. Sub-slab soil gas samples were not collected in this investigation. Both indoor air and ambient air results showed no exceedance of indoor air standards when compared to EPA's generic risk-based vapor intrusion screening levels (VISLs) and NHDES's screening levels for any of the analytes detected, and no significant human health risks were found related to exposure under the

Superfund residential exposure scenario. This house was connected to a waterline, as required in the 2016 ESD, to address their contaminated drinking water supply.

Following the detection of TCE in concentrations exceeding its NHDES Groundwater to Indoor Air Screening Level at monitoring well ERT-04 during the 2016 comprehensive groundwater sampling round, ambient air and sub-slab vapor samples were collected in late 2017 and early 2018 from Building N of the Woodland Village Condominiums. Low levels of chloroform and benzene were also detected in the indoor air samples collected, but those concentrations were attributed to environmental factors not related to groundwater. Some site related VOCs were detected in the sub-slab vapor samples, but at concentrations below screening levels. The only exception was one sample in which TCE was detected at a concentration above the EPA sub-slab soil gas screening level, but below the NHDES screening level.

Site Inspection

The inspection of the Site was conducted on June 17, 2019. In attendance were Cheryl Sprague, EPA RPM; Andrew Fuller, NHDES Project Manager; and James Soukup of Weston Solutions, Inc. The purpose of the inspection was to assess the protectiveness of the remedy. Appendix F presents the FYR Site Inspection forms for the Site.

Having previously walked the Site several times over 2018 and 2019, the EPA and NHDES performed a windshield survey of the Site with stops to inspect certain aspects of the remedy, including select monitoring wells. The Site is primarily developed and as such, is generally well-maintained. No activities were noted of concern within the Site. Some of the monitoring wells located in areas with public access were found to be unsecured and should be addressed during routine maintenance. Accumulated trash was noted along the fill slopes behind the Home Depot and Staples stores in the vicinity of existing source area monitoring wells. This area has been known to experience illegal dumping and the owner of the property has been notified in the past and has addressed the issue.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

NO. Since the last five-year review, contaminant concentrations remain above cleanup standards in groundwater, and MNA has not eliminated or minimized the migration of contaminants beyond the GMZ and as a result, nearby residential water supply wells are impacted or may be impacted in the future by Site contaminants.

Wells within the former source area behind the Tinkham's Garage building, those designated as downgradient of the source area, as well as one monitoring well location near condominium building N have similar or increases in VOC concentrations over time. While chlorinated VOCs in groundwater have overall shown a general decrease in concentration, several chlorinated compounds remain above their respective MCLs in and near source areas. Concentrations of 1,4-dioxane greater than 1 ppm were noted within monitoring well FW-11D following completion of that well for sampling of discrete fractures within bedrock in 2016. A complete round of groundwater data collected from all available monitoring wells in late 2016, as part of the ESD required remedial investigations, indicated widespread groundwater contamination, primarily 1,4-dioxane, detected across the Site and beyond the GMZ within several nearby residential water supply wells. Since the 2014 FYR, GMZ boundary wells ERT04 and FW28D have shown increasing concentrations with ERT-04 having TCE and PCE exceeding their MCLs, and FW28D with 1,4-dioxane having exceeded the 2016 ESD cleanup level of 3 µg/L.

The current MNA remedy is continuing to reduce chlorinated solvents through dehalogenation as can be seen by the presence of daughter products of PCE, TCE and 1,1,1-TCA, the recent data set has indicated that the MNA remedy has not prevented nor minimized migration of some contaminants in the bedrock aquifer towards nearby residential neighborhood water supply wells. The MNA remedy selected in 2003 was not intended to address 1,4-dioxane, as this was not monitored for at the time. It is unclear if groundwater can meet the ROD cleanup level through MNA alone, as the extent of contamination is unknown, concentrations of contaminants remain elevated within deep bedrock fractures, this compound is not favorable to degradation in general, and there is currently uncontrolled migration into nearby residential water supply wells.

The remedy is however, currently protective of human health because the ESD required provisions for alternative water via connections to a permanent waterline for households on Boston and Charleston Avenues whose water supply wells indicated contaminants in excess of site cleanup levels and Federal MCLs is complete. In addition, remedial investigations and the monitoring of nearby residential neighborhoods which continue to utilize the bedrock aquifer as their source of drinking water continues, and bottled water service, in accordance with the State's GMP, has been provided for 11 households whose water supply wells indicated Site contaminants in excess of the State's AGQSs. The full extent of potential, future impacts from the migration of site contaminants into nearby neighborhoods is currently unknown but continues to be investigated and addressed by both the EPA and the State through ongoing remedial investigations and the monitoring requirements outlined within the GMP.

The institutional controls which require monitoring of groundwater at the Site and recordation of the GMP for impacted properties remain in effect through the GMP, which was renewed in 2019. The revised GMP included sampling of households who continue to use the bedrock aquifer as their source

of drinking water. The renewed GMP also included the expansion of the GMZ to encompass properties along Mercury and McAllister Drives, as well as properties within Ross and Tokanel Drives, whose water supply wells exceed the NH drinking water standards.

Remedial Action Performance

Remedy performance currently consists of continued monitoring of groundwater and surface water to assess remedial progress with respect to achievement of the RAOs; protectiveness from migration and to assess natural attenuation and the attainment of cleanup levels in groundwater. Monitoring is currently conducted under the GMP which includes monitoring requirements set forth in the ROD/ESDs, and including monitoring of on-site monitoring wells, nearby residential water supply wells, and surface water for VOCs, 1,4-dioxane and PFAS. Monitoring also includes evaluations of natural attenuation parameters to assess on-going MNA potential as well as concentration trends and progress towards the attainment of cleanup levels. The on-going remedial investigations required by the 2016 ESD, when completed, will address residual source areas, migration pathways, estimated cleanup time frames, potential impacts to receptors and the evaluation of risk. A feasibility study will be completed to assess the efficacy of the current MNA remedy, evaluate the need to modify the current RAO's and cleanup standards and compare the current MNA remedy against other remedial alternatives to address risks posed by the Site and attain cleanup levels in a reasonable time period.

Implementation of Institutional Controls and Other Measures

The 1986 ROD, as modified by the 2003 ESD clarified the use of the GMP program to meet the institutional controls objective by establishing a GMZ .Monitoring required by the ROD/ESDs is currently being performed pursuant to the GMP and documented in an annual report. Within the GMZ, the use of groundwater, contaminant concentrations and remedy progress will be monitored until cleanup standards are met. In accordance with the GMP, notification of the GMP is recorded on deeds for properties located within the GMZ to address use of contaminated groundwater until such time as NHDES ambient groundwater quality standards are attained[3]. NHDES issued a revision to the GMP (GWP-199004008-L-004) in May 2019 that expanded the GMZ to include residences on both Ross Drive and Tokanel Drive whose water supply wells were found to be impacted by Site contaminants above the State's current drinking water standards. The 2019 GMP increased the number of monitoring wells, surface water locations, and residential supply wells to be sampled and the frequency in which they are sampled.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

NO.

The exposures assumptions, toxicity factors, exposure pathways to be considered, and risk methodologies have changed since the time of the 1986 ROD. Additionally, the groundwater RAO's may no longer be valid, as data collected in recent years indicate that site contaminants have migrated

[3] Although EPA has required ICs for all areas that exceed cleanup numbers in EPA's decision documents, NHDES, in accordance with their GMP, requested that the PRPs increase the size of the GMZ to incorporate any exceedances of the state's AGQS.

beyond the GMZ boundary established in the 2002 GMP and relied upon in the 2003 ESD. The changes as described below would not alter the short-term protectiveness of the remedy because households whose water supply wells exceed site cleanup levels or Federal MCLs have been connected to a waterline, households whose water supply wells exceed the State's current AGQSs have been supplied with alternative water (bottled water, per the NH Env-Or 600 requirements) and IC's, in the form of a GMZ, requires continued monitoring until cleanup levels are met. In addition, notification of the GMP is recorded on deeds for properties located within the GMZ to address use of groundwater until such time as NHDES ambient groundwater quality standards are attained.

The following sections discuss the evaluation of the exposure assumptions, toxicity data, and revised cleanup levels.

Changes in ARARs and Standards

In 2013, EPA revised the toxicity values for 1,4-dioxane. The oral slope factor increased, while the value for inhalation unit risk decreased, which indicates that 1,4-dioxane is more toxic from cancer health effects via the oral pathway, but less toxic from inhalation. Additionally, the non-cancer values for oral reference dose and inhalation reference concentration both decreased, which indicates that 1,4-dioxane is more toxic from non-cancer hazards. Using this updated toxicity value and the standard Superfund risk assessment approach, EPA's carcinogenic risk range of 10^{-6} to 10^{-4} for 1,4-dioxane equates to a concentration range of 0.46 to 46 µg/L.

In September 2018, NHDES modified its AGQS for 1,4-dioxane from 3.0 µg/L to 0.32 µg/L. The current Site groundwater cleanup level set in the 2016 ESD, of 3.0 µg/L for 1,4-dioxane equates to a carcinogenic risk of 6.5×10^{-6}, which is still well within EPA's acceptable 10^{-6} to 10^{-4} risk range. Thus, the existing cleanup goal of 3 µg/l for 1,4-dioxane in site groundwater remains protective.

New Hampshire has filed a final rulemaking proposal to establish Maximum Contaminant Levels (MCLs)/drinking water standards and Ambient Groundwater Quality Standards (AGQS) for four specific per- and polyfluoralkyl substances (PFAS) as follows:

PFOA	12 ppt
PFOS	15 ppt
PFHxS	18 ppt
PFNA	11 ppt

Current state law requires AGQS be the same value as any MCL established by NHDES and also that they be at least as stringent as health advisories set by the U.S. Environmental Protection Agency (EPA). In 2016, the state adopted EPA's health advisory for PFOA and PFOS as an AGQS at 70 ppt, individually or combined. The new state rules, which include the standards listed above for individual PFAS compounds, are scheduled to become effective on September 30, 2019.

New standards should be considered during the five year review as part of the protectiveness determination. EPA guidance states:

"Subsequent to the initiation of the remedial action new standards based on new scientific information or awareness may be developed and these standards may differ from the cleanup standards on which the remedy was based. These new … [standards] should be considered as part of the review conducted at

least every five years under CERCLA §121(c) for sites where hazardous substances remain on-site. The review requires EPA to assure that human health and the environment are being protected by the remedial action. Therefore, the remedy should be examined in light of any new standards that would be applicable or relevant and appropriate to the circumstances at the site or pertinent new [standards], in order to ensure that the remedy is still protective. In certain situations, new standards or the information on which they are based may indicate that the site presents a significant threat to health or environment. If such information comes to light at times other than at the five-year reviews, the necessity of acting to modify the remedy should be considered at such times." (See CERCLA Compliance with Other Laws Manual: Interim Final (Part 1) EPA/540/G-89/006 August 1988, p. 1-56.)

Given the timing of the issuance of this five-year review and the state's actions to establish standards for the PFAS substances listed above, at this time EPA has made no determination of whether these new standards will be adopted for this Site. For purposes of this five-year review, EPA has evaluated the PFAS data collected against EPA's Health Advisory and/or the State's current AGQS standard (of 70 ng/l (ppt) PFOS and PFOA individually or combined), and/or appropriate site-specific screening levels for PFAS, and recommends further evaluation to determine if any additional actions are needed.

Changes in Toxicity and Other Contaminant Characteristics

Since the previous FYR, there have been no changes in toxicity values for the Site COCs. However, emerging contaminants including 1,4-dioxane and PFAS compounds have been added to Site monitoring and have been identified in groundwater and surface water at the Site. The potential for future impacts continues to be evaluated, however these changes do not impact the short-term protectiveness of the remedy because waterline connections have been made where water supply wells were found in excess of cleanup levels and Federal MCLs, and alternative water (bottled water, per the NH Env-Or 600 requirements) has been supplied where water supply wells are found in excess of the current NH AGQS. IC's, in the form of a GMZ requires continued monitoring until cleanup levels are met, and notification of the GMP is recorded on deeds for properties located within the GMZ to address use of contaminated groundwater.

- ***2016 PFOA/PFOS*** *non-cancer toxicity values*

In May 2016, EPA issued final lifetime drinking water health advisories for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), which identified a chronic oral reference dose (RfD) of 2E-05 mg/kg-day for PFOA and PFOS (EPA, 2016b and EPA, 2016c). These RfD values should be used when evaluating potential risks from ingestion of contaminated groundwater at Superfund sites where PFOA and PFOS might be present based on-site history. Potential estimated health risks from PFOA and PFOS, if identified, would likely increase total site risks due to groundwater exposure. Further evaluation of potential risks from exposure to PFOA and PFOS in other media at the Site might be needed based on site conditions and may also affect total site risks.

PFOA and PFOS belong to a group of compounds known as PFAS, which have been used in a variety of industrial applications. Given the potential presence at the Site, PFAS compounds were added to Site monitoring in 2018. PFOA and PFOS were detected above the EPA site-specific residential groundwater screening levels of 40 ng/L, and above the EPA's Lifetime Health Advisory and the NHDES AGQS standard of 70 ng/L in site groundwater, within the source area and within one residential water supply well. Detections above the site-specific screening levels identify a need for further evaluation.

While the identification of PFAS in site groundwater since the 1986 ROD was modified to MNA in 2003, continues to require additional investigation; it is not expected to impact the short-term remedy protectiveness because groundwater is monitored and managed through a GMP. Currently, the household which indicated an exceedance over the 70 ng/l total PFOA/PFOS is being provided with bottled water pursuant to NHDES requirements.

- ***2014 PFBS*** *non-cancer toxicity value*

Perfluorobutanesulfonic acid (PFBS) has a chronic oral RfD of 2E-02 mg/kg-day based on an EPA Provisional Peer Reviewed Toxicity Value (PPRTV) (USEPA, 2014b). This RfD value should be used when evaluating potential risks from ingestion of contaminated groundwater at Superfund sites where PFBS might be present based on site history. Potential estimated health risks from PFBS, if identified, would likely increase total site risks due to groundwater exposure. Further evaluation of potential risks from exposure to PFBS in other media at the Site might be needed based on site conditions and may also affect total site risks.

PFBS has been detected at this Site at concentrations below the EPA site-specific residential groundwater screening level, however it will continue to be monitored for in future investigations related to PFAS.

Changes in Risk Assessment Methods

Since the 1986 ROD, changes have been adopted to the equations used to calculate risks from exposures to soil and groundwater.

- ***2014 OSWER Directive Determining Groundwater Exposure Point Concentrations, Supplemental Guidance***

In 2014, EPA finalized a Directive to determine groundwater exposure point concentrations (EPCs) (https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236917) This Directive provides recommendations to develop groundwater EPCs. The recommendations to calculate the 95% UCL of the arithmetic mean concentration for each contaminant from wells within the core/center of the plume, using the statistical software ProUCL, could result in lower groundwater EPCs than the maximum concentrations routinely used for EPCs as past practice in risk assessment, leading to changes in groundwater risk screening and evaluation. In general, this approach could result in slightly lower risk or higher screening levels. (Reference: USEPA. 2014. Determining Groundwater Exposure Point Concentrations. OSWER Directive 9283.1-42. February 2014.)

Changes in Exposure Pathways

The 1986 HHRA identified groundwater ingestion, dermal contact, and inhalation of volatile compounds as the pathways of exposure posing the greatest risk to human health. Since the remedy decision, vapor intrusion (VI) has been identified as a potential exposure pathway requiring investigation, however no unacceptable risks from VI have been identified.

Since the previous FYR, several residential supply wells in the Boston Avenue/Charleston Avenue neighborhood were found to be impacted by concentrations of VOCs in excess of site cleanup standards and Federal MCLs and 1,4-dioxane in excess of the cleanup standards set in the 2016 ESD at the NH

AGQS, which was 3 ug/l at that time. There has been a detection of PFAS compounds in a residential supply well in the Charleston Avenue neighborhood at a concentration above 70 ng/L total PFOA/PFOS. Potential impacts for the remaining residences who continue to draw their drinking water from the bedrock within these neighborhoods are continuing to be evaluated under both the remedial investigations and the State's GMP. The remedy remains protective in the short-term because waterline connections have been made where water supply wells were found in excess of cleanup levels and Federal MCLs, and alternative water (bottled water, per the NH Env-Or 600 requirements) has been supplied where water supply wells are found in excess of the current NH AGQS, including the household which indicated an exceedance over the 70 ng/l total PFOA/PFOS. IC's, in the form of a GMZ requires continued monitoring until cleanup levels are met, and notification of the GMP is recorded on deeds for properties located within the GMZ to address use of contaminated groundwater.

- ***2014 OSWER Directive on the Update of Standard Default Exposure Factors***

In 2014, EPA finalized a Directive to update standard default exposure factors and frequently asked questions associated with these updates. https://www.epa.gov/sites/production/files/2015-11/documents/oswer_directive_9200.1-120_exposurefactors_corrected2.pdf). Many of these exposure factors differ from those used in the risk assessment(s) supporting the ROD(s). These changes in general would result in a slight decrease of the risk estimates for most chemicals. (Reference: USEPA. 2014. Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER Directive 9200.1-120. February 6, 2014.)

- ***2018 EPA VISL Calculator***

In February 2018, EPA launched an online Vapor Intrusion Screening Level (VISL) calculator which can be used to obtain risk-based screening level concentrations for groundwater, sub-slab soil gas, and indoor air. The VISL calculator uses the same database as the Regional Screening Levels for toxicity values and physiochemical parameters and is automatically updated during the semi-annual RSL updates. Please see the User's Guide for further details on how to use the VISL calculator. https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-level-calculator

Exposure to VOCs through vapor intrusion (VI) was not evaluated during the original risk assessment, however the potential for risk associated with VI was assessed during the 2004 and 2009 FYRs and determined not to be a concern at the Site. In addition, passive VI systems were installed during construction of The Nevins senior housing complex to minimize possible future indoor air exposures as per an agreement with EPA.

Because TCE, on occasion, has been detected in Site groundwater and within a residential water supply well, at concentrations above the MCL and in excess of the current VISL, the VI pathway will continue to be evaluated as site cleanup and groundwater monitoring activities continue.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

NO.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) with Issues/Recommendations Identified in the Five-Year Review:

OU(s): **OU1 - Sitewide Management of Migration**	**Issue Category: Remedy Performance**			
	Issue #1: The current groundwater remedy (MNA) may not result in meeting clean-up goals in the expected timeframe, and may not be effective for newly identified contaminants.			
	Recommendation: A MNA remedy evaluation should be completed for residual contamination, including 1,4-dioxane and PFAS, and consistent with current EPA guidance to ascertain whether MNA will attain cleanup levels in a reasonable time frame, whether MNA will minimize the migration of contaminants in the bedrock aquifer and whether the current MNA remedy will be protective of human health and the environment or whether the groundwater remedy should be modified.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/30/2021

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): **OU1 - Sitewide Management of Migration**	**Issue Category: Monitoring**			
	Issue#2: 1,4-Dioxane has been detected in residential water supply wells above the State's current AGQS of 0.32 µg/L and PFAS have been detected in groundwater above EPA screening levels and in a residential water supply well above 70 ng/l, the State's current AGQS.			
	Recommendation: Further evaluation is needed to determine the full extent of 1,4-dioxane and PFAS in groundwater at the Site.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	6/30/2021

OU(s): OU1 - Sitewide Management Of Migration	Issue Category: Monitoring			
	Issue #3: The current monitoring well network is not adequate to delineate the extent of contamination nor assess migration of contaminants within bedrock factures.			
	Recommendation: Install a more comprehensive monitoring well network which allows for the vertical and horizontal delineation of the extent of contamination so that migration pathways and attainment of clean-up levels within individual fractures can be adequately assessed.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	12/30/2020

OU(s): OU1- Sitewide Groundwater	Issue Category: Changed Site Conditions			
	Issue #4: Uncontrolled migration of Site contaminants, including 1,4-dioxane and PFAS, beyond the Site boundaries and impacts to residential drinking water supply wells has been documented.			
	Recommendation: As required by the 2016 ESD, remedial investigations, a feasibility study, and an amended remedy must be completed since the MNA remedy may not be able to reduce contaminant concentrations to cleanup levels in a reasonable time frame and meet the RAO's to minimize migration of contaminants and protect human health and the environment. 1,4-Dioxane and PFAS have been identified in Site groundwater since the 2003 ESD, have impacted nearby residential drinking water supply wells and must be assessed as part of these studies and in any future remedy change.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	12/30/2023

OU(s): OU1-Sitewide Management of Migration	Issue Category: Monitoring			
	Issue#5: Changes in VOC concentrations in groundwater could present a potential vapor intrusion concern.			
	Recommendation: Perform additional groundwater sampling, and screen data against the updated VISL to identify any potential VI concerns.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA/State	12/1/2020

Other Findings:

In light of the findings of recent investigations, and the discovery of Site contaminants detected in nearby residential water supply wells since 2014, additional site investigations, as required in the 2016 ESD, remain necessary and are on-going. The purpose of these investigations is to further assess and characterize the nature and extent of Site contaminants within the source areas and migrating within bedrock fractures, assess exposure and human health risks related to potential impacts to nearby residents still utilizing the bedrock aquifer, and to confirm that the current GMZ is adequate and protective. We will continue to assess the need for additional waterline connections consistent with the 2016 ESD or other decision documents.

The need to revise/update the monitoring plan to comply with requirements of the ROD/ESDs will also be considered. NHDES is also likely to consider whether additional groundwater monitoring is necessary to administer the their GMP. The following recommendations were identified during the 5YR which may improve the monitoring program for the Site, but does not affect the current and/or continued protectiveness:

- Review monitoring efforts to ensure that they allow for the delineation of the vertical and horizontal extent of contamination, the efficacy of MNA, the verification of the attainment of cleanup standards and the evaluation of impacts including potential future impacts to nearby residential drinking water supply wells, among other things. If warranted, develop a stand alone monitoring plan (separate from the NH GMP) that addresses monitoring requirements set forth in site decision documents.
- Secure monitoring wells located in areas with public access.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)		
Operable Unit:	*Protectiveness Determination:*	*Completion Date:*
OU1	Short-term Protective	Click here to enter a date

Protectiveness Statement:

The OU1 remedy at the site is currently protective of human health and the environment as envisioned in 1986 ROD, as modified, because the remedy has met soil cleanup goals, and is complete and protective of human health and the environment; and connections to a waterline and the provision of bottled water have addressed residents whose water supply wells are found impacted above cleanup standards, MCLs or the State's AGQS, respectively. IC's are in place and currently effective at managing exposure to contaminated groundwater at the Site. However, in order for the remedy to be protective in the long-term the following actions are needed:

(1) Further evaluation of the MNA groundwater remedy to determine whether it can address 1,4-dioxane and PFAS, reassess the timeframe to meet cleanup levels, can minimize migration and protect nearby residences who utilize the groundwater as a drinking water source, and, if needed, evaluate alternative remedial options to address risk at the Site and attain cleanup standards;
(2) Further evaluation for Site contaminants, including 1,4-dioxane and PFAS in groundwater to determine whether they continue to migrate and impact water supply wells or pose an unacceptable risk for residences who continue to utilize groundwater as their drinking water source;
(3) Installation of a comprehensive monitoring well network which allows for the vertical and horizontal delineation of the extent of contamination, the assessment of migration pathways, and the attainment of clean up levels within individual fractures;
(4) Continued evaluation of the vapor intrusion pathway and
(5) groundwater cleanup levels, selected in the 1986 ROD, as modified, need to be attained

Sitewide Protectiveness Statement	
Protectiveness Determination: Short-term Protective	*Completion Date:* Click here to enter a date
Protectiveness Statement: The remedy at the site is currently protective of human health and the environment as envisioned in 1986 ROD, as modified, all source control actions have been completed and the remedy has met soil cleanup goals, and, connections to a waterline or the provision of bottled water (per the NH Env-Or 600 requirements) have addressed residents whose water supply wells have been found to be impacted above cleanup standards or NH AGQSs respectively, and IC's are in place and currently effective at managing exposure to contaminated groundwater at the Site. In order for the remedy to be protective in the long-term, groundwater cleanup levels, selected in the 1986 ROD, as modified, need to be attained; an evaluation of the MNA groundwater remedy and whether it can address 1,4-dioxane and PFAS, is capable of meeting cleanup levels in a reasonable amount of time, can minimize migration and protect nearby residences who utilize the groundwater as a drinking water source must be completed; a comprehensive monitoring well network needs to be installed to delineate and assess residual mass migration and attainment of cleanup levels within individual fractures; and the vapor intrusion exposure pathway should continue to be evaluated.	

VIII. NEXT REVIEW

The next five-year review report for the Tinkham Garage Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Haley Aldrich, Inc. 2014. Fractured-Bedrock Evaluation, Tinkham Garage Site, Londonderry, New Hampshire. October 24.

Haley Aldrich, Inc. 2015. Annual Water Quality Monitoring Report for 2014, Tinkham Garage Site. March 20.

Haley Aldrich, Inc. 2016. Annual Water Quality Monitoring Report for 2015, Tinkham Garage Site, Londonderry, New Hampshire. January 20.

Haley Aldrich, Inc. 2016. Bedrock Lineament Analysis, Tinkham Garage Site, Londonderry, NH. November 4.

Haley Aldrich, Inc. 2016. Supplemental Remedial Investigation and Feasibility Study Work Plan, Tinkham Garage Superfund Site, EPA ID #NHD062004569, Londonderry, New Hampshire. December.

Haley Aldrich, Inc. 2017. Annual Water Quality Monitoring Report for 2016, Tinkham Garage Site, Londonderry, New Hampshire. January 31.

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NUS Corporation. 1984. Tinkham's Garage/Londonderry Green Site Field Investigation Report, Volume I: Report and Volume II: Appendices. March 7.

U.S. Environmental Protection Agency (EPA). 1986. EPA Superfund Record of Decision: Tinkham Garage EPA ID: NHD062004569 QUI Londonderry, NH, U.S. September 30.

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EPA. 2014a. Fourth Five-Year Review Report for Tinkham Garage Superfund Site, Town of Londonderry, Rockingham County, New Hampshire. September 17.

EPA, 2014b. Provisional Peer-Reviewed Toxicity Values for Perfluorobutane Sulfonate (CASRN 375-73-5) and Related Compound Potassium Perfluorobutane Sulfonate (CASRN 29420-49-3). July 17.

EPA, 2016a. Third Explanation of Significant Differences. March 9.

EPA, 2016b. Health Effects Support Document for Perfluorooctanoic Acid (PFOA). May.

EPA, 2016c. Health Effects Support Document for Perfluorooctane Sulfonate (PFOS). May.

APPENDIX B – EXISTING SITE INFORMATION

A. SITE CHRONOLOGY

Table 4: Site Chronology

Event	Date
Initial discovery of problem or contamination	April 1978
Condominium and individual residential wells shut down	January 1983
Final NPL listing	September 8,1983
Water line installed	November 1983
Remedial Investigation/Feasibility Study complete	September 30,1986
ROD signature	September 30, 1986
Administrative Order on Consent requiring PRPs to perform pre-design studies to assess source control remedial technologies	September 11, 1987
Pre-design study complete	July 1988
Amended ROD changing source control remedial technologies	March 10, 1989
Consent Decree requiring PRPs to implement amended ROD remedy	August 14, 1989
ESD addressing on-site groundwater treatment	January 21, 1992
Sewer line construction starts	March 1993
On-site remedial action construction start	April 7, 1994
Start of source control and groundwater treatment plant operation	November 28,1994
RA Construction completion (Preliminary Close-out Report)	April 7,1995
Vacuum extraction system dismantled	November 1995
Bedrock extraction wells shut down	July 1996
First five-year review report	March 31,1999
NHDES issues Groundwater Management Permit	October 30, 2002
All extraction wells shut down	November 2002
ESD documenting groundwater remedy change to natural attenuation	March 31, 2003
Second five-year review report	March 2004
NHDES issues renewal of the Groundwater Management Permit	November 27, 2007
Third five-year review report	March 24, 2009
Vapor Intrusion Investigation Report	December 30, 2009
1.4-Dioxane Investigation on Ross Drive Report	December 30, 2009
NHDES issues renewal of the Groundwater Management Permit	August 28, 2012
Bedrock Evaluation Report (draft)	July 1, 2014
EPA letter responding to Bedrock Evaluation Report (draft)	August 6, 2014
Fourth five-year review report	September 17, 2014
Fractured Bedrock Evaluation Report	October 24, 2014
Standpipe Installation for Discrete-Zone Monitoring	October 22, 2014
EPA letter with proposed Scope of Work for Supplemental RIFS	June 17, 2016
Supplemental Remedial Investigation and Feasibility Study Work Plan	December 22, 2016
EPA letter responding to Supplemental RIFS Work Plan	February 8, 2018
EPA Letter requesting PFAS sampling	May 30, 2018
Proposal for PFAS Screening	April 18, 2018
FW-11D Re-Construction Letter Work Plan	April 27, 2018
Expedited Work Plan for Groundwater/Surface Water Interaction	June 1, 2018
Expedited Work Plan for Surface Geophysical Survey	June 11 2018
Work Plan for Supplemental Release Area Investigations	June 26, 2018
Historical Summary of Condo Area Investigations	July 24, 2018
EPA Letter regarding Groundwater/Surface Water Interaction	August 24, 2018

Residential Sampling Results Report	February 7, 2019
EPA letter requesting additional Residential Sampling	March 27, 2019
Groundwater/Surface Water Interaction Status Update	April 23, 2019
NHDES issues renewal of the Groundwater Management Permit	May 17, 2019

B. BACKGROUND

The GMP was renewed on May 17, 2019. See Table 5 below for properties within the GMZ at the Tinkham Garage Superfund Site.

Appendix B
Table 5
Properties Within the Groundwater Management Zone
Tinkham Garage Site
Londonderry, New Hampshire

Lot Number	Property Address	Ownership Information	Deed Reference (Rockingham County Book and Page)
007 119 0	41 Nashua Road	Home Depot USA, Inc. Property Tax Dep #3401 Atlanta, GA 30348-5842	3533-1498
007 122 1	3 Rear McAllister Drive	Private owners 3 McAllister Drive Londonderry, NH 03053	4937-0303
007 122 0	2 Wesley Drive	Private owner The Nevins Retirement Cooperative Assoc. 2 Wesley Drive Londonderry, NH 03053	4678-0092
007 124 7 007 124 9 007 124 10 007 124 13 007 124 15 007 124 19 007 124 24 007 124 29 007 124 33	Constitution and Capitol Hill Drive	Woodland Village Condo Assoc. c:/o Harvard Management PO Box 2019 Merrimack, NH 03054	No Legal Reference Available
007 124 1	1 Mercury Drive	Olmerc LLC 3 McAllister Drive Londonderry, NH 03053	4880-0430
007 124 42	2 Mercury Drive	Private owner P.O. Box 1317 Londonderry, NH 03053	3599-1339
007 124 2	3 Mercury Drive	Private owners 3 Mercury Drive Londonderry, NH 03053	5494-1536
007 124 43	4 Mercury Drive	Private owner 4 Mercury Drive Londonderry, NH 03053	5561-2484
007 124 44	8 Mercury Drive	Private owners 8 Mercury Drive Londonderry, NH 03053	5827-2686
007 124 45	10 Mercury Drive	Private owner 10 Mercury Drive Londonderry, NH 03053	3809-1643
007 124 46	12 Mercury Drive	Private owner 12 Mercury Drive Londonderry, NH 03053	3395-1458
007 127 1	3 Constitution Drive	Private owners 3 Constitution Drive Londonderry, NH 03053	5558-2087
007 124 4	11 Mercury Drive	Private owners 11 Mercury Drive Londonderry, NH 03053	3692-1984
007 124 5	13 Mercury Drive	Private owners 13 Mercury Drive Londonderry, NH 03053	5712-1890
007 124 6	15 Mercury Drive	Private owner 15 Mercury Drive Londonderry, NH 03053	5195-2462
007 124 41	9 McAllister Drive	Private owners 9 McAllister Drive Londonderry, NH 03053	4852-2836

Appendix B
Table 5
Properties Within the Groundwater Management Zone
Tinkham Garage Site
Londonderry, New Hampshire

Lot Number	Property Address	Ownership Information	Deed Reference (Rockingham County Book and Page)
007 124 40	11 McAllister Drive	Private owners P.O. Box 1100 Londonderry, NH 03053	3201-2396
007 124 39	13 McAllister Drive	Private owners 13 McAllister Drive Londonderry, NH 03053	5751-0532
007 127 2	15 McAllister Drive	Private owners 15 McAllister Drive Londonderry, NH 03053	3822-1910
007 127 0	17 McAllister Drive	Private owners 17 McAllister Drive Londonderry, NH 03053-3514	2845-2061
007 117 42	26 Ross Drive	Private owners 26 Ross Drive Londonderry, NH 03053	2894-1253
007 117 45	27 Ross Drive	Private owners 27 Ross Drive Londonderry, NH 03053	5861-0795
007 117 44	28 Ross Drive	Private owners 28 Ross Drive Londonderry, NH 03053	5139-2944
007 117 47	29 Ross Drive	Private owners 29 Ross Drive Londonderry, NH 03053	2402-1012
007 117 46	30 Ross Drive	Private owners 30 Ross Drive Londonderry, NH 03053	4140-2852
007 117 49	31 Ross Drive	Private owners 31 Ross Drive Londonderry, NH 03053	4013-0373
007 117 48	32 Ross Drive	Private owners 32 Ross Drive Londonderry, NH 03053	5686-0652
007 117 54	28 Tokanel Drive	Private owners 28 Tokanel Drive Londonderry, NH 03053	5433-2782
007 117 56	30 Tokanel Drive	Private owners 30 Tokanel Drive Londonderry, NH 03053	3319-371
007 117 59	33 Tokanel Drive	Private owners 33 Tokanel Drive Londonderry, NH 03053	4378-1955
007 117 55	39 Tokanel Drive	Private owners 39 Tokanel Drive Londonderry, NH 03053	2268-104

APPENDIX C. TABLES

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater																								
		NAI-M1																		FW20 - Page 1						
		5/21/2002	6/25/2003	5/20/2004	5/3/2005	5/17/2006	5/14/2007	6/13/2007	5/14/2008	5/19/2009	5/10/2010	5/25/2011	5/9/2012	5/6/2013	04/04/14	05/07/15	05/24/16	10/31/16	05/30/17	05/17/18	05/20/02	05/30/03	05/19/04	05/03/05	05/17/06	05/15/07	06/13/07
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-	**< 10**	<10	<10	<10	<10	< 10	< 10
Benzene	**5**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5	**3**	**4**	**1**	**2**	**5**	**2**	< 1
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5	< 2	<2	<2	<2	**2**	< 2	< 2
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	<0.5	-	-	-	-	-	-	-
Chloroform	**70**	< 2	**15**	< 2	< 2	< 2	< 2	< 2	**2**	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5	< 2	<2	<2	<2	<2	< 2	< 2
1,2-Dichlorobenzene	**600**	**2**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	< 2.5	<0.5	**10**	**9**	**4**	**8**	**15**	**7**	**3**
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	-	<0.5	**2**	**2**	<1	<1	**2**	**2**	**1**
1,1-Dichloroethane	**81**	**2**	**9**	**3**	< 2	< 2	< 2	**7**	**6**	**2**	**3**	< 2	**7**	< 2	< 2	<2	**2.3**	**2.5**	< 0.75	**0.54**	**27**	**29**	**9**	**18**	**39**	**13**	**8**
1,2-Dichloroethane	**5**	< 2	**3**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5	**21**	**20**	**7**	**16**	**33**	**9**	**6**
1,1-Dichloroethene	**7**	< 1	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5	**1**	**1**	<1	<1	**2**	< 1	< 1
cis-1,2-Dichloroethene	**70**	**20**	**62**	**10**	**5**	**6**	**4**	**29**	**31**	**23**	**19**	**12**	**56**	**2**	**3**	**4**	**12**	**7.2**	**1.8**	**2.8**	**94**	**92**	**27**	**57**	**140**	**34**	**20**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	< 0.5	< 2.5	<0.5	**7**	**6**	<5	**5**	**11**	< 5	< 5
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	< 0.5	< 2	<0.5	NT	< 5	< 5	< 5	**7**	< 5	< 5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5	< 1	<1	<1	<1	<1	< 1	< 1
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5	< 1	<1	<1	<1	<1	< 1	< 1
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	< 1	<1	<1	<1	<1	< 1	< 1
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	**2**	**75**	**9**	**3**	**3**	**2**	**5**	**3**	< 2	**2**	< 2	**3**	< 2	< 2	**2**	**1.2**	**2.5**	< 0.5	**0.58**	< 2	<2	<2	<2	<2	< 2	< 2
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	< 5	< 10	< 5	<10	< 10	<10	<10	<10	<10	< 10	< 10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-	< 1	<1	<1	<1	<1	< 1	< 1
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5	< 2	<2	<2	<2	<2	< 2	< 2
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5	-	-	-	-	-	-	-
1,1,1-Trichloroethane	**200**	< 2	**140**	**6**	< 2	< 2	< 2	**16**	**24**	**6**	**4**	**2**	**7**	< 2	< 2	<2	**1.2**	**1.3**	< 0.5	<0.5	< 2	<2	<2	<2	<2	< 2	< 2
1,1,2-Trichloroethane	**5**	< 2	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	< 0.75	< 0.5	< 0.75	<0.5	< 2	<2	<2	<2	<2	< 2	< 2
Trichloroethene	**5**	**7**	**270**	**24**	**5**	**11**	**7**	**39**	**48**	**10**	**13**	**7**	**21**	**3**	**5**	**5**	**5.4**	**6.9**	**1**	**1.7**	**8**	**6**	**2**	**6**	**12**	**3**	< 2
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	< 1	<1	<1	<1	<1	< 1	< 1
Vinyl chloride	**2**	**4**	< 2	**6**	**4**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**3**	< 2	< 2	<2	**1.7**	**0.54**	< 1	<0.5	**48**	**35**	**13**	**33**	**81**	**17**	**11**
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30						NT	< 50	< 50	< 50	< 50	< 30	< 30
Xylenes (Total)	**10,000**	< 1	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-	< 2	<2	<2	<2	<2	< 2	< 2
Total VOCs		37	580	58	17	20	13	96	114	41	41	21	97	5	8	11	23.8	20.9	2.8	5.62	221	204	63	145	349	87	49
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	NT	< 1 R	< 2.1	< 2	< 2	< 0.1	**0.12**	**0.55**	<0.1	**0.39**	**0.67**	< 0.2	<0.144	NT	NT	NT	NT	NT	NT	NT

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. * - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater																					
		FW20 - Page 2																					
		05/14/08	05/21/09	11/10/09	05/10/10	11/12/10	05/24/11	11/09/11	05/09/12	11/06/12	05/06/13	11/12/13	04/03/14	11/10/14	05/04/15	11/18/15	05/25/16	10/31/16	05/30/17	05/30/17	11/14/17	05/16/18	10/30/18	10/30/18
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	-	< 5	< 10	-	-	-	-	-	-
Benzene	**5**	**3**	**3**	**3**	**4**	**7**	**2**	**2**	**2**	**5**	**3**	**3**	**2**	**4**	**3**	**7.7**	**7.2**	**9**	**6**	**5.8**	**5**	**6.5**	**6.7**	**6.7**
Chlorobenzene	**100**	< 2	< 2	< 2	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	**1.1**	**1.9**	**1.1**	**1.9**	**1.9**	**1.3**	**2.7**	**2**	**2**
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.4**	**0.66**	**3.7**	**3.6**	**2**	**3.3**	**3.2**	**3.2**
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	< 0.75	< 0.5	< 0.75	< 0.75	< 0.75	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	**600**	**9**	**9**	**7**	**12**	**8**	**8**	**6**	**7**	**7**	**9**	**4**	**9**	**6**	**8**	**5.5**	**10**	**5.7**	**11**	**11**	**7.5**	**15**	**10**	**10**
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	**2**	**2**	**1**	**2**	**2**	**1**	< 1	**1**	**1**	**1**	< 1	< 1	<1	<1	<2.5	< 2.5	**0.64**	**-**	**-**	**-**	**1.6**	**0.95**	**1**
1,1-Dichloroethane	**81**	**18**	**15**	**13**	**22**	**16**	**13**	**12**	**12**	**11**	**14**	**7**	**15**	**10**	**14**	**12**	**20**	**13**	**25**	**24**	**14**	**28**	**31**	**31**
1,2-Dichloroethane	**5**	**14**	**12**	**10**	**17**	**12**	**10**	**9**	**10**	**10**	**10**	**6**	**11**	**9**	**12**	**7.1**	**15**	**8.8**	**18**	**18**	**10**	**20**	**22**	**22**
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	< 0.5	< 0.5	**0.63**	**0.63**	< 0.5	**0.69**	**0.37**	**0.7**
cis-1,2-Dichloroethene	**70**	**49**	**46**	**34**	**51**	**31**	**37**	**29**	**32**	**23**	**32**	**11**	**40**	**19**	**32**	**8.9**	**36**	**8.8**	**52**	**50**	**24**	**63**	**67**	**67**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	<0.5	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	**5**	< 5	< 5	**8**	**5**	< 5	< 5	< 5	< 5	< 5	< 5	**6**	<5	<5	**4.2**	**6.7**	**4.2**	**8.5**	**8.6**	**4.5**	**9**	**10**	**10**
Diisopropyl ether (DIPE)	**120**	< 5	< 5	< 5	**6**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-	<5	**2.8**	**5.1**	**3.5**	**6.2**	**6**	**4.2**	**8.2**	**8**	**8**
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-	-	-	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	<10	<5	< 5	< 10	< 5	< 5	< 5	<10	<10	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	< 0.75	< 0.5	-	-	-	-	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	< 0.75	< 0.5	< 0.75	< 0.75	< 0.75	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<2.5	< 2.5	< 0.5	-	-	-	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	< 0.75	< 0.5	< 0.75	< 0.75	< 0.75	<0.5	<0.5	<0.5
Trichloroethene	**5**	**4**	**4**	**3**	**4**	**3**	**3**	< 2	**3**	**2**	**3**	< 2	**3**	<2	**3**	**0.92**	**3.1**	**1.1**	**4.3**	**4.1**	**2.4**	**4.8**	**5.1**	**5.3**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	**35**	**26**	**25**	**42**	**25**	**23**	**20**	**16**	**22**	**19**	**17**	**18**	**18**	**19**	**18**	**34**	**26**	**39**	**38**	**27**	**36**	**33**	**34**
Tert-butyl alcohol (TBA)	**40**	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-	-	-	-	-	-	-
Total VOCs		139	114	96	170	109	99	78	83	81	91	48	104	66	88	60.5	134.2	73.5	170.2	165.8	96.9	192.29	192.62	194.2
1,4-Dioxane	**3**	**140 J**	**150**	**62**	**120**	**71**	**98 D**	**39 D J**	**32**	**81**	**130**	**75**	**100**	**96**	**83**	**69**	**120**	**130**	**240**	**210**	**140**	**359**	**322**	**296**

Notes:
1. All results are in micrograms per liter (µg/L).
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3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. [a] - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater																				
		OW2D - Page 1																				
		5/20/2002	11/1/2002	5/30/2003	11/6/2003	11/6/2003-Dup	5/19/2004	11/3/2004	11/3/2004-Dup	5/3/2005	11/18/2005	11/18/2005-Dup	5/17/2006	11/8/2006	5/14/2007	11/14/2007	11/14/2007-Dup	5/14/2008	5/14/2008-Dup	11/6/2008	5/21/2009	5/21/2009-Dup
Acetone	**6,000**	< 10	**20**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	**40**	< 10	**30**	< 10	< 10	**30**	**30**	< 10	< 10	< 10
Benzene	**5**	**4**	**5**	**4**	**4**	**4**	**3**	**4**	**4**	< 1	**3**	**3**	**2**	**2**	**1**	**2**	**2**	**1**	**1**	< 1	< 1	**1**
Chlorobenzene	**100**	**5**	< 2	**4**	**4**	**4**	**5**	**3**	**3**	< 2	**4**	**4**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2**	**3**	**3**
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	**600**	**40**	**37**	**36**	**42**	**42**	**39**	**32**	**32**	< 1	**38**	**36**	**36**	**40**	**35**	**28**	**29**	**31**	**30**	**27**	**36**	**37**
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	**4**	**3**	**3**	**3**	**4**	**4**	**3**	**3**	< 1	**4**	**3**	**3**	**4**	**3**	**3**	**3**	**3**	**3**	**3**	**4**	**4**
1,1-Dichloroethane	**81**	**49**	**52**	**55**	**54**	**55**	**47**	**43**	**42**	< 2	**38**	**37**	**34**	**31**	**31**	**29**	**29**	**24**	**24**	**21**	**22**	**22**
1,2-Dichloroethane	**5**	**51**	**48**	**48**	**52**	**54**	**43**	**36**	**35**	< 2	**33**	**32**	**28**	**29**	**26**	**24**	**25**	**20**	**20**	**18**	**19**	**19**
1,1-Dichloroethene	**7**	**3**	**3**	**4**	**3**	**3**	**3**	**2**	**2**	< 1	**3**	**3**	**1**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**2**
cis-1,2-Dichloroethene	**70**	**450**	**300**	**480**	**310**	**320**	**350**	**290**	**280**	**8**	**260**	**250**	**210**	**210**	**220**	**160**	**160**	**150**	**150**	**160**	**170**	**170**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	< 5	**9**	**8**	**9**	**9**	**7**	**7**	**6**	< 5	**6**	**6**	**6**	**6**	**5**	**6**	**6**	< 5	< 5	< 5	< 5	< 5
Diisopropyl ether (DIPE)	**120**	NT	NT	**6**	**7**	**7**	**7**	**6**	**6**	< 5	**5**	**5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
iso-Propylbenzene	**800**	**3**	**3**	**2**	**2**	**2**	**3**	**2**	**2**	< 1	**2**	**2**	**1**	**2**	**1**	**1**	**1**	< 1	< 1	< 1	< 1	< 1
n-Propylbenzene	**260**	< 2	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	**6**	**5**	**6**	**5**	**5**	**7**	**5**	**5**	< 2	**7**	**6**	**7**	**7**	**7**	**4**	**4**	**5**	**5**	**4**	**6**	**6**
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,2-Dichloroethene	**100**	< 2	**2**	< 2	**2**	**3**	< 2	< 2	< 2	< 2	< 2	< 2	**18**	< 2	**4**	< 2	< 2	**5**	**3**	< 2	< 2	< 2
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 2	< 2	< 2
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	**5**	**33**	**19**	**25**	**22**	**23**	**29**	**19**	**19**	< 2	**23**	**21**	**21**	**20**	**19**	**11**	**12**	**14**	**14**	**13**	**15**	**17**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl chloride	**2**	**32**	**26**	**23**	**20**	**20**	**23**	**15**	**15**	< 2	**13**	**12**	**10**	**12**	**9**	**11**	**11**	**6**	**5**	**7**	**9**	**9**
Tert-butyl alcohol (TBA)	**40**	NT	NT	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 30	< 30	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Total VOCs		680	512	704	539	555	570	467	454	8	439	420	420	368	366	284	287	263	259	256	295	290
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**200 J**	**220 J**	**350**	**190**	**180**

Notes:
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15. " - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
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Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater																		
		OW2D - Page 2																		
		11/10/2009	11/10/2009-Dup	5/10/2010	5/10/2010-Dup	11/9/2010	11/9/2010-Dup	5/26/2011	5/26/2011-Dup	11/9/2011	11/9/2011-Dup	5/10/2012	5/10/2012-Dup	11/6/2012	11/6/2012-Dup	5/6/2013	5/6/2013-Dup	11/12/2013	4/3/2014	4/3/2014-Dup	11/10/2014
Acetone	**6,000**	< 10	< 10	**20**	**30**	**20**	**20**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-
Benzene	**5**	**1**	< 1	< 1	< 1	**1**	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1
Chlorobenzene	**100**	< 2	< 2	**3**	**3**	**2**	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**2**
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2
1,2-Dichlorobenzene	**600**	**24**	**24**	**36**	**36**	**24**	**24**	**20**	**22**	**18**	**18**	**18**	**18**	**20**	**20**	**16**	**15**	**15**	**14**	**14**	**15**
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	**2**	**2**	**4**	**4**	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
1,1-Dichloroethane	**81**	**18**	**19**	**23**	**22**	**19**	**19**	**13**	**13**	**14**	**14**	**12**	**12**	**13**	**13**	**8**	**8**	**13**	**8**	**8**	**11**
1,2-Dichloroethane	**5**	**15**	**16**	**19**	**19**	**16**	**16**	**11**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**9**	**8**	**13**	**7**	**7**	**10**
1,1-Dichloroethene	**7**	**1**	**1**	**1**	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1
cis-1,2-Dichloroethene	**70**	**120**	**120**	**130**	**130**	**100**	**110**	**86**	**88**	**82**	**83**	**80**	**80**	**76**	**77**	**47**	**45**	**72**	**46**	**46**	**55**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5
Diisopropyl ether (DIPE)	**120**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	**4**	**4**	**6**	**6**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	**3**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-
Trichloroethene	**5**	**11**	**12**	**14**	**14**	**9**	**9**	**8**	**8**	**7**	**7**	**8**	**8**	**6**	**6**	**5**	**5**	**6**	**4**	**4**	**5**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-
Vinyl chloride	**2**	**7**	**7**	**9**	**9**	**6**	**6**	**5**	**6**	**5**	**5**	**4**	**4**	**4**	**5**	**2**	**2**	**5**	**3**	**3**	**3**
Tert-butyl alcohol (TBA)	**40**	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-
Total VOCs		203	205	265	277	203	213	148	154	143	144	139	139	133	135	89	85	126	84	84	103
1,4-Dioxane	**3**	**120 D**	**110**	**110**	**140**	**100 D**	**98 D**	**90 D**	**99 D**	**46 D J**	**67 D J**	**32**	**32**	**74**	**69**	**80**	**73**	**120**	**45**	**43**	**94**

Notes:
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Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater									
		OW2D - page 3									
		11/10/2014-DUP	5/4/2015	11/18/2015	5/25/2016	10/26/2016	5/30/2017	11/14/2017	5/16/2018	10/30/2018	10/30/2018
Acetone	**6,000**	-	-	-	< 5	< 10	-	-	-	-	-
Benzene	**5**	<1	<1	**0.93**	**0.67**	**0.87**	**0.53**	**0.72**	**0.56**	**0.74**	**0.76**
Chlorobenzene	**100**	**2**	<2	**2**	**1.8**	**1.8**	**1.4**	**1.9**	**1.7**	**1.4**	**1.5**
Chloroethane	**NE**	-	-	-	< 1	< 0.5	< 1	< 1	<0.5	<0.5	<0.5
Chloroform	**70**	<2	<2	<0.75	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	**600**	**15**	**14**	**14**	**13**	**11**	**8.3**	**12**	**10**	**7.8**	**8.7**
1,3-Dichlorobenzene	**600**	-	-	-	< 2.5	< 0.5	-	-	-	-	-
1,4-Dichlorobenzene	**75**	**2**	<1	<2.5	< 2.5	**1.6**	-	-	**1.8**	**1.2**	**1.3**
1,1-Dichloroethane	**81**	**11**	**9**	**14**	**11**	**11**	**7.2**	**10**	**0.86**	**9.8**	**11**
1,2-Dichloroethane	**5**	**11**	**10**	**10**	**9.7**	**8.4**	**6.1**	**8.4**	**6.6**	**8.4**	**8.8**
1,1-Dichloroethene	**7**	<1	<1	**0.55**	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**70**	**56**	**48**	**63**	**51**	**44**	**27**	**36**	**33**	**37**	**40**
cis-1,3-Dichloropropene	**NE**	-	<2	<0.5	-	-	-	-	-	-	-
Diethyl ether	**1,400**	<5	<5	<2.5	< 2.5	**1.8**	< 2.5	< 2.5	**1.3**	**1.6**	**1.8**
Diisopropyl ether (DIPE)	**120**	-	<5	<2	< 2	**1.7**	< 2	< 2	**1.2**	**1.6**	**1.6**
Ethylbenzene	**700**	<1	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
iso-Propylbenzene	**800**	-	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
n-Propylbenzene	**260**	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	<0.5	<0.5	<0.5
p-Isopropyltoluene	**260**	-	-	-	< 0.5	< 0.5	-	-	-	-	-
Tetrachloroethene	**5**	<2	<2	**0.95**	**1.3**	**0.74**	**0.72**	**0.79**	**0.94**	**0.79**	**0.88**
Tetrahydrofuran (THF)	**600**	<10	<10	<5	< 5	< 10	< 5	< 5	<10	<10	<10
Toluene	**1,000**	-	-	-	< 0.75	< 0.5	-	-	-	-	-
trans-1,2-Dichloroethene	**100**	<2	<2	<0.75	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	**70**	-	<1	<2.5	< 2.5	< 0.5	-	-	**0.5**	<0.5	<0.5
1,1,1-Trichloroethane	**200**	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	**5**	-	-	-	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	<0.5
Trichloroethene	**5**	**5**	**5**	**4.3**	**4.6**	**2.9**	**2.3**	**3.1**	**3**	**3.2**	**3.5**
Trichlorofluoromethane	**2,000**	-	-	-	< 2.5	< 0.5	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	**3**	**2**	**2.7**	**3.1**	**3.1**	**2**	**3.2**	**2.4**	**2.5**	**2.7**
Tert-butyl alcohol (TBA)	**40**	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	-	-	-	-	-	-	-	-	-	-
Total VOCs		105	88	112.43	96.17	88.91	55.55	76.11	63.86	76.03	82.54
1,4-Dioxane	**3**	**92**	**55**	**76**	**39**	**140**	**85**	**89**	**106**	**84.6**	**99.8**

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. " - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Overburden Groundwater																	
		FW25																	
		5/16/2002	5/30/2003	5/20/2004	5/3/2005	5/18/2006	5/15/2007	6/13/2007	5/15/2008	5/21/2009	5/12/2010	5/24/2011	5/9/2012	5/7/2013	4/3/2014	5/6/2015	5/24/2016	10/24/2016	5/30/2017	6/1/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-
Benzene	**5**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-		< 1	< 0.5	< 1	<0.5
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2-Dichlorobenzene	**600**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	< 2.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	-	<0.5
1,1-Dichloroethane	**81**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2-Dichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
cis-1,2-Dichloroethene	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	< 0.5	< 2.5	<0.5
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	< 0.5	< 2	<0.5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	< 5	< 10	< 5	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2		< 0.75	< 0.5	< 0.75	<0.5
Trichloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Vinyl chloride	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 1	< 0.5	< 1	<0.5
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30					
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-
Total VOCs		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	NT	< 1 R	< 2.1	< 2	< 2	< 0.1	< 0.1	< 0.1	<0.10	**0.2**	< 0.2	< 0.2	<0.144

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
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9. R indicates that the result is rejected based on data validation criteria.
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11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. " - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater NAI-K2 - Page 1																					
		6/25/2003	5/20/2004	5/3/2005	5/17/2006	5/14/2007	6/13/2007	5/14/2008	5/19/2009	11/11/2009	5/11/2010	11/12/2010	5/25/2011	11/9/2011	5/9/2012	11/6/2012	5/6/2013	11/12/2013	4/4/2014	11/10/2014	5/6/2015	5/6/2015 DUP	11/18/2015	5/24/2016
Acetone	**6,000**	<10	<10	<10	<10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 50	< 50	< 10	< 50	< 10	< 10	< 10	-	-	-	-	< 20
Benzene	**5**	**9**	**4**	**3**	**1**	< 1	< 1	**2**	**1**	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	**1**	<1	<1	**2.5**	< 2
Chlorobenzene	**100**	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 5	< 2	< 5	< 5	< 2	< 5	< 2	< 2	< 2	<2	<2	<2	<2.5	< 2
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 4
Chloroform	**70**	**12**	**7**	**5**	**3**	**3**	**2**	**5**	**3**	< 2	< 5	< 2	< 5	< 5	< 2	< 5	**3**	**3**	< 2	**3**	**3**	**3**	**6**	**3.6**
1,2-Dichlorobenzene	**600**	**20**	**12**	**9**	**4**	**3**	**3**	**6**	**4**	**4**	< 5	**2**	**8**	**7**	**4**	**7**	**7**	**8**	**3**	**9**	**6**	**5**	**14**	< 10
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 10
1,4-Dichlorobenzene	**75**	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	<1	<1	<1	<12	< 10
1,1-Dichloroethane	**81**	**56**	**29**	**26**	**12**	**10**	**8**	**16**	**16**	**17**	**47**	**9**	**45**	**40**	**24**	**25**	**35**	**32**	**23**	**28**	**22**	**20**	**41**	**24**
1,2-Dichloroethane	**5**	**6**	**3**	**2**	<2	< 2	< 2	< 2	< 2	< 2	< 5	< 2	< 5	< 5	< 2	< 5	< 2	< 2	< 2	<2	<2	<2	<2.5	< 2
1,1-Dichloroethene	**7**	**17**	**9**	**8**	**4**	**3**	**2**	**4**	**4**	**3**	**6**	< 1	< 5	< 5	**1**	< 5	**2**	**4**	**1**	**2**	**1**	**1**	**4.6**	**2.3**
cis-1,2-Dichloroethene	**70**	**920**	**390**	**290**	**130**	**83**	**65**	**190**	**220**	**230**	**550**	**120**	**520**	**370**	**190**	**220**	**260**	**270**	**190**	**240**	**200**	**190**	**450**	**290**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	<2	<2.5	-
Diethyl ether	**1,400**	<5	<5	<5	<5	< 5	< 5	< 5	< 5	< 5	< 30	< 5	< 30	< 30	< 5	< 30	< 5	< 5	< 5	<5	<5	<5	<12	< 10
Diisopropyl ether (DIPE)	**120**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 30	< 5	< 30	< 30	< 5	< 30	< 5	< 5	< 5	-	<5	<5	<10	< 8
Ethylbenzene	**700**	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	<1	<1	<1	<2.5	< 2
iso-Propylbenzene	**800**	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	-	<1	<1	<2.5	< 2
n-Propylbenzene	**260**	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2
Tetrachloroethene	**5**	<2	**61**	**58**	**29**	**27**	**23**	**40**	**47**	**32**	**67**	**11**	**49**	**30**	**21**	**26**	**31**	**37**	**23**	**42**	**28**	**26**	**58**	**46**
Tetrahydrofuran (THF)	**600**	<10	<10	<10	<10	< 10	< 10	< 10	< 10	< 10	< 50	< 10	< 50	< 50	< 10	< 50	< 10	< 10	< 10	<10	<10	<10	<25	< 20
Toluene	**1,000**	<1	<1	**1**	<1	< 1	< 1	< 1	< 1	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	-	-	-	-	< 3
trans-1,2-Dichloroethene	**100**	**11**	**5**	**4**	<2	< 2	< 2	< 2	< 2	< 2	< 5	< 2	< 5	< 5	< 2	< 5	**6**	**4**	< 2	**2**	<2	<2	**4.2**	< 3
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**	**2**	**2**	<12	< 10
1,1,1-Trichloroethane	**200**	**310**	**150**	**120**	**45**	**47**	**42**	**98**	**79**	**60**	**96**	**17**	**74**	**43**	**13**	**16**	**40**	**41**	**21**	**34**	**33**	**32**	**54**	**42**
1,1,2-Trichloroethane	**5**	**14**	**7**	**5**	<2	< 2	< 2	**3**	**4**	**2**	**6**	< 2	< 5	< 5	< 2	< 5	< 2	< 2	< 2	-	-	-	-	< 3
Trichloroethene	**5**	**87**	**300**	**250**	**140**	**110**	**110**	**180**	**230**	**180**	**240**	**42**	**140**	**92**	**40**	**49**	**71**	**88**	**54**	**85**	**68**	**64**	**140**	**93**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 10
1,2,4-Trimethylbenzene	**330**	<1	<1	<1	<1	< 1	< 1	**1**	< 1	< 1	< 5	< 1	< 5	< 5	< 1	< 5	< 1	< 1	< 1	-	-	-	-	-
Vinyl chloride	**2**	**18**	**9**	**13**	**9**	**7**	**8**	**6**	**7**	**9**	**20**	**3**	< 10	< 10	**7**	**10**	**7**	**20**	**7**	**14**	**7**	**7**	**15**	**8.8**
Tert-butyl alcohol (TBA)	**40**	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 200	< 30	< 200	< 200	< 30	< 200	< 30	< 30	< 30	-	-	-	-	-
Xylenes (Total)	**10,000**	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-
Total VOCs		1480	986	794	377	293	263	551	615	537	1032	204	836	582	300	353	462	507	322	463	370	350	789.3	509.7
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	**1 J**	< 2	< 2	< 2	< 2	< 2	**0.21 J**	< 0.1	**0.66**	**0.45**	**0.82**	< 0.1	0.85	**14**	**14**	**0.65**	**0.65**

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. * - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater						Source Area Groundwater															
		NAI-K2 - Page 2						DVE-7															
		10/31/2016	5/30/2017	11/15/2017	5/17/2018	5/17/2018 DUP	10/29/2018	6/25/2003	5/20/2004	5/3/2005	6/3/2006	5/14/2007	6/13/2007	5/14/2008	5/21/2009	5/11/2010	5/24/2011	5/10/2012	5/7/2013	4/2/2014	5/7/2015	5/25/2016	10/31/2016	5/30/2017	5/17/2018
Acetone	**6,000**	< 10	-	-	-	-	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-
Benzene	**5**	**2.5**	**1.2**	**1**	**0.69**	**0.86**	**1.2**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
Chlorobenzene	**100**	< 0.5	< 1.2	< 1	<0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Chloroethane	**NE**	< 0.5	< 2.5	< 2	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	<0.5
Chloroform	**70**	**6.8**	**5.3**	**4**	**3.7**	**3.8**	**4.5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**2.4**	< 0.5	< 0.75	<0.5
1,2-Dichlorobenzene	**600**	**14**	**7.2**	**7.2**	**6.2**	**6.1**	**5.4**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	< 2.5	<0.5
1,3-Dichlorobenzene	**600**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,4-Dichlorobenzene	**75**	< 0.5	-	-	**0.59**	**0.55**	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	-	<0.5
1,1-Dichloroethane	**81**	**41**	**29**	**24**	**21**	**21**	**26**	< 2	**2**	< 2	< 2	< 2	< 2	< 2	**2**	**8**	**10**	**10**	**14**	**6**	**7**	**17**	< 0.5	< 0.75	<0.5
1,2-Dichloroethane	**5**	**1.2**	< 1.2	< 1	<0.5	<0.5	**0.62**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1-Dichloroethene	**7**	**5.8**	**3**	**2.5**	**2.7**	**2.8**	**3.4**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	**0.82**	< 0.5	< 0.5	<0.5
cis-1,2-Dichloroethene	**70**	**500**	**340**	**230**	**230**	**230**	**190**	**22**	**19**	**3**	< 2	**2**	< 2	**4**	**30**	**87**	**96**	**42**	**76**	**45**	**55**	**170**	< 0.5	< 0.5	<0.5
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-
Diethyl ether	**1,400**	< 0.5	< 6.2	< 5	<0.5	<0.5	<0.5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	< 0.5	< 2.5	<0.5
Diisopropyl ether (DIPE)	**120**	< 0.5	< 5	< 4	<0.5	<0.5	<0.5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	< 0.5	< 2	<0.5
Ethylbenzene	**700**	< 0.5	< 1.2	< 1	<0.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
iso-Propylbenzene	**800**	< 0.5	< 1.2	< 1	<0.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
n-Propylbenzene	**260**	-	-	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Naphthalene	**20**	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
p-Isopropyltoluene	**260**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-
Tetrachloroethene	**5**	**66**	**49**	**43**	**48**	**47**	**61**	< 2	**21**	**9**	**5**	**17**	**13**	**9**	**10**	**21**	**19**	**12**	**15**	**12**	**16**	**30**	< 0.5	**0.5**	<0.5
Tetrahydrofuran (THF)	**600**	< 10	< 12	< 10	<10	<10	<10	**15**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	< 5	< 10	< 5	<0.5
Toluene	**1,000**	< 0.5	-	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-
trans-1,2-Dichloroethene	**100**	**5**	**3.1**	**2.5**	**2.6**	**2.7**	**3.2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**3**	< 2	< 2	< 2	< 2	<2	**1.3**	< 0.5	< 0.75	<0.5
1,2,4-Trichlorobenzene	**70**	**0.98**	-	-	**2.4**	**2.2**	**0.94**	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5
1,1,1-Trichloroethane	**200**	**70**	**46**	**34**	**33**	**40**	**51**	**20**	**30**	**8**	**4**	**6**	**4**	**6**	**12**	**30**	**20**	**6**	**16**	8	**14**	**35**	< 0.5	< 0.5	<0.5
1,1,2-Trichloroethane	**5**	**4.4**	**3.1**	**2.7**	**2.2**	**2.2**	**2.7**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	**1.6**	< 0.5	< 0.75	<0.5
Trichloroethene	**5**	**190**	**120**	**110**	**98**	**100**	**81**	**35**	**57**	**9**	**5**	**9**	**7**	**13**	**11**	**29**	**28**	**9**	**19**	**11**	**25**	**77**	< 0.5	< 0.5	<0.5
Trichlorofluoromethane	**2,000**	**0.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,2,4-Trimethylbenzene	**330**	-	-	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Vinyl chloride	**2**	**12**	**9.2**	**10**	**4.7**	**5.2**	**8.6**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 1	< 0.5	< 1	<0.5
Tert-butyl alcohol (TBA)	**40**	-	-	-	-	-	-	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-
Xylenes (Total)	**10,000**	-	-	-	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-
Total VOCs		920.5	616.1	471	455.78	464.41	439.56	92	129	29	14	34	24	32	65	178	173	79	140	82	74	335.12	BDL	0.5	BDL
1,4-Dioxane	**3**	**1.5**	**1.2**	**0.62**	**0.891**	**0.748**	**0.747***	NT	NT	NT	NT	NT	NT	**2 J**	< 2.1	< 2	< 2	< 0.1	< 0.1	< 0.1	<0.1	**0.18**	< 0.2	< 0.2	<0.15

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. " - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Source Area Groundwater																	
		DVE-3																	
		5/21/2002	6/25/2003	5/20/2004	5/3/2005	5/17/2006	5/14/2007	6/13/2007	5/14/2008	5/21/2009	5/11/2010	5/25/2011	5/10/2012	5/7/2013	4/2/2014	5/7/2015	5/25/2016	10/31/2016	5/30/2017	5/17/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-
Benzene	**5**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	**6**	**5**	**4**	**5**	**6**	**9**	**8**	**9**	**3**	**5**	**11**	**5.5**	**0.68**	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	<0.5
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2-Dichlorobenzene	**600**	< 1	**2**	**1**	< 1	< 1	**8**	**6**	**5**	**4**	**3**	**5**	**4**	**3**	< 1	**2**	**4.1**	**3.6**	< 2.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	**1**	-	-
1,4-Dichlorobenzene	**75**	< 1	**5**	**2**	< 1	< 1	**6**	**5**	**3**	**4**	**4**	**6**	**6**	**6**	< 1	**4**	**6.9**	**4**	-	<0.5
1,1-Dichloroethane	**81**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	**0.76**	< 0.75	<0.5
1,2-Dichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
cis-1,2-Dichloroethene	**70**	**5**	**3**	**11**	**6**	< 2	**4**	**3**	**2**	**4**	**5**	**4**	**3**	**3**	< 2	<2	**1.8**	**2**	< 0.5	<0.5
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-
Diethyl ether	**1,400**	< 5	< **5**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	< 0.5	< 2.5	<0.5
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	< 0.5	< 2	<0.5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-
Tetrachloroethene	**5**	< 2	< 2	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**0.72**	< 0.5	< 0.5	<0.5
Tetrahydrofuran (THF)	**600**	< 10	**180**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	< 5	< 10	< 5	<0.5
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**3**	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	< 0.75	< 0.5	< 0.75	<0.5
Trichloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	**3**	< 2	< 2	< 2	< 2	<2	**0.56**	**0.57**	< 0.5	<0.5
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,2,4-Trimethylbenzene	**330**	< 1	**3**	< 1	< 1	< 1	**2**	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Vinyl chloride	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 1	**0.62**	< 1	<0.5
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-
Total VOCs		5	193	16	6	BDL	26	20	14	17	24	24	21	21	3	11	25.08	18.05	0.68	BDL
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	NT	< 1 R	< 2.1	< 2	< 2	< 0.1	**0.23**	< 0.1	<0.1	**0.4**	**0.26**	< 0.2	<0.15

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
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6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
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12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. " - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater FW11D - Page 1																						
		5/20/2002	5/30/2003	5/19/2004	5/3/2005	5/17/2006	5/15/2007	6/13/2007	11/14/2007	5/15/2008	5/20/2009	11/10/2009	5/10/2010	11/9/2010	5/24/2011	11/9/2011	5/9/2012	11/6/2012	5/6/2013	11/12/2013	4/3/2014	11/14/2014	5/6/2015	11/16/2015	5/24/2016
Acetone	**6,000**	< 10	<10	<10	<10	<10	< 10	< 10	< 10	< 10	< 10	< 10	**10**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	-	< 5
Benzene	**5**	< 1	<1	<1	<1	<1	< 1	**2**	**3**	**2**	**4**	**2**	< 1	< 1	**2**	**2**	**2**	< 1	**1**	**2**	**1**	**5**	**6**	**4.9**	**4.8**
Chlorobenzene	**100**	**2**	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	**1.7**	**1.7**
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1
Chloroform	**70**	< 2	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	< 0.75
1,2-Dichlorobenzene	**600**	**1**	<1	<1	1<	<1	< 1	**5**	**8**	**6**	**12**	**6**	**5**	**3**	**7**	**8**	**7**	**7**	**6**	**8**	**6**	**19**	**22**	**18**	**20**
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5
1,4-Dichlorobenzene	**75**	< 1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	**2**	**2**	<2.5	< 2.5
1,1-Dichloroethane	**81**	**7**	**2**	**3**	<2	**3**	< 2	**12**	**19**	**15**	**24**	**13**	**16**	**11**	**17**	**18**	**15**	**13**	**10**	**16**	**12**	**25**	**26**	**27**	**26**
1,2-Dichloroethane	**5**	**4**	<2	<2	<2	<2	< 2	**7**	**10**	**8**	**12**	**6**	**5**	< 2	**8**	**8**	**7**	**6**	**5**	**8**	**5**	**16**	**15**	**13**	**14**
1,1-Dichloroethene	**7**	< 1	<1	<1	<1	<1	< 1	< 1	**1**	**1**	**1**	< 1	**1**	**1**	**2**	< 1	< 1	< 1	< 1	< 1	< 1	**2**	**2**	**1.6**	**1.2**
cis-1,2-Dichloroethene	**70**	**16**	**6**	**9**	**3**	**9**	< 2	**24**	**31**	**28**	**51**	**23**	**30**	**22**	**35**	**34**	**30**	**30**	**20**	**26**	**25**	**49**	**54**	**60**	**60**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	**0.5**	-
Diethyl ether	**1,400**	< 5	<5	<5	<5	<5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	<5	**4.2**	**4.3**
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-	<5	**4.7**	**5.5**
Ethylbenzene	**700**	< 1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	**2**	**0.9**	**0.84**
iso-Propylbenzene	**800**	< 1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	<1	**0.71**	**0.54**
n-Propylbenzene	**260**	< 1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5
Tetrachloroethene	**5**	< 2	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	**0.53**	< 0.5
Tetrahydrofuran (THF)	**600**	**10**	<10	<10	<10	<10	< 10	**10**	**20**	**20**	**20**	**10**	< 10	< 10	**10**	< 10	< 10	< 10	< 10	< 10	< 10	**10**	**10**	**5.9**	**12**
Toluene	**1,000**	< 1	<1	1<	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	< 0.75
trans-1,2-Dichloroethene	**100**	< 2	<2	<2	<2	<2	< 2	< 2	**2**	< 2	**3**	< 2	< 2	< 2	**2**	< 2	**2**	**2**	< 2	**2**	< 2	**2**	**2**	**2.8**	**2.6**
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	<2.5	< 2.5
1,1,1-Trichloroethane	**200**	< 2	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5
1,1,2-Trichloroethane	**5**	< 2	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	< 0.75
Trichloroethene	**5**	**16**	**7**	**9**	**5**	**7**	**3**	**6**	**8**	**10**	**7**	**6**	**27**	**17**	**11**	**7**	**7**	**7**	**6**	**4**	**4**	**29**	**24**	**22**	**10**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5
1,2,4-Trimethylbenzene	**330**	< 1	<1	<1	<1	<1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-
Vinyl chloride	**2**	**8**	<2	<2	<2	**3**	< 2	**28**	**27**	**37**	**46**	**23**	**15**	**8**	**34**	**29**	**23**	**18**	**13**	**27**	**19**	**17**	**16**	**17**	**22**
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	**< 30**	< 30	-	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-
Xylenes (Total)	**10,000**	< 2	<2	<2	<2	<2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-
Total VOCs		64	15	21	8	22	3	94	129	127	174	89	109	62	128	106	93	83	61	93	72	176	181	185.4	185.5
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	NT	NT	**450 J**	**500**	**210 D**	**230**	**110 D**	**300 D**	**160 D J**	**120**	**240**	**270**	**480**	**240**	**360**	**380**	**260**	**420**

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. " - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater												
		FW11D - Page 2				FW11D-55			FW11D-70			FW11D-90		
		10/26/2016	5/30/2017	11/14/2017	5/16/2018	6/15/2018	7/31/2018	10/30/2018	6/15/2018	7/31/2018	10/30/2018	6/15/2018	7/31/2018	10/30/2018
Acetone	**6,000**	< 10	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	**5**	**0.75**	< 0.5	**5.2**	**0.64**	**0.79**	-	**0.69**	**6.9**	-	**11**	**6**	-	**14**
Chlorobenzene	**100**	**0.76**	< 0.5	**1.6**	**0.77**	**1.1**	-	**0.97**	**2**	-	**2.4**	**1.7**	-	**2.6**
Chloroethane	**NE**	< 0.5	< 1	< 1	<0.5	**0.74**	-	<0.5	<0.5	-	**0.52**	<0.5	-	<0.5
Chloroform	**70**	< 0.5	< 0.75	< 0.75	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
1,2-Dichlorobenzene	**600**	**11**	**3.7**	**19**	**12**	**15**	-	**19**	**19**	-	**20**	**15**	-	**18**
1,3-Dichlorobenzene	**600**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	**1.1**	-	-	**1.4**	**1.3**	-	**1.6**	**1.4**	-	**1.5**	**1.2**	-	**1.3**
1,1-Dichloroethane	**81**	**14**	**4.5**	**26**	**13**	**18**	-	**19**	**34**	-	**61**	**30**	-	**68**
1,2-Dichloroethane	**5**	**7.2**	**2.5**	**14**	**7.4**	**9.1**	-	**9.6**	**20**	-	**34**	**19**	-	**40**
1,1-Dichloroethene	**7**	**1.2**	< 0.5	**0.85**	**1.1**	**1.1**	-	**1.8**	**0.56**	-	**1.2**	<0.5	-	<0.5
cis-1,2-Dichloroethene	**70**	**51**	**16**	**49**	**50**	**66**	-	**87 E**	**26**	-	**61**	**24**	-	**17**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	**1.5**	< 2.5	**4**	**1.4**	**2.4**	-	**1.9**	**6.7**	-	**11**	**6**	-	**13**
Diisopropyl ether (DIPE)	**120**	**2**	< 2	**5.5**	**1.9**	**2.9**	-	**2.5**	**7.2**	-	**11**	**6.3**	-	**13**
Ethylbenzene	**700**	< 0.5	< 0.5	**0.57**	<0.5	<0.5	-	<0.5	**0.59**	-	**0.66**	**0.62**	-	**1**
iso-Propylbenzene	**800**	< 0.5	< 0.5	**0.78**	<0.5	<0.5	-	<0.5	**0.96**	-	**1**	**0.96**	-	**1.5**
n-Propylbenzene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	-	-	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
p-Isopropyltoluene	**260**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	**0.67**	**1.2**	< 0.5	**0.95**	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Tetrahydrofuran (THF)	**600**	< 10	**5.6**	**6.8**	<10	<10	-	<10	**11**	-	**21**	<10	-	**12**
Toluene	**1,000**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	**100**	**1.5**	< 0.75	**2.6**	**1.9**	**3.4**	-	**3.1**	**2.2**	-	**4**	**1.8**	-	**1.8**
1,2,4-Trichlorobenzene	**70**	< 0.5	-	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
1,1,1-Trichloroethane	**200**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
1,1,2-Trichloroethane	**5**	< 0.5	< 0.75	< 0.75	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Trichloroethene	**5**	**35**	**13**	**5.4**	**35**	**23**	-	**50**	**11**	-	**26**	**5.3**	-	**0.86**
Trichlorofluoromethane	**2,000**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	**1.6**	< 1	**21**	**1.4**	**3.4**	-	**2**	**6.3**	-	**9.6**	**3.7**	-	**11**
Tert-butyl alcohol (TBA)	**40**	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
Total VOCs		129.28	46.5	162.3	128.86	145.6	-	199.16	148.91	-	265.88	115.58	-	201.06
1,4-Dioxane	**3**	**380**	**120**	**590**	**316**	**557**	**430**	**458**	**986**	**851**	**1170**	**741**	**832**	**978**

Notes:
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4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. [a] - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater																	
		ERT01																	
		5/17/2002	5/30/2003	5/19/2004	5/3/2005	5/18/2006	5/14/2007	5/15/2008	5/21/2009	5/11/2010	5/25/2011	5/10/2012	5/7/2013	3/31/2014	5/5/2015	5/23/2016	10/24/2016	5/30/2017	5/17/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-
Benzene	**5**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	<0.5
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2-Dichlorobenzene	**600**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	< 2.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	-	<0.5
1,1-Dichloroethane	**81**	**5**	**2**	< 2	**2**	< 2	**2**	**2**	< 2	< 2	< 2	< 2	**2**	< 2	<2	**1.8**	**1.7**	**1.4**	**1.6**
1,2-Dichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1-Dichloroethene	**7**	**2**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
cis-1,2-Dichloroethene	**70**	**22**	**12**	**11**	**13**	**12**	**15**	**15**	**12**	**15**	**18**	**14**	**21**	**16**	**15**	**17**	**15**	**13**	**13**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	**0.72**	< 2.5	**0.68**
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	< 0.5	< 2	<0.5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	**0.84**	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	**6**	< 10	< 5	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**0.95**	**0.94**	**0.76**	**0.97**
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	< 0.75	< 0.5	< 0.75	<0.5
Trichloroethene	**5**	**29**	**18**	**2**	**15**	**10**	**9**	**10**	**5**	**6**	**7**	**4**	**6**	**4**	**4**	**3.4**	**3**	**2.9**	**2.4**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Vinyl chloride	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 1	< 0.5	< 1	<0.5
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-
Total VOCs		58	32	13	30	22	26	27	17	21	25	18	29	20	19	29.15	22.2	18.06	18.65
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	**31 J**	**18**	**17**	**20**	**5.3**	**14**	**13**	**15**	**13**	**22**	**21**	**19**

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. ª - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater																	
		LGSW																	
		5/20/2002	5/30/2003	8/2/2004	5/3/2005	5/18/2006	5/14/2007	5/15/2008	5/20/2009	5/11/2010	5/25/2011	5/10/2012	5/7/2013	3/31/2014	5/5/2015	5/23/2016	10/25/2016	5/31/2017	5/17/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-
Benzene	**5**	**9**	**11**	**9**	**8**	**9**	**8**	**8**	**8**	**7**	**7**	**6**	**8**	**7**	**7**	**6.1**	**6.5**	**7**	**6.3**
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	<0.5
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2-Dichlorobenzene	**600**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	< 2.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	-	<0.5
1,1-Dichloroethane	**81**	**5**	**5**	**4**	**4**	**4**	**4**	**3**	**3**	**3**	**3**	**2**	**3**	**2**	**2**	**2**	**1.9**	**2.3**	**2.1**
1,2-Dichloroethane	**5**	**2**	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**1.2**	**0.77**	**1.4**	**0.98**
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
cis-1,2-Dichloroethene	**70**	**2**	**2**	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**0.93**	**0.91**	**1**	**1**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	**0.83**	< 2.5	**1**
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	**0.98**	< 2	**1.1**
Ethylbenzene	**700**	**2**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	< 5	< 10	< 5	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	< 0.75	< 0.5	< 0.75	<0.5
Trichloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-
1,2,4-Trimethylbenzene	**330**	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
Vinyl chloride	**2**	**6**	**5**	**6**	**5**	**5**	**4**	< 2	< 2	**3**	**4**	**2**	**2**	**2**	<2	**1.4**	**1.2**	**1.7**	**1.3**
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-
Total VOCs		27	25	21	17	18	16	11	11	13	14	10	13	11	9	11.6	13.1	13.4	13.78
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	**57 J**	**43**	**42**	**37**	**13**	**35**	**30**	**35**	**43**	**56**	**49**	**66.2**

Notes:
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6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
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8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
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13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
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Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater																						
		FW21D														FW21D-40			FW21D-60				
		5/16/2002	5/30/2003	5/18/2004	5/3/2005	5/18/2006	5/15/2007	5/15/2008	5/21/2009	5/11/2010	5/25/2011	5/10/2012	5/7/2013	3/31/2014	5/5/2015	5/23/2016	10/27/2016	5/31/2017	5/18/2018	10/27/2016	5/31/2017	5/31/2017	5/18/2018	5/18/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	< 5	< 10	-	-	< 10	-	-	-	-
Benzene	**5**	**5**	**5**	**4**	**4**	**4**	**4**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.3**	**2.1**	**2.2**	**2.4**	**2**	**3**	**2.9**	**2.6**	**2.6**
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**0.58**	< 0.5	< 0.5	<0.5	< 0.5	**0.56**	**0.52**	<0.5	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	<0.5	< 0.5	< 1	< 1	**0.68**	**0.62**
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
1,2-Dichlorobenzene	**600**	**28**	**21**	**21**	**20**	**20**	**19**	**19**	**20**	**18**	**19**	**14**	**16**	**13**	**15**	**14**	**9.6**	**9.4**	**9.9**	**7.8**	**10**	**10**	**8.1**	**8.9**
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	< 0.5	-	-	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 2.5	< 0.5	-	<0.5	< 0.5	-	-	<0.5	<0.5
1,1-Dichloroethane	**81**	**34**	**26**	**21**	**22**	**21**	**20**	**19**	**17**	**18**	**17**	**13**	**16**	**14**	**14**	**13**	**11**	**12**	**15**	**11**	**17**	**16**	**14**	**15**
1,2-Dichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**0.77**	**0.54**	**0.63**	**0.63**	**0.56**	**0.74**	**0.92**	**0.74**	**0.76**
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**70**	**20**	**21**	**18**	**19**	**18**	**17**	**14**	**15**	**13**	**14**	**11**	**13**	**11**	**8**	**6.4**	**18**	**24**	**25**	**10**	**28**	**29**	**20**	**20**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	**6**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2.5	**1.6**	< 2.5	**2**	**1.6**	< 2.5	< 2.5	**2**	**2**
Diisopropyl ether (DIPE)	**120**	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 2	< 0.5	< 2	<0.5	< 0.5	< 2	< 2	<0.5	<0.5
Ethylbenzene	**700**	**99**	**69**	**60**	**52**	**47**	**40**	**35**	**34**	**32**	**31**	**22**	**27**	**21**	**24**	**12**	**2.5**	**4.3**	**3.4**	< 0.5	**9.7**	**8.5**	<0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	<0.5	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-	< 0.5	-	-	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Tetrahydrofuran (THF)	**600**	**40**	**30**	**30**	**30**	**30**	**30**	**30**	**20**	**30**	**20**	**30**	**30**	**20**	**30**	**27**	**18**	**20**	**24**	**19**	**19**	**21**	**26**	**26**
Toluene	**1,000**	**2**	**2**	**1**	**1**	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	< 0.75	< 0.5	-	-	< 0.5	-	-	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.75	< 0.5	< 0.75	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	< 2.5	< 0.5	-	<0.5	< 0.5	-	-	<0.5	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	< 0.75	< 0.5	< 0.75	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
Trichloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	< 0.5	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	**15**	**6**	**6**	**6**	**5**	**4**	< 2	**4**	**3**	**4**	**2**	**2**	**2**	<2	**1.5**	**4.4**	**5.6**	**5**	**1.5**	**4.3**	**4**	**2.4**	**2.3**
Tert-butyl alcohol (TBA)	**40**	NT	< 50	< 50	< 50	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	**3**	**3**	**2**	**2**	**2**	**1**	< 2	< 2	**1**	< 2	< 2	< 2	-	-	-	-	-	-	-	-	-	-
Total VOCs		249	183	164	156	148	136	121	113	117	109	95	107	84	94	77.6	65.6	75.9	84.9	51.5	88.7	89.4	73.2	75.0
1,4-Dioxane	**3**	NT	NT	NT	NT	NT	NT	**10 J**	**5.8**	**5.6**	**5.3**	**1.7**	**4.7**	**3.8**	**4.1**	**3.8**	**7**	**5.6**	**5.25**	**5.5**	**5.9**	**5.9**	**5.82**	**5.6**

Notes:
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3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
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7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
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10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. [a] - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater			Bedrock Groundwater																	
		FW21D-78			FW28D																	
		10/27/2016	5/31/2017	5/18/2018	5/21/2002	11/11/2002	5/30/2003	11/6/2003	5/19/2004	11/3/2004	5/3/2005	11/18/2005	5/18/2006	11/8/2006	5/14/2007	5/15/2008	11/6/2008	11/6/2008-Dup	5/20/2009	11/11/2009	5/12/2010	11/9/2010	5/24/2011	11/9/2011
Acetone	**6,000**	**12**	**-**	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	**5**	**2**	**2.8**	**2.4**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	**100**	< 0.5	**0.62**	**0.56**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloroethane	**NE**	< 0.5	< 1	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	**70**	< 0.5	< 0.75	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	**600**	**8.5**	**13**	**13**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	**600**	< 0.5	**-**	**-**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	< 0.5	**-**	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethane	**81**	**11**	**15**	**18**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloroethane	**5**	**0.66**	**0.93**	**0.66**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethene	**7**	< 0.5	< 0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichloroethene	**70**	**6.6**	**7**	**6.5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
cis-1,3-Dichloropropene	**NE**	**-**	**-**	**-**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	**1.7**	< 2.5	**2.6**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diisopropyl ether (DIPE)	**120**	< 0.5	< 2	<0.5	NT	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	**700**	< 0.5	**1.1**	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
iso-Propylbenzene	**800**	< 0.5	< 0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
n-Propylbenzene	**260**	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Naphthalene	**20**	**-**	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	**0.86**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	< 0.5	< 0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Tetrahydrofuran (THF)	**600**	**22**	**22**	**26**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene	**1,000**	< 0.5	**-**	**-**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,2-Dichloroethene	**100**	< 0.5	< 0.75	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2,4-Trichlorobenzene	**70**	< 0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	**200**	< 0.5	< 0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2-Trichloroethane	**5**	< 0.5	< 0.75	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	**5**	< 0.5	< 0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichlorofluoromethane	**2,000**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	**-**	**-**	**-**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl chloride	**2**	**1**	**1.6**	**1.9**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Tert-butyl alcohol (TBA)	**40**	**-**	**-**	**-**	NT	NT	< 50	< 50	< 50	< 50	< 50	< 30	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	<30	< 30	< 30
Xylenes (Total)	**10,000**	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Total VOCs		52.3	60.6	68.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dioxane	**3**	**5.4**	**3.3**	**5.69**	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	< 1 R	< 2	NT	**1**	< 2	<2	<2	**2**	**1 J**

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. * - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater																			
		FW28D - Page 2										FW28D-80					FW28D-104				
		5/9/2012	11/6/2012	5/6/2013	11/12/2013	4/2/2014	11/14/2014	5/6/2015	11/16/2015	5/24/2016	5/24/2016 DUP	10/28/2016	5/31/2017	11/15/2017	5/18/2018	10/31/2018	10/28/2016	5/31/2017	11/15/2017	5/18/2018	10/31/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	-	-	-	< 5	< 5	< 10	-	-	-	-	< 10	-	-	-	-
Benzene	**5**	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	< 1	< 1	< 0.5	< 1	< 1	<0.5	<0.5	< 0.5	< 1	< 1	<0.5	<0.5
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	< 0.75	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
1,2-Dichlorobenzene	**600**	< 1	< 1	< 1	< 1	< 1	<1	<1	<2.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	<0.5	<0.5	< 0.5	< 2.5	< 2.5	<0.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	< 2.5	< 2.5	< 0.5	-	-	-	-	< 0.5	-	-	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	<1	<1	<2.5	< 2.5	< 2.5	< 0.5	-	-	<0.5	<0.5	< 0.5	-	-	<0.5	<0.5
1,1-Dichloroethane	**81**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	< 0.75	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
1,2-Dichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**70**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	<2	<0.5			-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	<5	<5	<2.5	< 2.5	< 2.5	< 0.5	< 2.5	< 2.5	<0.5	<0.5	< 0.5	< 2.5	< 2.5	<0.5	<0.5
Diisopropyl ether (DIPE)	**120**	< 5	< 5	< 5	< 5	< 5	-	<5	<2	< 2	< 2	< 0.5	< 2	< 2	<0.5	<0.5	< 0.5	< 2	< 2	<0.5	<0.5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	-	<1	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-			-	-	-	<0.5	<0.5	-	-	-	**0.52**	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	< 0.5	< 0.5	< 0.5	-	-	-	-	< 0.5	-	-	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	<2	<2	<5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	<10	<10	<0.75	< 5	< 5	< 10	< 5	< 5	<10	<10	< 10	< 5	< 5	<10	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	-	-	-	< 0.75	< 0.75	< 0.5	-	-	-	-	< 0.5	-	-	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.75	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	<1	<1	<2.5	< 2.5	< 2.5	< 0.5	-	-	<0.5	<0.5	< 0.5	-	-	<0.5	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	-	-	-	< 0.75	< 0.75	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
Trichloroethene	**5**	< 2	< 2	< 2	< 2	< 2	<2	<2	<2.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	< 2.5	< 2.5	< 0.5	-	-	-	-	< 0.5	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	< 2	< 2	< 2	< 2	< 2	<2	<2	<1	< 1	< 1	< 0.5	< 1	< 1	<0.5	<0.5	< 0.5	< 1	< 1	<0.5	<0.5
Tert-butyl alcohol (TBA)	**40**	<30	< 30	< 30	< 30	< 30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total VOCs		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.52	BDL
1,4-Dioxane	**3**	**0.43**	**1.5**	**1.8**	**2**	**1.6**[a]	**1.7**	**1.0**	<0.10	**1.8**	**1.8**	< 0.2	< 0.2	< 0.2	<0.142	<0.142	**0.22**	< 0.2	< 0.2	**0.18**	**0.538***

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. [a] - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater					Bedrock Groundwater														
		FW28D-174					ERT04 - Page 1														
		10/28/2016	5/31/2017	11/15/2017	5/18/2018	10/31/2018	5/17/2002	11/11/2002	5/30/2003	11/6/2003	5/18/2004	11/3/2004	5/3/2005	11/18/2005	5/18/2006	11/8/2006	5/15/2007	11/14/2007	5/15/2008	11/6/2008	5/20/2009	11/11/2009	5/12/2010
Acetone	**6,000**	< 10	-	-	-	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	**5**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	**100**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloroethane	**NE**	< 0.5	< 1	< 1	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	**70**	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichlorobenzene	**600**	< 0.5	< 2.5	< 2.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	**600**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	< 0.5	-	-	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethane	**81**	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2-Dichloroethane	**5**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1-Dichloroethene	**7**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichloroethene	**70**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	< 0.5	< 2.5	< 2.5	<0.5	<0.5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diisopropyl ether (DIPE)	**120**	< 0.5	< 2	< 2	<0.5	<0.5	NT	NT	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	**700**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
iso-Propylbenzene	**800**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
n-Propylbenzene	**260**	-	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Naphthalene	**20**	-	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
p-Isopropyltoluene	**260**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Tetrahydrofuran (THF)	**600**	< 10	< 5	< 5	<10	<10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene	**1,000**	**0.57**	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	**1**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,2-Dichloroethene	**100**	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2,4-Trichlorobenzene	**70**	< 0.5	-	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	**200**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2-Trichloroethane	**5**	< 0.5	< 0.75	< 0.75	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichloroethene	**5**	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Trichlorofluoromethane	**2,000**	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	-	-	-	-	-	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl chloride	**2**	< 0.5	< 1	< 1	<0.5	<0.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Tert-butyl alcohol (TBA)	**40**	-	-	-	-	-	NT	NT	< 50	< 50	< 50	< 50	< 50	< 30	< 50	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30
Xylenes (Total)	**10,000**	-	-	-	-	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Total VOCs		0.57	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dioxane	**3**	**0.35**	**1.3**	**1.4**	**1.44**	**1.84***	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	< 1 R	< 2	< 2.1	< 2	< 2

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. * - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	Bedrock Groundwater																					
		ERT04 - Page 2																					
		11/12/2010	5/27/2011	11/9/2011	5/9/2012	11/6/2012	5/6/2013	11/12/2013	4/2/2014	11/10/2014	5/5/2015	11/19/2015	11/19/2015 DU	5/23/2016	10/28/2016	5/31/2017	6/27/2017	7/25/2017	10/2/2017	10/2/2017	11/15/2017	11/15/2017	5/17/2018	10/29/2018
Acetone	**6,000**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	-	-	< 5	< 10	-	-	-	-	-	-	-	-
Benzene	**5**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	<0.5	< 0.5	< 0.5	**0.63**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Chlorobenzene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	<0.5	< 0.5	< 0.5	**0.66**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
Chloroethane	**NE**	-	-	-	-	-	-	-	-	-	-	-	-	< 1	< 0.5	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 1	<0.5	<0.5
Chloroform	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	<0.75	< 0.75	< 0.5	< 0.75	**0.75**	**0.68**	< 0.5	< 0.5	< 0.75	< 0.75	**0.63**	**0.59**
1,2-Dichlorobenzene	**600**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<2.5	<2.5	< 2.5	< 0.5	**4.8**	< 2.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	<0.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	-	-	-	-	<1	-	-	-	< 2.5	< 0.5	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**75**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<2.5	<2.5	< 2.5	< 0.5	-	-	-	-	-	-	-	<0.5	<0.5
1,1-Dichloroethane	**81**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.75	<0.75	< 0.75	< 0.5	**6.5**	**6.2**	**6.5**	**1.3**	**1.3**	**1.3**	**1.2**	**5.5**	**4**
1,2-Dichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
1,1-Dichloroethene	**7**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**70**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	<0.5	**0.83**	< 0.5	< 0.5	**19**	**20**	**4**	**3.9**	**5.3**	**5.1**	**24**	**25**
cis-1,3-Dichloropropene	**NE**	-	-	-	-	-	-	-	-	-	<2	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-
Diethyl ether	**1,400**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	<5	<5	<2.5	<2.5	< 2.5	< 0.5	< 2.5	< 2.5	< 0.5	< 0.5	< 0.5	< 2.5	< 2.5	<0.5	<0.5
Diisopropyl ether (DIPE)	**120**	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	-	<5	<2	<2	< 2	< 0.5	< 2	< 2	< 0.5	< 0.5	< 0.5	< 2	< 2	<0.5	<0.5
Ethylbenzene	**700**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	<1	<1	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
iso-Propylbenzene	**800**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	<1	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5
n-Propylbenzene	**260**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	< 0.5	-	-	-	-	-	-	-	-	-
Tetrachloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<5	<5	< 0.5	< 0.5	< 0.5	**8.5**	**7.7**	**1.6**	**1.6**	**1.6**	**1.5**	**6.7**	**7.2**
Tetrahydrofuran (THF)	**600**	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	<10	<10	<0.75	<0.75	< 5	< 10	< 5	< 5	< 10	< 10	< 10	< 5	< 5	<10	<10
Toluene	**1,000**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	< 0.75	< 0.5	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	**100**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	<0.5	< 0.75	< 0.5	< 0.75	< 0.75	< 0.5	< 0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
1,2,4-Trichlorobenzene	**70**	-	-	-	-	-	-	-	-	<1	<1	<2.5	<2.5	< 2.5	< 0.5	-	-	-	-	-	-	-	<0.5	<0.5
1,1,1-Trichloroethane	**200**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<0.5	<0.5	< 0.5	< 0.5	< 0.5	**5.7**	**4.2**	**0.78**	**0.76**	**0.93**	**0.92**	**4.2**	**3.3**
1,1,2-Trichloroethane	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	< 0.75	< 0.5	< 0.75	< 0.75	< 0.5	< 0.5	< 0.5	< 0.75	< 0.75	<0.5	<0.5
Trichloroethene	**5**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	**9**	**1.2**	**1.0**	**2.6**	**1.2**	< 0.5	**83**	**70**	**14**	**14**	**16**	**16**	**68**	**78**
Trichlorofluoromethane	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	<2	<2	<1	<1	< 1	< 0.5	< 1	< 1	< 0.5	< 0.5	< 0.5	< 1	< 1	<0.5	<0.5
Tert-butyl alcohol (TBA)	**40**	< 30	< 30	< 30	< 30	< 30	< 30	< 30	< 30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total VOCs		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	9	1.2	1.0	3.43	1.2	12.59	123.15	109.08	21.7	21.6	25.1	24.7	109.03	118.09
1,4-Dioxane	**3**	< 2	< 2	< 0.1 J	< 0.1	< 0.2	< 0.1	< 0	< 0.1	<0.1	<0.10	<0.10	<0.10	< 0.1	< 0.2	**11**	< 0.2	< 0.2	< 0.2 *	< 0.2 *	< 0.2	< 0.2	<0.167	<0.147

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. * - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 6
Detected Volatile Organic Compounds in Groundwater (2002-2018)
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	Site Cleanup Level/MCL/ NHDES AGQS	PUMP STATION	TGW	TRWS						2 MERCURY PRE-TREATMENT		2 MERCURY POST-TREATMENT
		6/14/2018	8/3/2018	4/1/2014	5/5/2015	5/23/2016	10/25/2016	5/31/2017	5/17/2018	8/3/2018	8/30/2018	8/30/2018
Acetone	**6,000**	-	-	-	-	< 5	< 10	-	-	-	-	-
Benzene	**5**	<0.5	<0.5	<1	<1	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	**100**	<0.5	<0.5	<2	<2	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	**NE**	<0.5	<0.5	-	-	< 1.0	< 0.5	< 1	<0.5	<0.5	<0.5	<0.5
Chloroform	**70**	<0.5	<0.5	<2	<2	< 0.75	< 0.5	< 0.75	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	**600**	<0.5	<0.5	<1	<1	< 2.5	< 0.5	< 2.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	**600**	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-
1,4-Dichlorobenzene	**75**	<0.5	<0.5	<1	<1	< 2.5	< 0.5	-	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	**81**	<0.5	<0.5	<2	<2	< 0.75	< 0.5	< 0.75	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	**5**	<0.5	<0.5	<2	<2	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	**7**	<0.5	<0.5	<1	<1	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	**70**	<0.5	<0.5	<2	<2	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	**NE**	-	-	-	<2	-	-	-	-	-	-	-
Diethyl ether	**1,400**	NS	<0.5	<5	<5	< 0.5	< 0.5	< 2.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	**120**	NS	<0.5		<5	< 0.5	< 0.5	< 2	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	**700**	<0.5	<0.5	<1	<1	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
iso-Propylbenzene	**800**	<0.5	<0.5	-	<1	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	**260**	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	**20**	<0.5	<0.5	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	**260**	-	-	-	-	< 0.5	< 0.5	-	-	-	-	-
Tetrachloroethene	**5**	<0.5	<0.5	<2	<2	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran (THF)	**600**	NS	<10	<10	<10	< 5	< 10	< 5	<10	<10	<10	<10
Toluene	**1,000**	-	-	-	-	< 0.75	< 0.5	-	-	-	-	-
trans-1,2-Dichloroethene	**100**	<0.5	<0.5	<2	<2	< 0.75	< 0.5	< 0.75	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	**70**	<0.5	<0.5	<1	<1	< 2.5	< 0.5	-	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	**200**	<0.5	<0.5	<2	<2	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	**5**	<0.5	<0.5	-	-	< 0.75	< 0.5	< 0.75	<0.5	<0.5	<0.5	<0.5
Trichloroethene	**5**	<0.5	<0.5	<2	<2	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	**2,000**	-	-	-	-	< 2.5	< 0.5	-	-	-	-	-
1,2,4-Trimethylbenzene	**330**	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	**2**	<0.5	<0.5	<2	<2	< 1.0	< 0.5	< 1	<0.5	<0.5	<0.5	<0.5
Tert-butyl alcohol (TBA)	**40**	-	-	-	-	-	-	-	-	-	-	-
Xylenes (Total)	**10,000**	-	-	-	-	-	-	-	-	-	-	-
Total VOCs		BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dioxane	**3**	**0.376**	**0.267**	NA	NA	<250	< 0.2	< 0.2	<0.15	**0.42**	<0.144	**0.159**

Notes:
1. All results are in micrograms per liter (µg/L).
2. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
3. AGQS indicates Ambient Groundwater Quality Standards established by the New Hampshire Groundwater Protection Rules (Env-Wq 402).
4. MCL indicates Maximum Contaminant Concentration as established by the USEPA under the Safe Drinking Water Act.
5. NE indicates that no MCL/AGQS Standard exists for that compound.
6. **Bold** values indicate compounds that were detected above laboratory minimum detection limits.
7. Shaded values indicate compounds detected at concentrations greater that the MCL/AGQS.
8. Total VOCs include all detected VOCs except 1,4-dioxane. BDL indicates that no VOCs were detected above the laboratory detection limit.
9. R indicates that the result is rejected based on data validation criteria.
10. J indicates that the result is estimated based on data validation criteria.
11. NT indicates not tested for this parameter.
12. D indicates sample was diluted prior to analysis.
13. On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*)
14. E indicates result should be considered estimated.
15. [a] - A concentration of 3.2 µg/L was detected in well FW28D during packer interval sampling in April 2014.

Table 7
Summary of 2016 Supplemental VOC Groundwater Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Sample Name Sample Date	EPA MCL/ Cleanup Level	NH Ambient GW Quality Standard	D2 D-2-20161024 10/24/2016	D3 D-3-20161024 10/24/2016	DVE-3 DVE-3-20161031 10/31/2016	DVE-7 DVE-7-20161031 10/31/2016	ERT01 ERT-01-20161024 10/24/2016	ERT02 ERT-02-20161021 10/21/2016	ERT03 ERT-03-20161027 10/27/2016	ERT04 ERT-04-20161028 10/28/2016	ERT06 ERT-06-201610127 10/27/2016	ERT08 ERT-08-20161028 10/28/2016
Volatile Organic Compounds (ug/L)												
1,1,1-Trichlorethane	200	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NA	81	<0.5	**0.6**	**0.76**	<0.5	**1.7**	<0.5	<0.5	<0.5	**6.2**	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	600	600	<0.5	<0.5	**3.6**	<0.5	<0.5	<0.5	<0.5	<0.5	**6.7**	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	NA	600	<0.5	<0.5	**1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	75	<0.5	<0.5	**4**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	5	**1**	**1.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.86**	<0.5
Chlorobenzene	100	100	<0.5	<0.5	**5.5**	<0.5	<0.5	<0.5	<0.5	<0.5	**0.74**	<0.5
Choroethane	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform (Trichloromethane)	80	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	**2**	<0.5	**15**	**0.63**	<0.5	<0.5	**0.64**	<0.5
Cymene (p-Isopropyltoluene)	NA	260	<0.5	<0.5	<0.5	<0.5	**0.84**	<0.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	NA	120	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1,400	<0.5	<0.5	<0.5	<0.5	**0.72**	<0.5	<0.5	<0.5	**1.6**	<0.5
Ethylbenzene	700	700	<0.5	**0.67**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Tert Butyl Ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**12**
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran	NA	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	1,000	1,000	<0.5	**1.3**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichlorethene	100	100	<0.5	<0.5	<0.5	<0.5	**0.94**	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	**0.57**	<0.5	**3**	<0.5	<0.5	**1.2**	<0.5	<0.5
Trichlorofluoromethane (CFC-11)	NA	2,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<0.5	**3.9**	**0.62**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	**1**	**8.17**	**18.05**	ND	**22.2**	**0.63**	ND	**1.2**	**16.74**	**12**
Volatile Organic Compounds SIM (ug/L)												
1,4-Dioxane	3	0.32*	**14**	**15**	**0.26**	<0.2	**22**	**16**	**2.4**	<0.2	**14**	<0.2

Notes:

HCCWS: Holy Cross Cemetery Water Supply Well (Gilcreast Road)

MCL: Maximum Contaminant Level

NA: Not Applicable

ND: Not detected

SW-1 and SW-2: Surface Water samples

TRWS: Tinkham Realty Water Supply Well (McAllister Drive)

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.

Bold values indicate a detection above the reporting limit

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 7
Summary of 2016 Supplemental VOC Groundwater Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Sample Name Sample Date	EPA MCL/ Cleanup Level	NH Ambient GW Quality Standard	F F-20161025 10/25/2016	FW02 FW-02-20161025 10/25/2016	FW02 (Dup) FD-01-20161025 10/25/2016	FW02D FW-02D-20161028 10/28/2016	FW03D FW-03D-20161024 10/24/2016	FW04 FW-04-20161021 10/21/2016	FW05 FW-05-20161025 10/25/2016	FW06 FW-06-20161025 10/25/2016	FW08 FW-08-20161024 10/24/2016	FW08 (Dup) FW-08-20161024 10/24/2016
Volatile Organic Compounds (ug/L)												
1,1,1-Trichlorethane	200	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.3**	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	600	600	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	NA	600	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6,000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Choroethane	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform (Trichloromethane)	80	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**12**	<0.5	<0.5	<0.5
Cymene (p-Isopropyltoluene)	NA	260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	NA	120	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1,400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.55**	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Tert Butyl Ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran	NA	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	1,000	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichlorethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.77**	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.8**	<0.5	<0.5	<0.5
Trichlorofluoromethane (CFC-11)	NA	2,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	ND	ND	ND	ND	ND	ND	**17.42**	ND	ND	ND
Volatile Organic Compounds SIM (ug/L)												
1,4-Dioxane	3	0.32*	**0.44**	<0.2	<0.2	<0.2	**3.1**	**9.1**	**18**	**1.2**	<0.2	**0.29**

Notes:

HCCWS: Holy Cross Cemetery Water Supply Well (Gilcreast Road)

MCL: Maximum Contaminant Level

NA: Not Applicable

ND: Not detected

SW-1 and SW-2: Surface Water samples

TRWS: Tinkham Realty Water Supply Well (McAllister Drive)

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.

Bold values indicate a detection above the reporting limit

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 7
Summary of 2016 Supplemental VOC Groundwater Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Sample Name Sample Date	EPA MCL/ Cleanup Level	NH Ambient GW Quality Standard	FW08D FW-08D-20161024 10/24/2016	FW09 FW-09-20161025 10/25/2016	FW11 FW-11-20161026 10/26/2016	FW11D FW-11D-20161026 10/26/2016	FW17 FW-17-20161028 10/28/2016	FW20 FW-20-20161031 10/31/2016	FW21 FW-21-20161027 10/27/2016	FW21D FW-21D-40-20161027 10/27/2016	FW21D FW-21D-60-20161027 10/27/2016
Volatile Organic Compounds (ug/L)											
1,1,1-Trichlorethane	200	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NA	81	**0.59**	<0.5	<0.5	**14**	<0.5	**13**	**4.2**	**11**	**11**
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	600	600	<0.5	<0.5	**0.52**	**11**	<0.5	**5.7**	**1.2**	**9.6**	**7.8**
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	**7.2**	<0.5	**8.8**	<0.5	**0.54**	**0.56**
1,3-Dichlorobenzene	NA	600	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	75	<0.5	<0.5	<0.5	**1.1**	<0.5	**0.64**	<0.5	<0.5	<0.5
Acetone	NA	6,000	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	5	**1**	<0.5	<0.5	**0.75**	<0.5	**9**	<0.5	**2.1**	**2**
Chlorobenzene	100	100	<0.5	<0.5	<0.5	**0.76**	<0.5	**1.1**	<0.5	<0.5	<0.5
Choroethane	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	**0.66**	<0.5	<0.5	<0.5
Chloroform (Trichloromethane)	80	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	**51**	**0.78**	**8.8**	**12**	**18**	**10**
Cymene (p-Isopropyltoluene)	NA	260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	NA	120	<0.5	<0.5	<0.5	**2**	<0.5	**3.5**	<0.5	<0.5	<0.5
Ethyl Ether	NA	1,400	<0.5	<0.5	<0.5	**1.5**	<0.5	**4.2**	**0.66**	**1.6**	**1.6**
Ethylbenzene	700	700	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.5**	<0.5
Methyl Tert Butyl Ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	**0.67**	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran	NA	154	<10	<10	<10	<10	<10	<10	<10	**18**	**19**
Toluene	1,000	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichlorethene	100	100	<0.5	<0.5	<0.5	**1.5**	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	**35**	<0.5	**1.1**	<0.5	<0.5	<0.5
Trichlorofluoromethane (CFC-11)	NA	2,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<0.5	<0.5	<0.5	**1.6**	<0.5	**26**	<0.5	**4.4**	**1.5**
Total VOCs	NA	NA	**1.59**	ND	**0.52**	**129.28**	**0.78**	**82.5**	**18.06**	**67.74**	**53.46**
Volatile Organic Compounds SIM (ug/L)											
1,4-Dioxane	3	0.32*	**20**	<0.2	**6.9**	**380**	**0.23**	**130**	**2.3**	**7**	**5.5**

Notes:

HCCWS: Holy Cross Cemetery Water Supply Well (Gilcreast Road)

MCL: Maximum Contaminant Level

NA: Not Applicable

ND: Not detected

SW-1 and SW-2: Surface Water samples

TRWS: Tinkham Realty Water Supply Well (McAllister Drive)

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.

Bold values indicate a detection above the reporting limit

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 7
Summary of 2016 Supplemental VOC Groundwater Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Sample Name Sample Date	EPA MCL/ Cleanup Level	NH Ambient GW Quality Standard	FW21D FW-21D-78-20161027 10/27/2016	FW23 FW-23-20161024 10/24/2016	FW24 FW-24-20161027 10/27/2016	FW24D FW-24D-20161027 10/27/2016	FW25 FW-25-20161024 10/24/2016	FW25D FW-25D-20161024 10/24/2016	FW26D FW-26D-20161027 10/27/2016	FW27 FW-27-20161026 10/26/2016	FW28D FW-28D-104-20161028 10/28/2016
Volatile Organic Compounds (ug/L)											
1,1,1-Trichlorethane	200	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NA	81	**11**	<0.5	<0.5	**2.5**	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	600	600	**8.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	**0.66**	<0.5	<0.5	**1.1**	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	NA	600	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6,000	**12**	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	5	**2**	<0.5	<0.5	**7.6**	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Choroethane	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform (Trichloromethane)	80	70	<0.5	<0.5	**0.68**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	**6.6**	<0.5	<0.5	**1.3**	<0.5	<0.5	<0.5	<0.5	<0.5
Cymene (p-Isopropyltoluene)	NA	260	**0.86**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	NA	120	<0.5	<0.5	<0.5	**1.3**	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1,400	**1.7**	<0.5	<0.5	**1**	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<0.5	<0.5	<0.5	**1.1**	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Tert Butyl Ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran	NA	154	**22**	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	1,000	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichlorethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane (CFC-11)	NA	2,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	**1**	<0.5	<0.5	**1.4**	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	**66.32**	ND	**0.68**	**17.3**	ND	ND	ND	ND	ND
Volatile Organic Compounds SIM (ug/L)											
1,4-Dioxane	3	0.32*	**5.4**	**2.1**	**15**	**83**	<0.2	<0.2	<0.2	**5.1**	**0.22**

Notes:

HCCWS: Holy Cross Cemetery Water Supply Well (Gilcreast Road)

MCL: Maximum Contaminant Level

NA: Not Applicable

ND: Not detected

SW-1 and SW-2: Surface Water samples

TRWS: Tinkham Realty Water Supply Well (McAllister Drive)

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.

Bold values indicate a detection above the reporting limit

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 7
Summary of 2016 Supplemental VOC Groundwater Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Sample Name Sample Date	EPA MCL/ Cleanup Level	NH Ambient GW Quality Standard	FW28D FW-28D-174-20161028 10/28/2016	FW28D FW2-28D-80-20161028 10/28/2016	HCCWS HCC-WS-20161025 10/25/2016	LGAW LGAW-20161028 10/28/2016	LGSW LGSW-20161025 10/25/2016	MP-L-1S MP-L-1S-20161028 10/28/2016	MP-L-2D MP-L-2D-20161028 10/28/2019	NAI-K2 NAI-K2-20161031 10/31/2016	NAI-M1 NAI-M1-20161031 10/31/2016
Volatile Organic Compounds (ug/L)											
1,1,1-Trichlorethane	200	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**70**	**1.3**
1,1,2-Trichlorethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**4.4**	<0.5
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	**7**	**1.9**	<0.5	<0.5	**41**	**2.5**
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**5.8**	<0.5
1,2,4-Trichlorobenzene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.98**	<0.5
1,2-Dichlorobenzene	600	600	<0.5	<0.5	<0.5	**6**	<0.5	<0.5	**7**	**14**	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	**0.64**	**0.77**	<0.5	<0.5	**1.2**	<0.5
1,3-Dichlorobenzene	NA	600	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6,000	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	5	<0.5	<0.5	<0.5	**1.5**	**6.5**	<0.5	<0.5	**2.5**	<0.5
Chlorobenzene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**12**	<0.5	<0.5
Choroethane	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform (Trichloromethane)	80	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**6.8**	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	**0.7**	**0.91**	<0.5	<0.5	**500**	**7.2**
Cymene (p-Isopropyltoluene)	NA	260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	NA	120	<0.5	<0.5	<0.5	<0.5	**0.98**	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1,400	<0.5	<0.5	<0.5	**1.3**	**0.83**	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Tert Butyl Ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**66**	**2.5**
Tetrahydrofuran	NA	154	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	1,000	1,000	**0.57**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichlorethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**5**	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**190**	**6.9**
Trichlorofluoromethane (CFC-11)	NA	2,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.8**	<0.5
Vinyl Chloride	2	2	<0.5	<0.5	<0.5	**1.5**	**1.2**	<0.5	<0.5	**12**	**0.54**
Total VOCs	NA	NA	**0.57**	ND	ND	**18.64**	**13.09**	ND	**19**	**920.48**	**20.94**
Volatile Organic Compounds SIM (ug/L)											
1,4-Dioxane	3	0.32*	**0.35**	<0.2	<0.2	**7.4**	**56**	<0.2	<0.2	**1.5**	**0.67**

Notes:

HCCWS: Holy Cross Cemetery Water Supply Well (Gilcreast Road)

MCL: Maximum Contaminant Level

NA: Not Applicable

ND: Not detected

SW-1 and SW-2: Surface Water samples

TRWS: Tinkham Realty Water Supply Well (McAllister Drive)

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.

Bold values indicate a detection above the reporting limit

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 7
Summary of 2016 Supplemental VOC Groundwater Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Sample Name Sample Date	EPA MCL/ Cleanup Level	NH Ambient GW Quality Standard	OW-1 OW-1O20161031 10/31/2016	OW2D OW-2D-20161026 10/26/2016	OW2S OW-2S-20161026 10/26/2016	RD-D RD-D-20161020 10/20/2016	RD-S RD-S-20161020 10/20/2016	SW-1 SW-1-20161026 10/26/2016	SW-2 SW-2-20161026 10/26/2016	TRWS TR-WS-20161025 10/25/2016
Volatile Organic Compounds (ug/L)										
1,1,1-Trichlorethane	200	200	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichlorethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NA	81	<0.5	**11**	**1.7**	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	600	600	<0.5	**11**	**0.77**	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	**8.4**	**1.4**	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	NA	600	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	75	75	<0.5	**1.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6,000	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	5	5	<0.5	**0.87**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	100	100	<0.5	**1.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Choroethane	NA	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform (Trichloromethane)	80	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	**44**	**6.5**	<0.5	<0.5	<0.5	<0.5	<0.5
Cymene (p-Isopropyltoluene)	NA	260	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diisopropyl ether (DIPE)	NA	120	<0.5	**1.7**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1,400	<0.5	**1.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Tert Butyl Ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	**0.74**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran	NA	154	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	1,000	1,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichlorethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	**2.9**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane (CFC-11)	NA	2,000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<0.5	**3.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	ND	**88.91**	**10.37**	ND	ND	ND	ND	ND
Volatile Organic Compounds SIM (ug/L)										
1,4-Dioxane	3	0.32*	**2.2**	**140**	**24**	<0.2	**1.1**	**0.21**	<0.2	<0.2

Notes:

HCCWS: Holy Cross Cemetery Water Supply Well (Gilcreast Road)

MCL: Maximum Contaminant Level

NA: Not Applicable

ND: Not detected

SW-1 and SW-2: Surface Water samples

TRWS: Tinkham Realty Water Supply Well (McAllister Drive)

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes see the laboratory data sheets.

Bold values indicate a detection above the reporting limit

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		D1	D2	D3	DVE-3	DVE-7	ERT01	ERT04
Sample Name	EPA SSSL	NHDES AGQS	D1-20180731	D2-20180801	D3-20180801	DVE-3-20180802	DVE-7-20180803	ERT01-20180618	ERT04-20180611
Sample Date			07/31/2018	08/01/2018	08/01/2018	08/02/2018	08/03/2018	06/18/2018	06/11/2018
Lab Sample ID			L1829692-11	L1830390-01	L1830390-02	L1830390-06	L1830390-10	L1823230-05	L1822571-01
PFAS									
Perfluorobutane Sulfonate (PFBS)	40,000	NA	**3.5**	<1.78	<1.78	**3.39**	**3.96**	<1.78	**6.65**
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.78	<1.78	<1.78	**3.98**	**8.2**	**3.11**	**7.34**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.78	<1.78	<1.78	**6.5**	**21.4**	**2.5**	**6.69**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	**2.4**	<1.78	<1.78	**18**	**97**	<1.78	**5.89**
Perfluorohexanoic acid (PFHxA)	NA	NA	**2.16**	<1.78	<1.78	**6.68**	**23.5**	**3.7**	**15.7**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.78	<1.78	**12.5**	**15.8**	<1.78	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	**2.07**	<1.78	<1.78	**5.9**	**13.3**	**4.19**	<1.78
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.78	<1.78	<1.78	**156**	**169**	**3.51**	**4.72**
Perfluorooctanoic Acid (PFOA, C8)	40	70	**4.95**	<1.78	**2.24**	**34.9**	**114**	**10.7**	**28.1**
Total PFOS & PFOA	NA	70	**4.95**	ND	**2.24**	**190.9**	**283**	**14.21**	**32.82**

Notes:

AGQS: Ambient Groundwater Quality Standards established by New Hampshire Contaminated Site Management Rules (Env-Or 600).

Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter.

NA: Not Applicable

<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

Bolded values indicate detected concentrations.

Shaded values indicate an exceedance of NHDES AGQS criteria.

Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		ERT06	FW02D	FW05	FW11D-55	
Sample Name	EPA SSSL	NHDES AGQS	ERT06-20180614	FW02D-20180619	FW05-20180618	FW11D-55-20180615	FW11D-55-20180731
Sample Date			06/14/2018	06/19/2018	06/18/2018	06/15/2018	07/31/2018
Lab Sample ID			L1822571-14	L1823230-07	L1823230-06	L1822788-01	L1829692-04
PFAS							
Perfluorobutane Sulfonate (PFBS)	40,000	NA	**8.47**	**5.52**	<1.78	**2.21**	<1.78
Perfluorobutanoic Acid (PFBA)	NA	NA	**2.31**	**5.66**	**2.62**	**6.88**	**3.98**
Perfluoroheptanoic acid (PFHpA)	NA	NA	**2.67**	<1.78	**2.87**	**6.46**	**7.1**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	**3.35**	**3.05**	**2.04**	**29.8**	**26.2**
Perfluorohexanoic acid (PFHxA)	NA	NA	**6.2**	<1.78	**2.67**	**9.08**	**7.76**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	**4.56**	<1.78	**2.85**	**17.4**	<1.78
Perfluorooctanesulfonic acid (PFOS)	40	70	**7.68**	**3.87**	**1.84**	**9.78**	**7.61**
Perfluorooctanoic Acid (PFOA, C8)	40	70	**20.5**	**5.56**	**10.1**	**41.5**	**39.4**
Total PFOS & PFOA	NA	70	**28.18**	**9.43**	**11.94**	**51.28**	**47.01**

Notes:

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ng/L: nanograms per liter

Bolded values indicate detected concentrations.

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		FW11D-70			FW11D-90		FW20
Sample Name	EPA SSSL	NHDES AGQS	FW11D-70-20180615	DUPLICATE-20180615	FW11D-70-20180731	FW11D-90-20180615	FW11D-90-20180731	FW20-20180615
Sample Date			06/15/2018	06/15/2018	07/31/2018	06/15/2018	07/31/2018	06/15/2018
Lab Sample ID			L1822788-02	L1822788-03	L1829692-05	L1822788-04	L1829692-06	L1822788-07
PFAS								
Perfluorobutane Sulfonate (PFBS)	40,000	NA	**3.11**	**3.15**	**3.13**	**2.31**	**2.87**	<1.78
Perfluorobutanoic Acid (PFBA)	NA	NA	**11**	**12.6**	**13**	**10.3**	**14.3**	**3.45**
Perfluoroheptanoic acid (PFHpA)	NA	NA	**8.02**	**7.19**	**9.11**	**5.76**	**9.5**	**3.49**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	**33.8**	**35.6**	**38.9**	**26.9**	**36**	**14.3**
Perfluorohexanoic acid (PFHxA)	NA	NA	**13.3**	**13.3**	**15.3**	**9.58**	**14.9**	**4.77**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.78	<1.78	<1.72	<1.85	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	**24.4**	**25.2**	<1.78	**19.4**	<1.85	**7.68**
Perfluorooctanesulfonic acid (PFOS)	40	70	**8.46**	**6.22**	**8.3**	**7.53**	**10.3**	**8.94**
Perfluorooctanoic Acid (PFOA, C8)	40	70	**53.9**	**52.9**	**68.8**	**42.7**	**67.1**	**24.5**
Total PFOS & PFOA	NA	70	**62.36**	**59.12**	**77.1**	**50.23**	**77.4**	**33.44**

Notes:

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Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter.

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<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		FW21D-40		FW21D-60	FW21D-78	FW25	FW25D	
Sample Name	EPA SSSL	NHDES AGQS	FW21D-40-20180618	DUPLICATE-20180618	FW21D-60-20180618	FW21D-78-20180618	FW25-20180801	FW25D-20180612	FW25D-20180801
Sample Date			06/18/2018	06/18/2018	06/18/2018	06/18/2018	08/01/2018	06/12/2018	08/01/2018
Lab Sample ID			L1823230-01	L1823230-02	L1823230-03	L1823230-04	L1829692-13	L1822571-02	L1829692-12
PFAS									
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.78	<1.78	<1.78	**2.32**	<1.78	<1.78	<1.78
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	**2.42**	**2.22**	**2.18**	**2.2**	<1.78	<1.78	<1.78
Perfluorooctanesulfonic acid (PFOS)	40	70	**2.24**	<1.78	**2.84**	**3.07**	<1.78	<1.78	<1.78
Perfluorooctanoic Acid (PFOA, C8)	40	70	**14**	**13.4**	**14.7**	**11.9**	<1.78	<1.78	<1.78
Total PFOS & PFOA	NA	70	**16.24**	**13.4**	**17.54**	**14.97**	ND	ND	ND

Notes:

AGQS: Ambient Groundwater Quality Standards established by New Hampshire Contaminated Site Management Rules (Env-Or 600).

Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter.

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<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

Bolded values indicate detected concentrations.

Shaded values indicate an exceedance of NHDES AGQS criteria.

Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		FW28D-80		FW28D-104		FW28D-174		LGSW
Sample Name	EPA SSSL	NHDES AGQS	FW28D-80-20180613	FW28D-80-20180730	FW28D-104-20180613	FW28D-104-20180730	FW28D-174-20180613	FW28D-174-20180730	LGSW-20180613
Sample Date			06/13/2018	07/30/2018	06/13/2018	07/30/2018	06/13/2018	07/30/2018	06/13/2018
Lab Sample ID			L1822571-03	L1829692-01	L1822571-04	L1829692-02	L1822571-05	L1829692-03	L1822571-06
PFAS									
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	<1.78
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	**2.22**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	<1.78
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	**2.57**
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	**3.67**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	<1.78
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	<1.78
Perfluorooctanoic Acid (PFOA, C8)	40	70	<1.78	<1.78	<1.78	<1.78	<1.72	<1.78	**6.4**
Total PFOS & PFOA	NA	70	ND	ND	ND	ND	ND	ND	**6.4**

Notes:

AGQS: Ambient Groundwater Quality Standards established by New Hampshire Contaminated Site Management Rules (Env-Or 600).

Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter.

NA: Not Applicable

<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

Bolded values indicate detected concentrations.

Shaded values indicate an exceedance of NHDES AGQS criteria.

Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		NAI-K2		NAI-M1	OW2D		RD-D	
Sample Name	EPA SSSL	NHDES AGQS	NAI-K2-20180613	NAI-K2-20180803	NAI-MI-20180802	OW2D-20180615	OW2D-20180731	RD-D-20180614	RD-D-20180802
Sample Date			06/13/2018	08/03/2018	08/02/2018	06/15/2018	07/31/2018	06/14/2018	08/02/2018
Lab Sample ID			L1822571-07	L1830390-11	L1830390-07	L1822788-05	L1829692-07	L1822571-12	L1830390-05
PFAS									
Perfluorobutane Sulfonate (PFBS)	40,000	NA	**2.66**	**3.23**	**5.74**	**3.05**	**3.2**	<1.72	<1.82
Perfluorobutanoic Acid (PFBA)	NA	NA	**5.82**	**7.29**	**8.27**	**9.78**	**3.79**	<1.72	<1.82
Perfluoroheptanoic acid (PFHpA)	NA	NA	**24.2**	**30.4**	**16.6**	**12.2**	**12.1**	<1.72	<1.82
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	**49**	**54.1**	**29.4**	**83.5**	**77.3**	<1.72	<1.82
Perfluorohexanoic acid (PFHxA)	NA	NA	**18.8**	**23.5**	**14.1**	**10.5**	**9.63**	<1.72	<1.82
Perfluorononanoic Acid (PFNA)	NA	NA	**7.41**	**9.34**	**5.91**	**7.31**	**7.02**	<1.72	<1.82
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.78	**13**	**12.2**	**15.3**	**5.56**	<1.72	<1.82
Perfluorooctanesulfonic acid (PFOS)	40	70	**592**	**560**	**428**	**65**	**58.9**	<1.72	<1.82
Perfluorooctanoic Acid (PFOA, C8)	40	70	**160**	**199**	**114**	**73.4**	**77.4**	<1.72	<1.82
Total PFOS & PFOA	NA	70	**752**	**759**	**542**	**138.4**	**136.3**	ND	ND

Notes:

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ng/L: nanograms per liter

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		RD-S		5 Boston Ave			
Sample Name	EPA SSSL	NHDES AGQS	RD-S-20180614	RD-S-20180802	5BA	5BA	5BA-DUP	5BA
Sample Date			06/14/2018	08/02/2018	9/11/2018	12/6/2018	12/6/2018	3/20/2019
Lab Sample ID			L1822571-11	L1830390-04	L1836394-01	L1850027-01	L1850027-02	L1911535-01
PFAS								
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.72	<1.84	**7.55**	**7.07**	**7.19**	**6.35**
Perfluorobutanoic Acid (PFBA)	NA	NA	**12.6**	**14.8**	**2.48**	<1.84	<1.84	<1.83
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.72	<1.84	<1.74	<1.84	<1.84	<1.83
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.72	<1.84	<1.74	<1.84	<1.84	**1.93**
Perfluorohexanoic acid (PFHxA)	NA	NA	**9.4**	**10.8**	**2.42**	**1.84**	<1.84	**1.96**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.72	<1.84	<1.74	<1.84	<1.84	<1.83
Perfluoropentanoic Acid (PFPeA)	NA	NA	**10.7**	**12.4**	**3.11**	**2.64**	**2.63**	**2.27**
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.72	<1.84	**6.94**	**3.29**	**3.59**	**6.12**
Perfluorooctanoic Acid (PFOA, C8)	40	70	<1.72	**2.12**	**6.36**	**5.63**	**5.89**	**5.85**
Total PFOS & PFOA	NA	70	ND	**2.12**	**13.3**	**8.92**	**9.48**	**11.97**

Notes:

AGQS: Ambient Groundwater Quality Standards established by New Hampshire Contaminated Site Management Rules (Env-Or 600).

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ng/L: nanograms per liter

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Shaded values indicate an exceedance of NHDES AGQS criteria.

Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		6 Boston Ave				8 Boston Ave		
Sample Name	EPA SSSL	NHDES AGQS	6BA	6BA-DUP	6BA	6BA	8BA	8BA	8BA
Sample Date			9/12/2018	9/12/2018	12/10/2018	3/21/2019	9/11/2018	12/13/2018	3/21/2019
Lab Sample ID			L1836388-01	L1836388-03	L1850673-01	L1911536-01	L1836392-01	L1851642-01	L1911537-01
PFAS									
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.82	<1.75	<1.83	<1.76	**3.08**	**3.37**	**2.11**
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.82	<1.75	<1.83	<1.76	**5.16**	**2.33**	**1.95**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.82	<1.75	<1.83	<1.76	**3.90**	**3.33**	**3.06**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.82	<1.75	<1.83	<1.76	<1.84	<1.82	<1.79
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.82	<1.75	<1.83	<1.76	**9.42**	**5.69**	**5.88**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.82	<1.75	<1.83	<1.76	<1.84	<1.82	<1.79
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.82	<1.75	<1.83	<1.76	**11.2**	**4.78**	**4.92**
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.82	<1.75	<1.83	<1.76	<1.84	<1.82	<1.79
Perfluorooctanoic Acid (PFOA, C8)	40	70	<1.82	<1.75	<1.83	<1.76	**5.86**	**5.35**	**5.66**
Total PFOS & PFOA	NA	70	ND	ND	ND	ND	**5.86**	**5.35**	**5.66**

Notes:

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<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		12 Boston Ave	8 Charleston Ave					18CA
Sample Name	EPA SSSL	NHDES AGQS	12 BOSTON-20180614	8CA	8CA	8CA	8CA	8CA-DUP	18 CHARLESTON-20180614
Sample Date			06/14/2018	9/11/2018	12/13/2018	1/9/2019	3/20/2019	3/20/2019	06/14/2018
Lab Sample ID			L1822571-09	L1836391-01	L1851643-01	L1901176-01	L1911533-01	L1911533-02	L1822571-08
PFAS									
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.78	**5.49**	**7.63**	**5.49**	**5.03**	**4.93**	**2.48**
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.78	**7.92**	**4.2**	**3.07**	**2.26**	**2.21**	**3.34**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.78	**8.15**	**11.4**	**8.68**	**6.25**	**6.16**	<1.78
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.78	**3.02**	**3.02**	**3.02**	**3.37**	**3.44**	**2.88**
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.78	**10.9**	**15.3**	**11.9**	**7.91**	**7.78**	<1.78
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.84	**2.94**	**2.34**	<1.82	<1.80	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.78	**15.7**	**19.5**	**14.7**	**9.81**	**9.73**	<1.78
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.78	**37.3**	**44.2**	**33.7**	**28**	**25.8**	**5.24**
Perfluorooctanoic Acid (PFOA, C8)	40	70	**2.25**	**19.7**	**29.9**	**21.7**	**15.6**	**15.5**	**8.19**
Total PFOS & PFOA	NA	70	**2.25**	**57**	**74.1**	**55.4**	**43.6**	**41.3**	**13.43**

Notes:

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<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		22 Charleston Ave			2 MERCURY	TRSW	TGW
Sample Name	EPA SSSL	NHDES AGQS	22CA	22CA	22CA	2 MERCURY-20180803	TINKHAM REALTY-20180614	TGW-20180803
Sample Date			9/12/2018	12/13/2018	3/20/2019	08/03/2018	06/14/2018	08/03/2018
Lab Sample ID			L1836389-01	L1851353-01	L1911534-01	L1830390-13	L1822571-10	L1830390-12
PFAS								
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.80	<1.74	<1.83	**5.46**	<1.85	<1.77
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.80	<1.74	<1.83	<1.77	**2.19**	<1.77
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.80	<1.74	<1.83	<1.77	<1.85	<1.77
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.80	<1.74	<1.83	<1.77	<1.85	<1.77
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.80	<1.74	<1.83	<1.77	**2.07**	<1.77
Perfluorononanoic Acid (PFNA)	NA	NA	<1.80	<1.74	<1.83	<1.77	<1.85	<1.77
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.80	<1.74	<1.83	<1.77	<1.85	<1.77
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.80	<1.74	<1.83	<1.77	<1.85	<1.77
Perfluorooctanoic Acid (PFOA, C8)	40	70	<1.80	<1.74	<1.83	**1.84**	**13.6**	<1.77
Total PFOS & PFOA	NA	70	ND	ND	ND	**1.84**	**13.6**	ND

Notes:

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Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter.

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ng/L: nanograms per liter

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		Field Blank - 8BA	Field Blank - 8CA	Field Blank - 8CA	Equipment Blank - 5BA	Equipment Blank - 8CA
Sample Name	EPA SSSL	NHDES AGQS	Field Blank	Field Blank	Field Blank	Equipment Blank	Equipment Blank
Sample Date			9/11/2018	12/13/2018	3/20/2019	9/11/2018	12/13/2018
Lab Sample ID			L1836392-02	L1851643-03	L1911533-03	L1836394-02	L1851643-04
PFAS							
Perfluorobutane Sulfonate (PFBS)	40,000	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluorononanoic Acid (PFNA)	NA	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluorooctanesulfonic acid (PFOS)	40	70	<1.80	<1.93	<1.95	<1.75	<1.82
Perfluorooctanoic Acid (PFOA, C8)	40	70	<1.80	<1.93	<1.95	<1.75	<1.82
Total PFOS & PFOA	NA	70	ND	ND	ND	ND	ND

Notes:

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<1.78: Not detected at the laboratory detection limit

ng/L: nanograms per liter

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Table 8
Summary of PFAS Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location Name	Action Level		STREAM 1A/1B	STREAM 1D 20+00		SW-2	
Sample Name	EPA SSSL	NHDES AGQS	STREAM 1A/1B-20180614	STREAM 1D 20+100-20180731	DUPLICATE-20180731	SW2-20180615	SW2-20180731
Sample Date			06/14/2018	07/31/2018	07/31/2018	06/15/2018	07/31/2018
Lab Sample ID			L1822571-16	L1829692-09	L1829692-10	L1822788-06	L1829692-08
PFAS							
Perfluorobutane Sulfonate (PFBS)	40,000	NA	**6.79**	**5.76**	**6.04**	**6.44**	**6.28**
Perfluorobutanoic Acid (PFBA)	NA	NA	**6.21**	**8.06**	**8.52**	**7.55**	**9.32**
Perfluoroheptanoic acid (PFHpA)	NA	NA	**6.14**	**6.2**	**5.88**	**6.71**	**5.74**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	**4.58**	**3.12**	**2.85**	**3.03**	**3.05**
Perfluorohexanoic acid (PFHxA)	NA	NA	**14**	**12.2**	**12**	**12.4**	**12.4**
Perfluorononanoic Acid (PFNA)	NA	NA	**1.8**	**2.18**	<1.78	<1.78	**2.21**
Perfluoropentanoic Acid (PFPeA)	NA	NA	**12.7**	**13.7**	**14.2**	**14.7**	**14.8**
Perfluorooctanesulfonic acid (PFOS)	40	70	**7.97**	**10.1**	**9.66**	**17.4**	**12.4**
Perfluorooctanoic Acid (PFOA, C8)	40	70	**21**	**20.7**	**21.7**	**24.2**	**22.4**
Total PFOS & PFOA	NA	70	**28.97**	**30.8**	**31.36**	**41.6**	**34.8**

Notes:

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ng/L: nanograms per liter

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Table 9
Summary of 2016 Supplemental Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location	EPA MCL/	NH AGQS	5 Boston Ave							6 Boston Ave					
Sample Date	Site Cleanup		2/28/2015	9/16/2015	12/28/2015	3/21/2016	6/9/2016	9/15/2016	9/15/2016 DUP	2/20/2015	9/25/2015	12/21/2015	3/24/2016	6/16/2016	9/15/2016
Volatile Organic Compounds (ug/L)															
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds SIM (ug/L)															
1,4-Dioxane	3	0.32*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Inorganic compounds (mg/L)															
Arsenic, Total	0.01	0.01	-	**0.00207**	-	-	-	-	-	-	**0.00415**	-	-	-	-
Copper, Total	1.3	1.3	-	**0.02488**	-	-	-	-	-	-	**0.00824**	-	-	-	-
Hardness, Total	NA	NA	-	**140**	-	-	-	-	-	-	**130**	-	-	-	-
Iron, Total	NA	NA	-	<0.05	-	-	-	-	-	-	**0.22**	-	-	-	-
Lead, Total	0.015	0.015	-	**0.0047**	-	-	-	-	-	-	**0.0053**	-	-	-	-
Manganese, Total	NA	0.84	-	<0.01	-	-	-	-	-	-	**0.386**	-	-	-	-
Nitrate (as N), Total	10	10	-	**1.3**	-	-	-	-	-	-	<0.1	-	-	-	-
Sodium, Total	NA	NA	-	**56**	-	-	-	-	-	-	**12**	-	-	-	-
Other															
Escherichia coli, Total (colf/100mL)	NA	NA	-	<0	-	-	-	-	-	-	<0	-	-	-	-
Total Coliform Bacteria (colf/100mL)	NA	NA	-	<0	-	-	-	-	-	-	**1 Pos**	-	-	-	-
Chloride, Total (mg/L)	NA	NA	-	**126**	-	-	-	-	-	-	**61.8**	-	-	-	-
Fluoride, Total (mg/L)	NA	4	-	**0.067**	-	-	-	-	-	-	**0.313**	-	-	-	-
pH (lab), Total (pH units)	NA	NA	-	**6.6**	-	-	-	-	-	-	**6.7**	-	-	-	-

Notes:

-: Not Analyzed

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B - Compound was found in the blank and sample

F1 - MS/MSD out of control limits

MCL - Maximum Contaminant Level

POS - Positive for the presence

mg/L: milligrams per liter

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes, see the laboratory data sheets.

Bold values indicate a detection above the laboratory reporting limit.

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH Ambient Groundwater Quality Standard (Env-Or 600).

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 9
Summary of 2016 Supplemental Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location	EPA MCL/	NH AGQS	8 Boston Ave						10 Boston Ave						
Sample Date	Site Cleanup		2/28/2015	9/18/2015	12/21/2015	3/21/2016	6/17/2016	9/15/2016	11/24/2014	9/16/2015	9/16/2015 DUP	12/28/2015	3/21/2016	6/9/2016	6/9/2016
Volatile Organic Compounds (ug/L)															
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.0**	**1.2**	**1.3**	**0.94**	**1.2**	**0.94**	**0.88**
trans-1,2-Dichloroethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.0**	**0.55**	**0.51**	<0.5	**0.62**	**0.5**	<0.5
Vinyl chloride	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	ND	ND	ND	ND	ND	ND	**3.0**	**1.75**	**1.81**	**0.94**	**1.82**	**1.44**	**0.88**
Volatile Organic Compounds SIM (ug/L)															
1,4-Dioxane	3	0.32*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Inorganic compounds (mg/L)															
Arsenic, Total	0.01	0.01	-	<0.001	-	-	-	-	-	**0.00574**	**0.00629**	-	-	-	-
Copper, Total	1.3	1.3	-	**0.05829**	-	-	-	-	-	**0.14**	**0.1583**	-	-	-	-
Hardness, Total	NA	NA	-	**42**	-	-	-	-	-	**47**	**48**	-	-	-	-
Iron, Total	NA	NA	-	**1.3**	-	-	-	-	-	<0.05	<0.05	-	-	-	-
Lead, Total	0.015	0.015	-	**0.00105**	-	-	-	-	-	**0.00207**	**0.00248**	-	-	-	-
Manganese, Total	NA	0.84	-	**0.011**	-	-	-	-	-	**0.01**	<0.01	-	-	-	-
Nitrate (as N), Total	10	10	-	**2**	-	-	-	-	-	**2.6**	**2.6**	-	-	-	-
Sodium, Total	NA	NA	-	**6.9**	-	-	-	-	-	**6.7**	**6.9**	-	-	-	-
Other															
Escherichia coli, Total (colf/100mL)	NA	NA	-	**1 Pos**	-	-	-	-	-	<0	<0	-	-	-	-
Total Coliform Bacteria (colf/100mL)	NA	NA	-	**1 Pos**	-	-	-	-	-	<0	<0	-	-	-	-
Chloride, Total (mg/L)	NA	NA	-	**9.93**	-	-	-	-	-	**8.73**	**8.73**	-	-	-	-
Fluoride, Total (mg/L)	NA	4	-	**0.209**	-	-	-	-	-	**0.066**	**0.07**	-	-	-	-
pH (lab), Total (pH units)	NA	NA	-	**6.3**	-	-	-	-	-	**6.8**	**7.0**	-	-	-	-

Notes:

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Analytes detected in at least one sample are reported herein. For a complete list of Analytes, see the laboratory data sheets.

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* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 9
Summary of 2016 Supplemental Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location	EPA MCL/	NH AGQS	12 Boston Ave				8 Charleston Ave						14 Charleston Ave	
Sample Date	Site Cleanup		2/11/2015	9/16/2015	12/11/2015	12/11/2015 DUP	11/25/2014	10/26/2015	12/21/2015	3/21/2016	6/16/2016	9/15/2016	12/29/2014	9/15/2015
Volatile Organic Compounds (ug/L)														
1,1-Dichloroethane	NA	81	**5.3**	**7**	**7.6**	**7.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.5**	**1.9**
1,1-Dichloroethene	7	7	**0.5**	**0.78**	**0.81**	**0.87**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	**8.1**	**11**	**13**	**13**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.1**	**1.8**
Ethyl Ether	NA	1400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.53**
Tetrachloroethene	5	5	**1.9**	**2.8**	**2.7**	**2.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	100	**7.5**	**10**	**11**	**11**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	**20**	**23**	**24**	**24**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**2.4**	**1.8**
Total VOCs	NA	NA	**43.3**	**54.58**	**59.11**	**59.47**	ND	ND	ND	ND	ND	ND	**7**	**6.03**
Volatile Organic Compounds SIM (ug/L)														
1,4-Dioxane	3	0.32*	**0.33**	-	**0.3**	**0.33**	-	<0.2	<0.2	<0.2	<0.2	<0.2	**16**	**12**
Inorganic compounds (mg/L)														
Arsenic, Total	0.01	0.01	-	**0.00649**	-	-	-	<0.001	-	-	-	-	-	**0.00229**
Copper, Total	1.3	1.3	-	**0.0128**	-	-	-	**0.06407**	-	-	-	-	-	**0.00345**
Hardness, Total	NA	NA	-	<0.66	-	-	-	**180**	-	-	-	-	-	**290**
Iron, Total	NA	NA	-	<0.05	-	-	-	**0.26**	-	-	-	-	-	**0.18**
Lead, Total	0.015	0.015	-	**0.00929**	-	-	-	**0.133**	-	-	-	-	-	**0.00385**
Manganese, Total	NA	0.84	-	<0.01	-	-	-	<0.01	-	-	-	-	-	**0.156**
Nitrate (as N), Total	10	10	-	<0.1	-	-	-	**0.38**	-	-	-	-	-	<0.1
Sodium, Total	NA	NA	-	**65**	-	-	-	**150**	-	-	-	-	-	**37**
Other														
Escherichia coli, Total (colf/100mL)	NA	NA	-	<0	-	-	-	<0	-	-	-	-	-	<0
Total Coliform Bacteria (colf/100mL)	NA	NA	-	<0	-	-	-	<0	-	-	-	-	-	**1 Pos**
Chloride, Total (mg/L)	NA	NA	-	**50**	-	-	-	**324**	-	-	-	-	-	**197**
Fluoride, Total (mg/L)	NA	4	-	**0.513**	-	-	-	<0.05	-	-	-	-	-	**0.659**
pH (lab), Total (pH units)	NA	NA	-	**7.5**	-	-	-	**6.3**	-	-	-	-	-	**6.8**

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Table 9
Summary of 2016 Supplemental Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location	EPA MCL/	NH AGQS	18 Charleston Ave							20 Charleston Ave		
Sample Date	Site Cleanup		1/15/2015	9/15/2015	12/28/2015	3/21/2016	3/21/2016 DUP	7/20/2016	9/15/2016	2/9/2015	9/15/2015	12/30/2015
Volatile Organic Compounds (ug/L)												
1,1-Dichloroethane	NA	81	**1.3**	**1**	**1.6**	**0.61**	**0.66**	**1.4**	**1.8**	<0.5	**1.6**	**0.8**
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.7**	<0.5	<0.5
Acetone	NA	6000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon disulfide	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.1**	<0.5
cis-1,2-Dichloroethene	70	70	**1.8**	**1.6**	**2.7**	**0.82**	**0.88**	**2.3**	**3**	<0.5	<0.5	<0.5
Ethyl Ether	NA	1400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	**3.1**	**2.6**	**4.3**	**1.43**	**1.54**	**3.7**	**4.8**	**0.7**	**2.7**	**0.8**
Volatile Organic Compounds SIM (ug/L)												
1,4-Dioxane	3	0.32*	**2.82**	**2.8**	**4.3 B**	**3 F1**	**2.8**	**4.2**	**7.1**	**6.22**	**9.8**	**6.8 B**
Inorganic compounds (mg/L)												
Arsenic, Total	0.01	0.01	-	**0.00184**	-	-	-	-	-	**-**	**0.00162**	**-**
Copper, Total	1.3	1.3	-	**0.0226**	-	-	-	-	-	**-**	**0.00233**	**-**
Hardness, Total	NA	NA	-	**120**	-	-	-	-	-	**-**	**230**	**-**
Iron, Total	NA	NA	-	<0.05	-	-	-	-	-	**-**	<0.05	**-**
Lead, Total	0.015	0.015	-	**0.00237**	-	-	-	-	-	**-**	<0.001	**-**
Manganese, Total	NA	0.84	-	**0.047**	-	-	-	-	-	**-**	**0.017**	**-**
Nitrate (as N), Total	10	10	-	**4.2**	-	-	-	-	-	**-**	**0.44**	**-**
Sodium, Total	NA	NA	-	**32**	-	-	-	-	-	**-**	**19**	**-**
Other												
Escherichia coli, Total (colf/100mL)	NA	NA	-	**<0**	-	-	-	-	-	**-**	<0	**-**
Total Coliform Bacteria (colf/100mL)	NA	NA	-	**1 Pos**	-	-	-	-	-	**-**	**1 Pos**	**-**
Chloride, Total (mg/L)	NA	NA	-	**94.1**	-	-	-	-	-	**-**	**130**	**-**
Fluoride, Total (mg/L)	NA	4	-	**0.367**	-	-	-	-	-	**-**	**0.442**	**-**
pH (lab), Total (pH units)	NA	NA	-	**6.8**	-	-	-	-	-	**-**	**7.3**	**-**

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MCL - Maximum Contaminant Level

POS - Positive for the presence

mg/L: milligrams per liter

ug/L: micrograms per liter

Analytes detected in at least one sample are reported herein. For a complete list of Analytes, see the laboratory data sheets.

Bold values indicate a detection above the laboratory reporting limit.

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* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 9
Summary of 2016 Supplemental Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Location	EPA MCL/	NH AGQS	22 Charleston Ave						11 AA	CEM
Sample Date	Site Cleanup		10/30/2014	9/15/2015	12/28/2015	3/24/2016	6/16/2016	9/15/2016	10/26/2015	10/26/2015
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	7	7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acetone	NA	6000	<10	**220**	<10	<10	<10	<10	<10	<10
Carbon disulfide	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Ether	NA	1400	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOCs	NA	NA	ND	**220**	ND	ND	ND	ND	ND	ND
Volatile Organic Compounds SIM (ug/L)										
1,4-Dioxane	3	0.32*	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Inorganic compounds (mg/L)										
Arsenic, Total	0.01	0.01	-	<0.001	-	-	-	-	<0.005	**0.0014**
Copper, Total	1.3	1.3	-	**0.0181**	-	-	-	-	**0.02146**	**0.01869**
Hardness, Total	NA	NA	-	**70**	-	-	-	-	-	-
Iron, Total	NA	NA	-	<0.05	-	-	-	-	**0.15**	**7.9**
Lead, Total	0.015	0.015	-	**0.00608**	-	-	-	-	**0.00682**	**0.00169**
Manganese, Total	NA	0.84	-	**0.023**	-	-	-	-	<0.01	**2.22**
Nitrate (as N), Total	10	10	-	**0.62**	-	-	-	-	**0.43**	<0.1
Sodium, Total	NA	NA	-	**4.7**	-	-	-	-	**210**	**9.8**
Other										
Escherichia coli, Total (colf/100mL)	NA	NA	-	<0	-	-	-	-	<0	<0
Total Coliform Bacteria (colf/100mL)	NA	NA	-	<0	-	-	-	-	<0	<0
Chloride, Total (mg/L)	NA	NA	-	**9.07**	-	-	-	-	**430**	**55.5**
Fluoride, Total (mg/L)	NA	4	-	**0.089**	-	-	-	-	**0.056**	**0.209**
pH (lab), Total (pH units)	NA	NA	-	**7.1**	-	-	-	-	**6.5**	**6.7**

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Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location Well Depth Treatment System Sample Date	**EPA MCL/ Site Cleanup Level**	**NHDES AGQS**	2 Gail Unknown UV + Softener 12/4/2018	25 Gilcreast Unknown None 12/4/2018	27 Gilcreast Unknown Softener 12/10/2018	29 Gilcreast Unknown Filter & Softener 12/6/2018	3 Ross ~150' Treatment 12/3/2018	4 Ross ~250' Salt Water Softener 12/6/2018	5 Ross ~250' Softener & Neutralizer 12/10/2018	6 Ross Unknown Neutralizer + Radon Treatment 12/4/2018	7 Ross Unknown Radon System, 2 Filters, Lime Tank 12/5/2018	8 Ross Unknown Radon System + Softener 12/14/2018
Volatile Organic Compounds (ug/L)												
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	NA	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl tert butyl ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	NA	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	NA	1000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	NA	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	NA	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	NA	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**										
1,4-Dioxane	3	0.32*	<0.156	<0.142	<0.147	<0.142	<0.142	<0.147	<0.144	<0.144	<0.147	<0.153
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**										
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.78	**3.11**	<1.85	<1.74	**1.88**	**5.55**	<1.86	**2.59**	<1.84	<1.78
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.78	**4.54**	<1.85	<1.74	**2.95**	**14.5**	<1.86	**5.47**	<1.84	<1.78
Perfluorobutane Sulfonate (PFBS)	40000	NA	<1.78	**2.42**	<1.85	<1.74	**9.34**	**9.43**	**4.6**	**5.88**	**3.33**	<1.78
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.78	**6.12**	<1.85	<1.74	**2.96**	**13**	<1.86	**6.71**	<1.84	<1.78
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.78	**2.56**	<1.85	<1.74	<1.78	**4.65**	<1.86	**2.77**	<1.84	<1.78
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.78	<1.79	<1.85	<1.74	<1.78	**2.74**	<1.86	**2.09**	<1.84	<1.78
Perfluorooctanoic Acid (PFOA, C8)*	40	70	**3.77**	**10.4**	<1.85	<1.74	**6.4**	**13.5**	**2.78**	**10.8**	**2.51**	<1.78
Perfluorononanoic Acid (PFNA)	NA	NA	<1.78	<1.79	<1.85	<1.74	<1.78	<1.80	<1.86	<1.89	<1.84	<1.78
Perfluorooctanesulfonic acid (PFOS)*	40	70	**4.85**	**5.8**	<1.85	<1.74	<1.78	**3.91**	<1.86	**1.96**	<1.84	<1.78
Sum of PFOS & PFOA	NA	70	**8.62**	**16.2**	ND	ND	**6.4**	**17.41**	**2.78**	**12.76**	**2.51**	<1.78
Other	**EPA MCL**	**AGQS**										
Total Dissolved Solids (mg/L)	500	NA	**210**	**260**	**270**	**180**	**230**	**160**	**210**	**230**	**150**	**160**
Nitrogen, Nitrate (mg/L)	10	NA	**2.6**	**2.2**	<0.10	<0.10	**2.3**	**4.2**	**1.5**	**2.6**	**1.1**	<0.10
Coliform, Total Bacteria (col/100mL)	NA	NA	NEG	NEG	**POS**	NEG	NEG	**POS**	NEG	NEG	NEG	NEG
Escherichia Coli (col/100mL)	Absent	NA	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG

Notes:

ng/L: nanograms per liter

ug/L: micrograms per liter

mg/L: milligrams per liter

NA indicates that a standard is not available

NS indicates that a sample collected from this well was not analyzed for the given parameter

NEG indicates negative for the presence

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EPA Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter

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Only a select list of VOCs are tabulated here, including those compounds detected above laboratory reporting limits and site specific compounds of concern. Other nonlisted VOC's were not detected.

< indicates analyte not detected at a concentration above the specified laboratory reporting limit

Bolded values indicate detected concentrations

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location / Well Depth / Treatment System / Sample Date	EPA MCL/ Site Cleanup Level	NHDES AGQS	9 Ross ~440' Kinetico 12/17/2018	10 Ross Unknown Filter + Softener 12/6/2018	10 Ross Unknown Filter + Softener 1/9/2019	11 Ross Unknown Small Filter 12/5/2018	12 Ross Unknown Filter 11/30/2018	13 Ross Unknown Softener 12/4/2018	14 Ross ~200-220' Filter + Softener 11/30/2018	15 Ross ~150' Filter + Descaler 12/18/2018	16 Ross ~50' Filter 1/9/2019	18 Ross Unknown Unknown 1/9/2019	19 Ross Unknown Filter + Softener 12/4/2018	20 Ross Unknown Softener 12/6/2018	21 Ross Unknown Filter 12/19/2018	24 Ross Unknown Unknown 12/4/2018
Volatile Organic Compounds (ug/L)																
1,1-Dichloroethane	NA	81	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	NA	5	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	NA	70	<0.5	<0.5	NS	**6.9**	**0.76**	**0.72**	**1.3**	<0.5	**2.4**	**0.81**	<0.5	<0.5	<0.5	**0.90**
cis-1,2-Dichloroethene	NA	70	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl tert butyl ether	NA	13	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	NA	5	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	NA	1000	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	NA	100	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	NA	5	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	NA	2	<0.5	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**														
1,4-Dioxane	3	0.32*	<0.142	**0.211**	**0.196**	<0.144	<0.144	<0.144	<0.142	<0.142	<0.139	<0.144	<0.144	<0.142	<0.150	<0.144
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**														
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.89	<1.80	NS	**2.17**	<1.86	**2.06**	**2.35**	<1.84	<1.81	<1.81	**1.9**	<1.86	<1.82	<1.86
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.89	**1.86**	NS	**2.95**	<1.86	**5.13**	**4.15**	<1.84	**2.18**	<1.81	**3.43**	<1.86	<1.83	<1.86
Perfluorobutane Sulfonate (PFBS)	40000	NA	<1.89	<1.80	NS	**2.59**	<1.86	**2.93**	**2.35**	<1.84	<1.81	<1.81	**5.54**	<1.86	<1.84	<1.86
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.89	**2.12**	NS	**3.54**	<1.86	**5.72**	**4.21**	<1.84	**2.32**	<1.81	**4.12**	<1.86	<1.85	<1.86
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.89	<1.80	NS	**1.81**	<1.86	<1.87	<1.84	<1.84	<1.81	<1.81	<1.84	<1.86	<1.86	<1.86
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.89	<1.80	NS	<1.76	<1.86	**1.88**	<1.84	<1.84	<1.81	<1.81	**2.15**	<1.86	<1.87	<1.86
Perfluorooctanoic Acid (PFOA, C8)*	40	70	<1.89	**2.41**	NS	**7.33**	**2.52**	**6.37**	**3.87**	**3.62**	**3.42**	<1.81	**7.29**	<1.86	**2.84**	**2.18**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.89	<1.80	NS	<1.76	<1.86	<1.87	<1.84	<1.84	<1.81	<1.81	<1.84	<1.86	<1.82	<1.86
Perfluorooctanesulfonic acid (PFOS)*	40	70	<1.89	<1.80	NS	**2.61**	<1.86	**2.88**	**2.05**	<1.84	<1.81	<1.81	**5.0**	**2.34**	**3.76**	<1.86
Sum of PFOS & PFOA	NA	70	<1.89	**2.41**	NS	**9.94**	**2.52**	**9.25**	**5.92**	**3.42**	**3.42**	ND	**12.29**	**2.34**	**6.6**	**2.18**
Other	**EPA MCL**	**AGQS**														
Total Dissolved Solids (mg/L)	500	NA	**190**	**200**	NS	**260**	**260**	NS	**330**	**270**	**340**	**260**	**220**	**240**	**320**	**190**
Nitrogen, Nitrate (mg/L)	10	NA	<0.10	<0.10	NS	**1.9**	**0.94**	NS	**1.4**	**0.34**	**1.8**	**1.5**	<0.10	**2.6**	**1.8**	**0.9**
Coliform, Total Bacteria (col/100mL)	NA	NA	NEG	NEG	NS	NEG	NEG	NEG	NEG	NEG	NEG	**POS**	NEG	NEG	NEG	**POS**
Escherichia Coli (col/100mL)	Absent	NA	NEG	NEG	NS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG

Notes:

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< indicates analyte not detected at a concentration above the specified laboratory reporting limit

Bolded values indicate detected concentrations

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location	EPA MCL/ Site Cleanup Level	NHDES AGQS	26 Ross		27 Ross	27 Ross-Pre	27 Ross-Post	28 Ross	28 Ross-Pre	28 Ross-Post
Well Depth			Unknown			Unknown			Unknown	
Treatment System			None			Softener			Green Sand & Tr bubble up for Radon	
Sample Date			12/20/2018	1/22/2019	12/6/2018	12/20/2018	12/20/2018	12/4/2018	12/18/2018	12/18/2018
Volatile Organic Compounds (ug/L)										
1,1-Dichloroethane	NA	81	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
1,2-Dichloroethane	NA	5	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
Chloroform	NA	70	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
cis-1,2-Dichloroethene	NA	70	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
Methyl tert butyl ether	NA	13	<0.5	NS	<0.5	NS	NS	**0.64**	NS	NS
Tetrachloroethene	NA	5	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
Toluene	NA	1000	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
trans-1,2-Dichloroethene	NA	100	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
Trichloroethene	NA	5	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
Vinyl chloride	NA	2	<0.5	NS	<0.5	NS	NS	<0.5	NS	NS
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**								
1,4-Dioxane	3	0.32*	**0.468***	**0.325***	**0.568***	**0.628***	<0.144	**0.682***	**0.776***	**0.634***
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**								
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.87	NS	**2.69**	NS	NS	**2.33**	NS	NS
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.87	NS	<1.89	NS	NS	**2.86**	NS	NS
Perfluorobutane Sulfonate (PFBS)	40000	NA	<1.87	NS	**6.56**	NS	NS	<1.88	NS	NS
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.87	NS	<1.89	NS	NS	**3.42**	NS	NS
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.87	NS	<1.89	NS	NS	**2.16**	NS	NS
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.87	NS	**2.13**	NS	NS	<1.88	NS	NS
Perfluorooctanoic Acid (PFOA, C8)*	40	70	<1.87	NS	<1.89	NS	NS	**8.47**	NS	NS
Perfluorononanoic Acid (PFNA)	NA	NA	<1.87	NS	<1.89	NS	NS	<1.88	NS	NS
Perfluorooctanesulfonic acid (PFOS)*	40	70	<1.87	NS	**2.66**	NS	NS	**2.11**	NS	NS
Sum of PFOS & PFOA	NA	70	ND	NS	**2.66**	NS	NS	**10.58**	NS	NS
Other	**EPA MCL**	**AGQS**								
Total Dissolved Solids (mg/L)	500	NA	**240**	NS	**340**	NS	NS	**590**	NS	NS
Nitrogen, Nitrate (mg/L)	10	NA	**0.38**	NS	**0.83**	NS	NS	<0.10	NS	NS
Coliform, Total Bacteria (col/100mL)	NA	NA	NEG	NS	**POS**	NS	NS	NEG	NS	NS
Escherichia Coli (col/100mL)	Absent	NA	NEG	NS	NEG	NS	NS	NEG	NS	NS

Notes:

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Bolded values indicate detected concentrations

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location Well Depth Treatment System Sample Date	EPA MCL/ Site Cleanup Level	NHDES AGQS	29 Ross 12/4/2018	29 Ross-Pre ~160' Kinetico 12/19/2018	29 Ross-Post 12/19/2018	30 Ross 12/3/2018	30 Ross-Pre ~300' Filter & Softener 12/18/2018	30 Ross-Post 12/18/2018	31 Ross 12/13/2018	31 Ross Unknown Filter 12/13/2018 DUP	31 Ross- Pre 1/3/2019	31 Ross-Post 1/3/2019
Volatile Organic Compounds (ug/L)												
1,1-Dichloroethane	NA	81	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
1,2-Dichloroethane	NA	5	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
Chloroform	NA	70	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
cis-1,2-Dichloroethene	NA	70	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
Methyl tert butyl ether	NA	13	<0.5	NS	NS	**1.1**	NS	NS	<0.5	<0.5	NS	NS
Tetrachloroethene	NA	5	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
Toluene	NA	1000	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
trans-1,2-Dichloroethene	NA	100	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
Trichloroethene	NA	5	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
Vinyl chloride	NA	2	<0.5	NS	NS	<0.5	NS	NS	<0.5	<0.5	NS	NS
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**										
1,4-Dioxane	3	0.32*	**0.421***	**0.578***	**0.594***	**0.545***	**0.633***	<0.144	**0.566***	**0.602***	**0.417***	**0.491***
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**										
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.84	NS	NS	**3.37**	NS	NS	<1.79	<1.83	NS	NS
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.84	NS	NS	**4.61**	NS	NS	<1.79	<1.83	NS	NS
Perfluorobutane Sulfonate (PFBS)	40000	NA	**2.74**	NS	NS	**1.93**	NS	NS	<1.79	<1.83	NS	NS
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.84	NS	NS	**5.63**	NS	NS	<1.79	<1.83	NS	NS
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.84	NS	NS	**3.35**	NS	NS	<1.79	<1.83	NS	NS
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.84	NS	NS	<1.84	NS	NS	<1.79	<1.83	NS	NS
Perfluorooctanoic Acid (PFOA, C8)*	40	70	**4.34**	NS	NS	**13.7**	NS	NS	<1.79	<1.83	NS	NS
Perfluorononanoic Acid (PFNA)	NA	NA	<1.84	NS	NS	<1.84	NS	NS	<1.79	<1.83	NS	NS
Perfluorooctanesulfonic acid (PFOS)*	40	70	**2.49**	NS	NS	**3.3**	NS	NS	<1.79	<1.83	NS	NS
Sum of PFOS & PFOA	NA	70	**6.83**	NS	NS	**17**	NS	NS	ND	ND	NS	NS
Other	**EPA MCL**	**AGQS**										
Total Dissolved Solids (mg/L)	500	NA	**310**	NS	NS	**530**	NS	NS	**400**	**380**	NS	NS
Nitrogen, Nitrate (mg/L)	10	NA	**0.55**	NS	NS	<0.10	NS	NS	<0.10	<0.10	NS	NS
Coliform, Total Bacteria (col/100mL)	NA	NA	**POS**	NS	NS	NEG	NS	NS	NEG	NEG	NS	NS
Escherichia Coli (col/100mL)	Absent	NA	NEG	NS	NS	NEG	NS	NS	NEG	NEG	NS	NS

Notes:

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Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location	EPA MCL/ Site Cleanup Level	NHDES AGQS	32 Ross	32 Ross-Pre	32 Ross-Post	34 Ross		3 Tokanel		4 Tokanel	7 Tokanel	8 Tokanel	9 Tokanel	10 Tokanel
Well Depth				Unknown		Unknown		~150-200'		>~300-350'	~280'	Unknown	Unknown	~300'
Treatment System				Filter & Softener		Salt Treatment		Charcoal Filter		Softener	None	Softener & 2 Filters	UV Filter & Softener	Filter & Softener
Sample Date			12/5/2018	1/22/2019	1/22/2019	11/30/2018	1/4/2019	12/6/2018	1/24/2019	11/30/2018	12/6/2018	12/6/2018	11/30/2018	12/10/2018
Volatile Organic Compounds (ug/L)														
1,1-Dichloroethane	NA	81	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	NA	5	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	NA	70	<0.5	NS	NS	<0.5	NS	<0.5	NS	**2.3**	<0.5	<0.5	<0.5	**0.94**
cis-1,2-Dichloroethene	NA	70	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl tert butyl ether	NA	13	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	NA	5	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	NA	1000	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	NA	100	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	NA	5	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	NA	2	<0.5	NS	NS	<0.5	NS	<0.5	NS	<0.5	<0.5	<0.5	<0.5	<0.5
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**												
1,4-Dioxane	3	0.32*	**0.351***	**0.253**	**0.233**	**0.262**	**0.254**	**0.259**	**0.168**	<0.142	<0.144	<0.163	<0.142	<0.144
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**												
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.85	NS	NS	**3.53**	NS	**2.51**	NS	**3.73**	**6.41**	**2.49**	**3.53**	**2.69**
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.85	NS	NS	**7.24**	NS	<1.84	NS	**6.12**	**8.82**	**4.04**	**3.82**	**5.46**
Perfluorobutane Sulfonate (PFBS)	40000	NA	<1.85	NS	NS	**4.36**	NS	<1.84	NS	**32.4**	**11**	**4.7**	**23.8**	**5.14**
Perfluorohexanoic acid (PFHxA)	NA	NA	**2.66**	NS	NS	**11.3**	NS	<1.84	NS	**7.51**	**8.91**	**4.65**	**4.64**	**4.96**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.85	NS	NS	**3.34**	NS	<1.84	NS	**4.17**	**5.09**	**2.33**	**3.38**	**1.93**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.85	NS	NS	<1.84	NS	<1.84	NS	**2.26**	**6.08**	**2.54**	**8.7**	**2.02**
Perfluorooctanoic Acid (PFOA, C8)*	40	70	**3.1**	NS	NS	**11.8**	NS	<1.84	NS	**13.5**	**25**	**10**	**17.2**	**7.78**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.85	NS	NS	<1.84	NS	<1.84	NS	<1.77	<1.87	<1.87	<1.82	<1.84
Perfluorooctanesulfonic acid (PFOS)*	40	70	<1.85	NS	NS	**3.95**	NS	<1.84	NS	**3.15**	**19.7**	**4.01**	**19.8**	**3.76**
Sum of PFOS & PFOA	NA	70	**3.1**	NS	NS	**15.75**	NS	ND	NS	**16.65**	**44.7**	**14.01**	**37**	**11.54**
Other	**EPA MCL**	**AGQS**												
Total Dissolved Solids (mg/L)	500	NA	240	NS	NS	**400**	NS	**350**	NS	**360**	**260**	**240**	**190**	**320**
Nitrogen, Nitrate (mg/L)	10	NA	<0.10	NS	NS	**1.3**	NS	<0.10	NS	**1.5**	**0.86**	**4.8**	**4.4**	**0.17**
Coliform, Total Bacteria (col/100mL)	NA	NA	NEG	NS	NS	**POS**	NS	NEG	NS	NEG	**POS**	NEG	**POS**	**POS**
Escherichia Coli (col/100mL)	Absent	NA	NEG	NS	NS	NEG	NS	NEG	NS	NEG	NEG	NEG	NEG	NEG

Notes:

ng/L: nanograms per liter

ug/L: micrograms per liter

mg/L: milligrams per liter

NA indicates that a standard is not available

NS indicates that a sample collected from this well was not analyzed for the given parameter

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Only a select list of VOCs are tabulated here, including those compounds detected above laboratory reporting limits and site specific compounds of concern. Other nonlisted VOC's were not detected.

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Bolded values indicate detected concentrations

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location / Well Depth / Treatment System / Sample Date	EPA MCL/ Site Cleanup Level	NHDES AGQS	11 Tokanel Unknown Filter & Softener 1/24/2019	11 Tokanel Unknown Filter & Softener 1/24/2019 DUP	16 Tokanel 400' Small Filter 12/12/2018	17 Tokanel Unknown Neautralizer & Softener 12/3/2018	18 Tokanel 75' Whole House Filter 12/3/2018	21 Tokanel Unknown Filter & Softener 12/14/2018	24 Tokanel > 300' Carbon Filter 1/15/2019	24 Tokanel > 300' Carbon Filter 2/11/2019	25 Tokanel Unknown Reverse Osmosis & Softener 12/13/2018	26 Tokanel Unknown None 12/3/2018	26 Tokanel Unknown None 1/4/2019	27 Tokanel Unknown Softener 12/10/2018
Volatile Organic Compounds (ug/L)														
1,1-Dichloroethane	NA	81	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
1,2-Dichloroethane	NA	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Chloroform	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
cis-1,2-Dichloroethene	NA	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Methyl tert butyl ether	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Tetrachloroethene	NA	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Toluene	NA	1000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
trans-1,2-Dichloroethene	NA	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Trichloroethene	NA	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Vinyl chloride	NA	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS	<0.5	<0.5	NS	<0.5
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**												
1,4-Dioxane	3	0.32*	<0.142	<0.144	<0.144	<0.144	<0.144	<0.153	**0.262**	RP	<0.147	**0.189**	**0.199**	<0.144
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**												
Perfluorobutanoic Acid (PFBA)	NA	NA	**2.22**	**2.1**	<1.86	**3.27**	<1.85	**3.27**	<1.81	NS	<1.93	<1.80	NS	**2.28**
Perfluoropentanoic Acid (PFPeA)	NA	NA	**2.05**	**2.04**	<1.86	**2.17**	<1.85	**3.16**	<1.81	NS	<1.93	<1.80	NS	**2.86**
Perfluorobutane Sulfonate (PFBS)	40000	NA	**5.08**	**5.19**	<1.86	**9.58**	<1.85	**6.48**	**2.36**	NS	<1.93	**1.94**	NS	**3.33**
Perfluorohexanoic acid (PFHxA)	NA	NA	**1.9**	**1.94**	<1.86	**2**	<1.85	**2.45**	<1.81	NS	<1.93	<1.80	NS	**2.8**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.84	<1.79	<1.86	<1.84	<1.85	<1.89	<1.81	NS	<1.93	<1.80	NS	<1.81
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.84	**1.94**	<1.86	**7.06**	<1.85	**4.08**	**2.52**	NS	<1.93	**2.58**	NS	**2.24**
Perfluorooctanoic Acid (PFOA, C8)*	40	70	**7.03**	**6.96**	**2.55**	**8.14**	<1.85	**4.9**	**3.11**	NS	<1.93	<1.80	NS	**6.84**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.84	<1.79	<1.86	<1.84	<1.85	<1.89	<1.81	NS	<1.93	<1.80	NS	<1.81
Perfluorooctanesulfonic acid (PFOS)*	40	70	**4.61**	**5.38**	<1.86	**5.14**	<1.85	**4.19**	**6.15**	NS	<1.93	<1.80	NS	**3.95**
Sum of PFOS & PFOA	NA	70	**11.64**	**12.34**	**2.55**	**13.28**	ND	**9.09**	**9.26**	NS	ND	ND	NS	**10.79**
Other	**EPA MCL**	**AGQS**												
Total Dissolved Solids (mg/L)	500	NA	**270**	**270**	**290**	**230**	**200**	**340**	**280**	NS	**230**	**310**	NS	**290**
Nitrogen, Nitrate (mg/L)	10	NA	<0.10	<0.10	**0.12**	**1.2**	**1.4**	**0.52**	**0.16**	NS	NS	**0.11**	NS	<0.10
Coliform, Total Bacteria (col/100mL)	NA	NA	NEG	NEG	NEG	NEG	NEG	**POS**	NEG	NS	NS	**POS**	NS	NEG
Escherichia Coli (col/100mL)	Absent	NA	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NS	NS	**POS**	NS	NEG

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Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

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Table 10
Summary of VOC and PFAS Drinking Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location / Well Depth / Treatment System / Sample Date	EPA MCL/ Site Cleanup Level	NHDES AGQS	28 Tokanel Unknown None 12/27/2018	28 Tokanel Unknown None 2/11/2019	29 Tokanel Unknown De-acidifier & Softener 12/13/2018	30 Tokanel 250' Whole House Filter 12/3/2018	30 Tokanel- Pre 250' Whole House Filter 12/18/2018	30 Tokanel- Post 250' Whole House Filter 12/18/2018	31 Tokanel Unknown Softener 12/13/2018	33 Tokanel 650' Softener, Ironizer 1/14/2019	33 Tokanel 650' Softener, Ironizer 1/24/2019	35 Tokanel 1100' Conditioner 12/3/2018	37 Tokanel Unknown Acid Neutralizer 12/19/2018
Volatile Organic Compounds (ug/L)													
1,1-Dichloroethane	NA	81	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
1,2-Dichloroethane	NA	5	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Chloroform	NA	70	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
cis-1,2-Dichloroethene	NA	70	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Methyl tert butyl ether	NA	13	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Tetrachloroethene	NA	5	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Toluene	NA	1000	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	**1.4**	NS	<0.5	<0.5
trans-1,2-Dichloroethene	NA	100	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Trichloroethene	NA	5	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Vinyl chloride	NA	2	<0.5	NS	<0.5	<0.5	NS	NS	<0.5	<0.5	NS	<0.5	<0.5
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**											
1,4-Dioxane	3	0.32*	**0.75***	RP	<0.147	**1.36***	**1.65***	**1.59***	<0.147	**0.275**	**0.346***	<0.147	<0.144
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**											
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.80	NS	<1.85	**220**	NS	NS	<1.74	<1.86	NS	<1.82	**2.91**
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.80	NS	<1.85	<1.88	NS	NS	<1.74	<1.86	NS	<1.82	**2.83**
Perfluorobutane Sulfonate (PFBS)	40000	NA	<1.80	NS	**14.1**	**3.71**	NS	NS	**6.61**	<1.86	NS	<1.82	**2.41**
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.80	NS	<1.85	<1.88	NS	NS	<1.74	<1.86	NS	<1.82	**2.59**
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.80	NS	<1.85	<1.88	NS	NS	<1.74	<1.86	NS	<1.82	**2.1**
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.80	NS	**4.52**	**3.59**	NS	NS	**7.53**	**2.50**	NS	<1.82	<1.85
Perfluorooctanoic Acid (PFOA, C8)*	40	70	**2.45**	NS	**5.47**	<1.88	NS	NS	**7.52**	<1.86	NS	**2.4**	**6.9**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.80	NS	<1.85	<1.88	NS	NS	<1.74	<1.86	NS	<1.82	<1.85
Perfluorooctanesulfonic acid (PFOS)*	40	70	**2.12**	NS	**17.1**	**3.63**	NS	NS	**8.68**	<1.86	NS	<1.82	**2.13**
Sum of PFOS & PFOA	NA	70	**4.57**	NS	**22.57**	**3.63**	NS	NS	**16.2**	ND	NS	**2.4**	**9.03**
Other	**EPA MCL**	**AGQS**											
Total Dissolved Solids (mg/L)	500	NA	**220**	NS	**200**	**330**	NS	NS	**200**	**220**	NS	**240**	**270**
Nitrogen, Nitrate (mg/L)	10	NA	**0.58**	NS	**2.1**	**0.22**	NS	NS	**0.86**	<0.10	NS	<0.10	**4.6**
Coliform, Total Bacteria (col/100mL)	NA	NA	NEG	NS	NEG	NEG	NS	NS	NEG	**POS**	NS	NEG	NEG
Escherichia Coli (col/100mL)	Absent	NA	NEG	NS	NEG	NEG	NS	NS	NEG	NEG	NS	NEG	NEG

Notes:

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Tinkham's Garage Site
Londonderry, New Hampshire

Sample Location	EPA MCL/ Site Cleanup Level	NHDES AGQS	39 Tokanel			43 Tokanel		45 Tokanel
Well Depth			365'			Unknown		Unknown
Treatment System			None			Softener		None
Sample Date			12/5/2018	12/5/2018 DUP	12/19/2018	12/17/2018	1/14/2019	12/5/2018
Volatile Organic Compounds (ug/L)								
1,1-Dichloroethane	NA	81	<0.5	<0.5	NS	<0.5	NS	<0.5
1,2-Dichloroethane	NA	5	<0.5	<0.5	NS	<0.5	NS	<0.5
Chloroform	NA	70	<0.5	<0.5	NS	<0.5	NS	<0.5
cis-1,2-Dichloroethene	NA	70	<0.5	<0.5	NS	<0.5	NS	<0.5
Methyl tert butyl ether	NA	13	<0.5	<0.5	NS	<0.5	NS	<0.5
Tetrachloroethene	NA	5	<0.5	<0.5	NS	<0.5	NS	<0.5
Toluene	NA	1000	<0.5	<0.5	NS	<0.5	NS	<0.5
trans-1,2-Dichloroethene	NA	100	<0.5	<0.5	NS	<0.5	NS	<0.5
Trichloroethene	NA	5	<0.5	<0.5	NS	<0.5	NS	<0.5
Vinyl chloride	NA	2	<0.5	<0.5	NS	<0.5	NS	<0.5
Semi Volatile Organic Compounds (ug/L)	**Site Cleanup**	**AGQS**						
1,4-Dioxane	3	0.32*	**0.504***	**0.522***	**0.606***	**0.145**	<0.142	<0.142
PFAS by Isotope Dilution (ng/L)	**EPA SSSL**	**AGQS**						
Perfluorobutanoic Acid (PFBA)	NA	NA	<1.80	<1.84	NS	<1.79	NS	**2.69**
Perfluoropentanoic Acid (PFPeA)	NA	NA	<1.80	<1.84	NS	<1.79	NS	<1.82
Perfluorobutane Sulfonate (PFBS)	40000	NA	<1.80	<1.84	NS	<1.79	NS	**2.5**
Perfluorohexanoic acid (PFHxA)	NA	NA	<1.80	<1.84	NS	<1.79	NS	<1.82
Perfluoroheptanoic acid (PFHpA)	NA	NA	<1.80	<1.84	NS	<1.79	NS	<1.82
Perfluorohexanesulfonic acid (PFHxS)	NA	NA	<1.80	<1.84	NS	<1.79	NS	<1.82
Perfluorooctanoic Acid (PFOA, C8)*	40	70	<1.80	<1.84	NS	**1.99**	NS	**3.38**
Perfluorononanoic Acid (PFNA)	NA	NA	<1.80	<1.84	NS	<1.79	NS	<1.82
Perfluorooctanesulfonic acid (PFOS)*	40	70	<1.80	<1.84	NS	<1.79	NS	<1.82
Sum of PFOS & PFOA	NA	70	ND	ND	NS	**1.99**	NS	**3.38**
Other	**EPA MCL**	**AGQS**						
Total Dissolved Solids (mg/L)	500	NA	**140**	**160**	NS	**260**	NS	**230**
Nitrogen, Nitrate (mg/L)	10	NA	<0.10	<0.10	NS	<0.10	NS	**1.5**
Coliform, Total Bacteria (col/100mL)	NA	NA	**POS**	NEG	NS	NEG	NS	NEG
Escherichia Coli (col/100mL)	Absent	NA	NEG	NEG	NS	NEG	NS	NEG

Notes:

ng/L: nanograms per liter

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RP indicates that results are pending

EPA Site Specific Screening Level (SSSL) provided in 30 May 2018 EPA Letter

MCL = Maximum Contaminant Level for drinking water

NHDES AGQS: Ambient Groundwater Quality Standards established by the New Hampshire Contaminated Site Management Rules (Env-Or 600)

Only a select list of VOCs are tabulated here, including those compounds detected above laboratory reporting limits and site specific compounds of concern. Other nonlisted VOC's were not detected.

< indicates analyte not detected at a concentration above the specified laboratory reporting limit

Bolded values indicate detected concentrations

Highlighted values indicate an exceedance of the site cleanup level, USEPA MCL and/or NH AGQS.

* On 1 September 2018, the NHDES AGQS for 1,4-Dioxane was lowered from 3 µg/L to 0.32 µg/L. Concentrations above 0.32 µg/L but below the site cleanup level of 3 µg/L detected after this date are marked with an asterisk (*).

Table 11
Summary of VOC Surface Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	NHDES WQCTS (ug/L)	SW-1 - Page 1													
		10/22/1998	11/6/1998	5/10/1999	11/15/1999	5/17/2000	11/30/2000	5/14/2001	11/15/2001	5/21/2002	11/11/2002	5/30/2003	11/6/2003	5/19/2004	11/3/2004
Tetrachloroethene	0.8	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	2.7	<2	<2	**2**	<2	**3**	<2	<2	<2	**4**	<2	**2**	<2	<2	<2
1,1,1-Trichloroethane	1	<2	<2	<2	<2	**2**	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	NS	<2	<2	**2**	<2	**4**	**2**	<2	<2	**2**	<2	<2	<2	<2	<2
1,1-Dichloroethane	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	0.38	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl t-butyl ether	NS	**30**	<10	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dioxane	NS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:

1. All concentration in units of micrograms per liter (ug/L).
2. WQCTS indicates New Hampshire Department of Environmental Services Water Quality Criteria for Toxic Substances for protection of human health (water and fish ingestion).
3. Only analytes detected in at least on esample and site contaminants of concern are reported here. For a complete list of analytes, see laboratory data.
4. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
5. **Bold** values indicate compounds that were detected above laboratory minimum detection limit.
6. Laboratory analyses for volatile organic compounds, except 1,4-Dioxane, were performed by Eastern Analytical, Inc., Concord, New Hampshire, using EPA Method 8260B. Laboratory analyses for 1,4-Dioxane were performed by Spectrum Analytical, Inc. (formerly Mitkem Laboratories), Warwick, Rhode Island using EPA Conract Laboratory Program SOM01.2 semivolatile organic analysis procedures, using Modified Analysis 1679.2.
7. Tetrachloroethene and 1,2-dichloroethane were analyzed for and were not detected at concentrations greater than or equal to the laboratory detection limit. For these compounds, the laboratory detection limit exceeds WQCTS.
8. NS indicates that no WQCTS has been established for the compound.
9. J qualifier indicates the result is estimated based on data validation criteria for this parameter.
10. NT indicates that the sample was not tested for this parameter.
11. Shaded values indicate compounds that were detected at concentrations greater than the WQCTS.
12. Surface water from SW1 was collected on May 6, 2013 for analysis via 8260B and on May 7, 2013 for 1,4-Dioxane analysis.

Table 11
Summary of VOC Surface Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	NHDES WQCTS (ug/L)	SW-1 - Page 2															
		5/3/2005	11/18/2005	5/17/2006	11/8/2006	5/14/2007	11/14/2007	5/15/2008	11/6/2008	5/21/2009	11/10/2009	5/10/2010	11/2/2010	5/26/2011	11/9/2011	5/10/2012	11/6/2012
Tetrachloroethene	0.8	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	2.7	**2**	<2	**2**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	0.38	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl t-butyl ether	NS	<5	<5	**99**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dioxane	NS	NT	NT	NT	NT	NT	NT	**1 J**	<2	**4.1**	<2	<2	<2	<2	**0.23 J**	**0.15**	**0.46**

Notes:

1. All concentration in units of micrograms per liter (ug/L).
2. WQCTS indicates New Hampshire Department of Environmental Services Water Quality Criteria for Toxic Substances for protection of human health (water and fish ingestion).
3. Only analytes detected in at least on esample and site contaminants of concern are reported here. For a complete list of analytes, see laboratory data.
4. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
5. **Bold** values indicate compounds that were detected above laboratory minimum detection limit.
6. Laboratory analyses for volatile organic compounds, except 1,4-Dioxane, were performed by Eastern Analytical, Inc., Concord, New Hampshire, using EPA Method 8260B. Laboratory analyses for 1,4-Dioxane were performed by Spectrum Analytical, Inc. (formerly Mitkem Laboratories), Warwick, Rhode Island using EPA Conract Laboratory Program SOM01.2 semivolatile organic analysis procedures, using Modified Analysis 1679.2.
7. Tetrachloroethene and 1,2-dichloroethane were analyzed for and were not detected at concentrations greater than or equal to the laboratory detection limit. For these compounds, the laboratory detection limit exceeds WQCTS.
8. NS indicates that no WQCTS has been established for the compound.
9. J qualifier indicates the result is estimated based on data validation criteria for this parameter.
10. NT indicates that the sample was not tested for this parameter.
11. Shaded values indicate compounds that were detected at concentrations greater than the WQCTS.
12. Surface water from SW1 was collected on May 6, 2013 for analysis via 8260B and on May 7, 2013 for 1,4-Dioxane analysis.

Table 11
Summary of VOC Surface Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	NHDES WQCTS (ug/L)	SW-1 - Page 3											
		5/6/2013	11/12/2013	4/3/2014	11/10/2014	5/7/2015	11/18/2015	5/25/2016	10/26/2016	5/30/2017	11/14/2017	5/16/2018	10/30/2018
Tetrachloroethene	0.8	<2	<2	<2	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	2.7	<2	<2	<2	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	1	<2	<2	<2	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	NS	<2	<2	<2	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NS	<2	<2	<2	<2	<2	<0.75	<0.75	<0.5	<0.75	<0.75	<0.5	<0.5
1,2-Dichloroethane	0.38	<2	<2	<2	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl t-butyl ether	NS	<5	<5	<5	<5	<5	<1	<1	<0.5	<1	<1	<0.5	<0.5
1,4-Dioxane	NS	**0.72**	**1.6**	<0.1	**1.1**	**0.64**	<0.10	**0.4**	**0.21**	**0.61**	**0.66**	**0.281**	**0.778**

Notes:

1. All concentration in units of micrograms per liter (ug/L).
2. WQCTS indicates New Hampshire Department of Environmental Services Water Quality Criteria for Toxic Substances for protection of human health (water and fish ingestion).
3. Only analytes detected in at least on esample and site contaminants of concern are reported here. For a complete list of analytes, see laboratory data.
4. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
5. **Bold** values indicate compounds that were detected above laboratory minimum detection limit.
6. Laboratory analyses for volatile organic compounds, except 1,4-Dioxane, were performed by Eastern Analytical, Inc., Concord, New Hampshire, using EPA Method 8260B. Laboratory analyses for 1,4-Dioxane were performed by Spectrum Analytical, Inc. (formerly Mitkem Laboratories), Warwick, Rhode Island using EPA Conract Laboratory Program SOM01.2 semivolatile organic analysis procedures, using Modified Analysis 1679.2.
7. Tetrachloroethene and 1,2-dichloroethane were analyzed for and were not detected at concentrations greater than or equal to the laboratory detection limit. For these compounds, the laboratory detection limit exceeds WQCTS.
8. NS indicates that no WQCTS has been established for the compound.
9. J qualifier indicates the result is estimated based on data validation criteria for this parameter.
10. NT indicates that the sample was not tested for this parameter.
11. Shaded values indicate compounds that were detected at concentrations greater than the WQCTS.
12. Surface water from SW1 was collected on May 6, 2013 for analysis via 8260B and on May 7, 2013 for 1,4-Dioxane analysis.

Table 11
Summary of VOC Surface Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	NHDES WQCTS (ug/L)	SW-2 - Page 1															
		9/4/1998	10/22/1998	11/6/1998	5/10/1999	5/17/2000	5/14/2001	11/15/2001	5/21/2002	11/11/2002	5/30/2003	11/6/2003	5/19/2004	11/3/2004	5/3/2005	11/18/2005	5/17/2006
Tetrachloroethene	0.8	DRY	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	2.7	DRY	<2	<2	**3**	**4**	<2	<2	**10**	<2	**3**	<2	<2	<2	**3**	<2	**2**
1,1,1-Trichloroethane	1	DRY	<2	<2	<2	**3**	<2	<2	**4**	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	NS	DRY	<2	<2	**2**	**4**	<2	<2	**4**	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	NS	DRY	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	0.38	DRY	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl t-butyl ether	NS	DRY	**30**	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**100**
1,4-Dioxane	NS	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

Notes:

1. All concentration in units of micrograms per liter (ug/L).
2. WQCTS indicates New Hampshire Department of Environmental Services Water Quality Criteria for Toxic Substances for protection of human health (water and fish ingestion).
3. Only analytes detected in at least on esample and site contaminants of concern are reported here. For a complete list of analytes, see laboratory data.
4. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
5. **Bold** values indicate compounds that were detected above laboratory minimum detection limit.
6. Laboratory analyses for volatile organic compounds, except 1,4-Dioxane, were performed by Eastern Analytical, Inc., Concord, New Hampshire, using EPA Method 8260B. Laboratory analyses for 1,4-Dioxane were performed by Spectrum Analytical, Inc. (formerly Mitkem Laboratories), Warwick, Rhode Island using EPA Conract Laboratory Program SOM01.2 semivolatile organic analysis procedures, using Modified Analysis 1679.2.
7. Tetrachloroethene and 1,2-dichloroethane were analyzed for and were not detected at concentrations greater than or equal to the laboratory detection limit. For these compounds, the laboratory detection limit exceeds WQCTS.
8. NS indicates that no WQCTS has been established for the compound.
9. J qualifier indicates the result is estimated based on data validation criteria for this parameter.
10. NT indicates that the sample was not tested for this parameter.
11. Shaded values indicate compounds that were detected at concentrations greater than the WQCTS.
12. Surface water from SW1 was collected on May 6, 2013 for analysis via 8260B and on May 7, 2013 for 1,4-Dioxane analysis.

Table 11
Summary of VOC Surface Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	NHDES WQCTS (ug/L)	SW-2 - Page 2															
		11/8/2006	5/14/2007	11/14/2007	5/15/2008	11/6/2008	5/21/2009	11/10/2009	5/10/2010	11/2/2010	5/26/2011	11/9/2011	5/10/2012	11/6/2012	5/6/2013	11/12/2013	4/3/2014
Tetrachloroethene	0.8	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Trichloroethene	2.7	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-Trichloroethane	1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethene	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-Dichloroethane	NS	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethane	0.38	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl t-butyl ether	NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,4-Dioxane	NS	NT	NT	NT	**2 J**	<2	**0.83 J**	<2	<2	<2	<2	**0.2 J**	**0.14**	**0.37**	**0.74**	**1.4**	**0.3**

Notes:

1. All concentration in units of micrograms per liter (ug/L).
2. WQCTS indicates New Hampshire Department of Environmental Services Water Quality Criteria for Toxic Substances for protection of human health (water and fish ingestion).
3. Only analytes detected in at least on esample and site contaminants of concern are reported here. For a complete list of analytes, see laboratory data.
4. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
5. **Bold** values indicate compounds that were detected above laboratory minimum detection limit.
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7. Tetrachloroethene and 1,2-dichloroethane were analyzed for and were not detected at concentrations greater than or equal to the laboratory detection limit. For these compounds, the laboratory detection limit exceeds WQCTS.
8. NS indicates that no WQCTS has been established for the compound.
9. J qualifier indicates the result is estimated based on data validation criteria for this parameter.
10. NT indicates that the sample was not tested for this parameter.
11. Shaded values indicate compounds that were detected at concentrations greater than the WQCTS.
12. Surface water from SW1 was collected on May 6, 2013 for analysis via 8260B and on May 7, 2013 for 1,4-Dioxane analysis.

Table 11
Summary of VOC Surface Water Quality Data
Tinkham's Garage Site
Londonderry, New Hampshire

Detected Volatile Organic Compounds	NHDES WQCTS (ug/L)	SW-2 - Page 3								
		11/10/2014	5/7/2015	11/18/2015	5/25/2016	10/26/2016	5/30/2017	11/14/2017	5/16/2018	10/30/2018
Tetrachloroethene	0.8	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	2.7	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	1	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	NS	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	NS	<2	<2	<0.75	<0.75	<0.5	<0.75	<0.75	<0.5	<0.5
1,2-Dichloroethane	0.38	<2	<2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl t-butyl ether	NS	<5	<5	<1	<1	<0.5	<1	<1	<0.5	<0.5
1,4-Dioxane	NS	**1.3**	**0.44**	<0.10	**0.24**	<0.2	**0.66**	**0.48**	**0.28**	**0.496**

Notes:

1. All concentration in units of micrograms per liter (ug/L).
2. WQCTS indicates New Hampshire Department of Environmental Services Water Quality Criteria for Toxic Substances for protection of human health (water and fish ingestion).
3. Only analytes detected in at least on esample and site contaminants of concern are reported here. For a complete list of analytes, see laboratory data.
4. < indicates analyte not detected at a concentration above the specified laboratory reporting limit.
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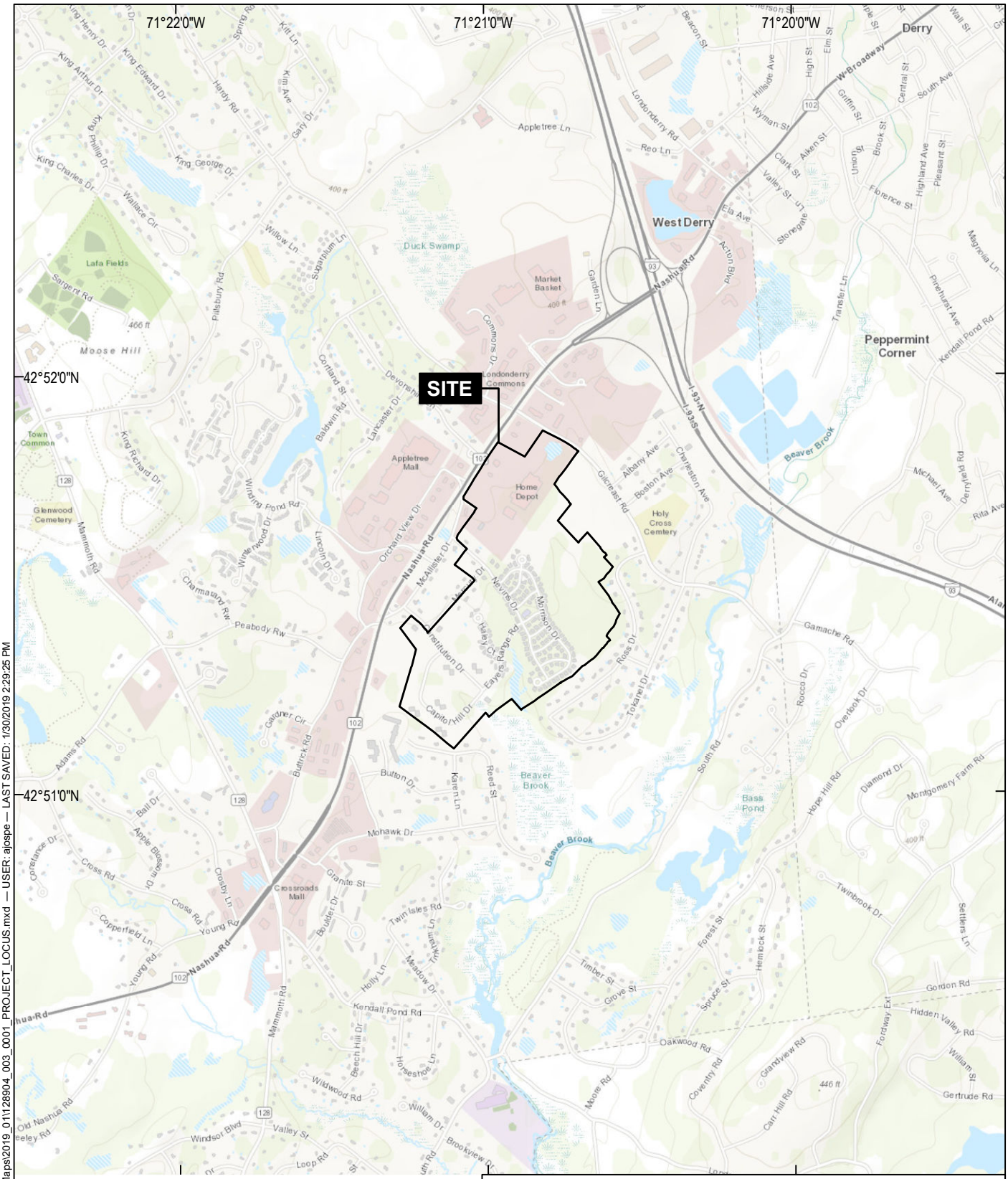
8. NS indicates that no WQCTS has been established for the compound.
9. J qualifier indicates the result is estimated based on data validation criteria for this parameter.
10. NT indicates that the sample was not tested for this parameter.
11. Shaded values indicate compounds that were detected at concentrations greater than the WQCTS.
12. Surface water from SW1 was collected on May 6, 2013 for analysis via 8260B and on May 7, 2013 for 1,4-Dioxane analysis.

APPENDIX D. FIGURES



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MAP SOURCE: ESRI
USGS QUAD: BOSTON W
SITE COORDINATES: 42°51'26"N, 71°20'52"

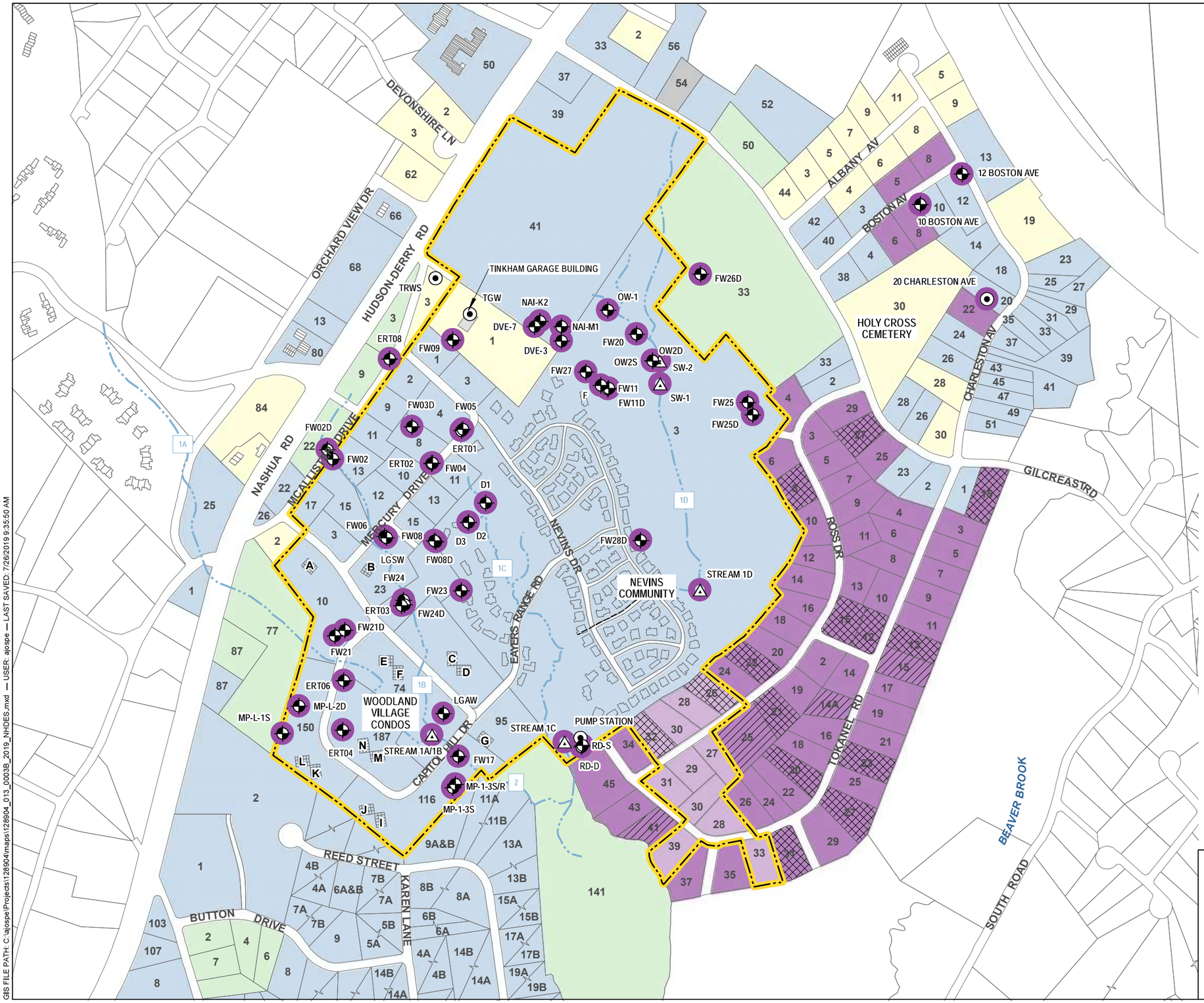
HALEY ALDRICH

TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
JANUARY 2019

FIGURE 1



LEGEND

- EXISTING MONITORING WELL
- SURFACE WATER SAMPLE
- 2019 GMP FORMER TAP SAMPLE
- 2019 GMP MONITORING LOCATION
- STREAM
- APPROXIMATE LOCATION OF STREAM 1D CULVERT
- 2 STREAM DESIGNATION
- 2018 GROUNDWATER MANAGEMENT ZONE (GMZ)

RESIDENTIAL WELL SAMPLING KEY

- CONNECTED TO PUBLIC WATER SUPPLY
- PRIVATE WELL
- POTENTIAL PRIVATE WELL
- UNDEVELOPED PARCEL
- 2019 GMP PRIVATE WELL SAMPLE LOCATION
- 2019 GMP PRIVATE WELL SAMPLE LOCATIONS WITHIN GMZ
- ACCESS DENIED BY OWNER
- NO RESPONSE FROM OWNER

NOTES

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. PARCEL ADDRESS SOURCE: TOWN OF LONDONDERRY GIS
3. TAX ID SOURCE: NH GRANIT GIS
4. PARCELS CONNECTED TO PUBLIC WATER BASED ON INFORMATION PROVIDED BY PENNICHUCK WATER IN 2016 AND MAY 2018.

N

0 600 1,200

SCALE IN FEET

HALEY ALDRICH

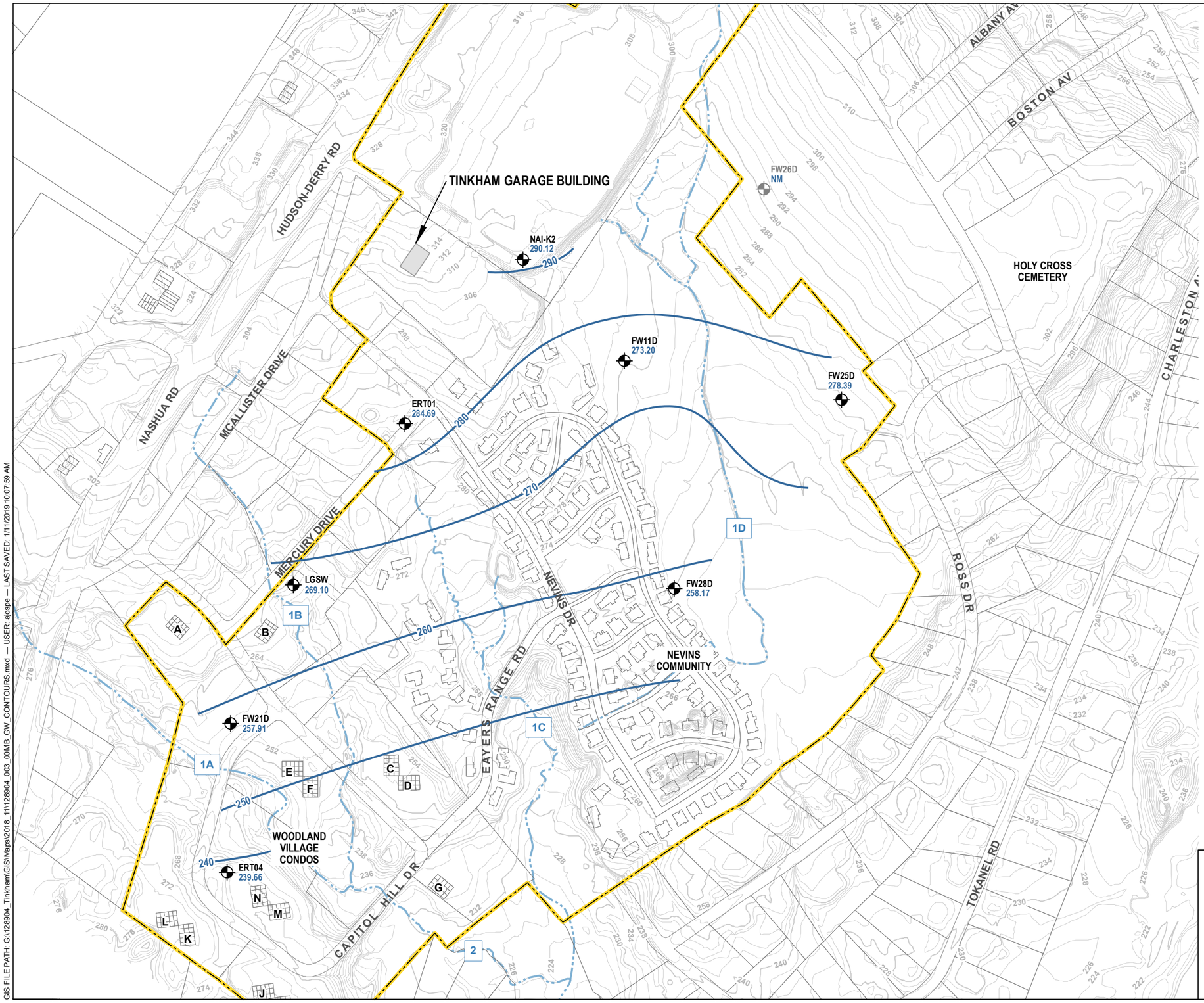
TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

2019 NHDES GROUNDWATER MANAGEMENT PERMIT MONITORING PROGRAM

FIGURE 2

AUGUST 2019

GIS FILE PATH: C:\ajospe\Projects\128904\maps\128904_013_0003B_2019_NHDES.mxd — USER: ajospe — LAST SAVED: 7/26/2019 9:35:50 AM



LEGEND

- BEDROCK MONITORING WELL
- FW-11D 273.20 — WELL ID AND GROUNDWATER ELEVATION (MAY 2018)
- GROUNDWATER ELEVATION CONTOUR, 10-FT INTERVAL
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX
- 1D — STREAM WITH DESIGNATION
- GROUNDWATER MANAGEMENT ZONE
- PARCEL BOUNDARY

NOTES

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. WATER LEVELS MEASURED 16 MAY, 17 MAY, 18 MAY, AND 1 JUNE 2018.
3. VERTICAL DATUM: NGVD29
4. TOPOGRAPHIC CONTOUR SOURCE: TOWN OF LONDONDERRY GIS
5. PARCEL DATA SOURCE: GRANIT GIS
6. STREAM DATA SOURCE: USGS NHD WITH UPDATES BY GPS

N

0 400 800
SCALE IN FEET

HALEY ALDRICH

TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

BEDROCK GROUNDWATER CONTOURS (MAY 2018)

JANUARY 2019

FIGURE 3

GIS FILE PATH: G:\128904_Tinkham\GIS\Maps\2018_1\128904_003_00MB_GW_CONTOURS.mxd — USER: ajospe — LAST SAVED: 1/11/2019 10:07:59 AM

TINKHAM GARAGE BUILDING
HUDSON-DERRY RD
DVE-7 300.69
NAI-M1 285.97
OW-1 280.42
FW-20 276.12
FW-09 293.71
DVE-3 284.64
OW-2D 273.45
FW-27 278.24
OW-2S 273.39
F 274.72
FW-11 273.57
290
280
270
260
250
240
230
HOLY CROSS CEMETERY
ALBANY AV
BOSTON AV
CHARLESTON AV
GILCREASTRD
ROSS DR
TOKANEL RD
NASHUA RD
MCALLISTER DRIVE
MERCURY DRIVE
D1 264.47
NEVINS DR
EAYERS RANGE RD
CAPITOL HILL DR
FW-23 252.99
FW-24 255.24
NEVINS COMMUNITY
FW21 249.84
STREAM GAUGE 245.54
MP-L-2D 257.42
MP-L-1S 260.93
WOODLAND VILLAGE CONDOS
FW-17 230.52
RD-S 225.21
A
B
C
D
E
F
G
I
J
K
L
M
N

LEGEND

- OVERBURDEN MONITORING WELL
- FW-09 293.65 — WELL ID AND GROUNDWATER ELEVATION (OCT 2016)
- STREAM GAUGE
- OVERBURDEN GROUNDWATER ELEVATION CONTOUR, IN FEET, 10-FT INTERVAL (OCT 2016), DASHED WHERE INFERRED
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX
- STREAM
- GROUNDWATER MANAGEMENT ZONE
- PARCEL BOUNDARY

NOTES

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASURED ON 18 AND 19 OCTOBER 2016.
3. TOPOGRAPHIC CONTOUR AND PARCEL ADDRESS SOURCE: TOWN OF LONDONDERRY GIS
4. PARCEL BOUNDARY AND ROAD CENTERLINE SOURCE: NH GRANIT GIS CLEARINGHOUSE (www.granit.unh.edu)
5. MONITORING WELLS SURVEYED BY CLD CONSULTING ENGINEERS, SEPTEMBER 2016. ELEVATION DATUM NGVD29.

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

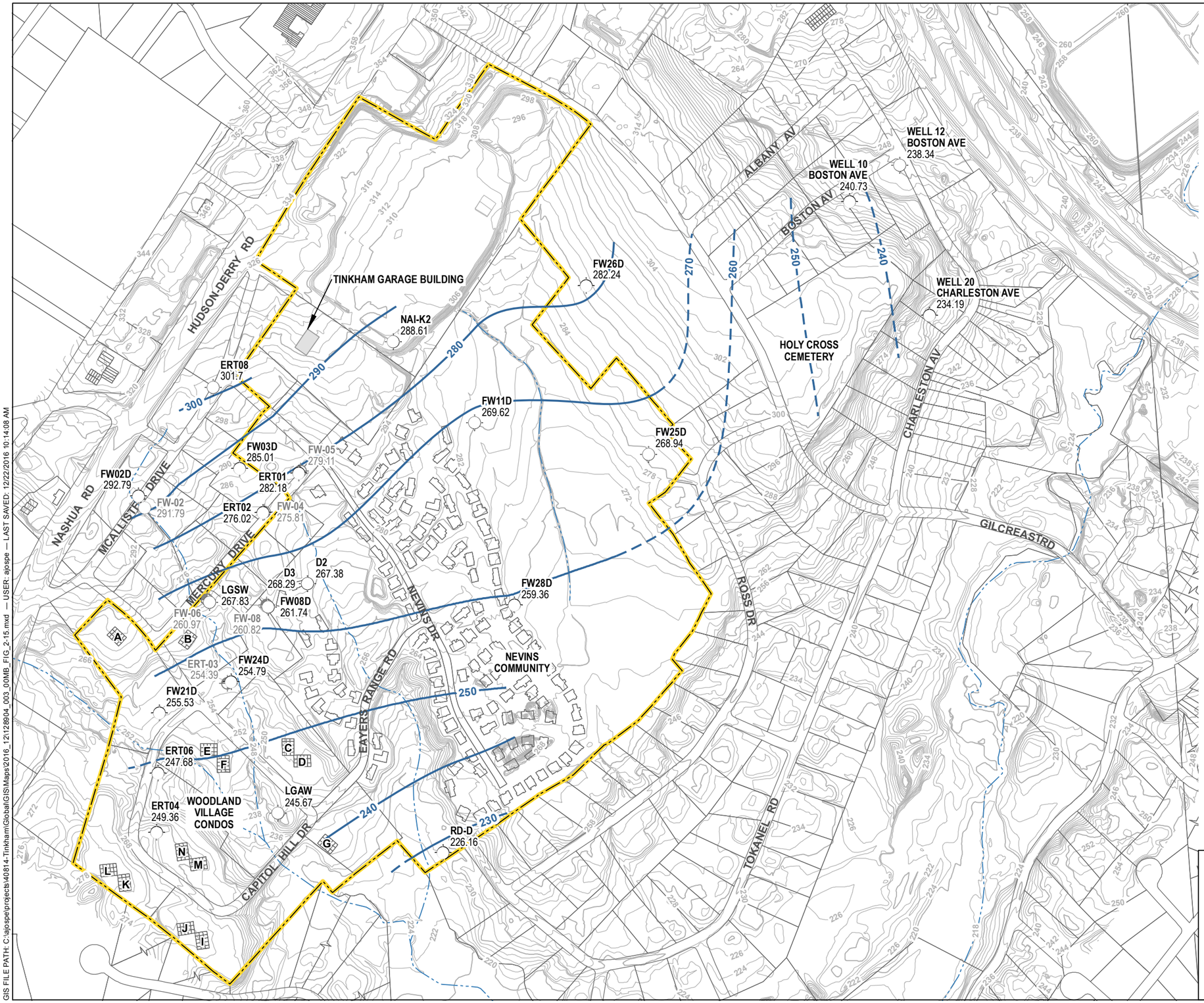
TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

OVERBURDEN GROUNDWATER CONTOURS

DECEMBER 2016

FIGURE 4

GIS FILE PATH: C:\ajospe\projects\40814-Tinkham\Global\GIS\Maps\2016_12\128904_003_00MB_FIG_2-15.mxd — USER: ajospe — LAST SAVED: 12/6/2016 3:15:26 PM



LEGEND

- BEDROCK MONITORING WELL
- FW-09 293.65 — WELL ID AND GROUNDWATER ELEVATION (OCT 2016)
- BEDROCK MONITORING WELL NOT USED IN GROUNDWATER ELEVATION CONTOURS
- BEDROCK GROUNDWATER ELEVATION CONTOUR, IN FEET, 10-FT INTERVAL (OCT 2016), DASHED WHERE INFERRED
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX
- STREAM
- GROUNDWATER MANAGEMENT ZONE
- PARCEL BOUNDARY

NOTES

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. GROUNDWATER ELEVATION MEASURED ON 18 AND 19 OCTOBER 2016.
3. GROUNDWATER ELEVATION AT FW-26D MEASURED ON 26 OCTOBER 2016. TOP OF CASING INFORMATION OBTAINED FROM 1986 RI TABLE 4-3.
4. TOPOGRAPHIC CONTOUR AND PARCEL ADDRESS SOURCE: TOWN OF LONDONDERRY GIS
5. PARCEL BOUNDARY AND ROAD CENTERLINE SOURCE: NH GRANIT GIS CLEARINGHOUSE (www.granit.unh.edu)
6. MONITORING WELLS SURVEYED BY CLD CONSULTING ENGINEERS, SEPTEMBER 2016. ELEVATION DATUM NGVD29.
7. FW02, FW04, FW05, FW06, D2, ERT03 NOT USED FOR GROUNDWATER ELEVATION CONTOURS. THE DEEPER WELL OF THESE BEDROCK PAIRS WAS SELECTED FOR CONTOURING GROUNDWATER ELEVATIONS AT THESE LOCATIONS.

N

0 500 1,000
SCALE IN FEET

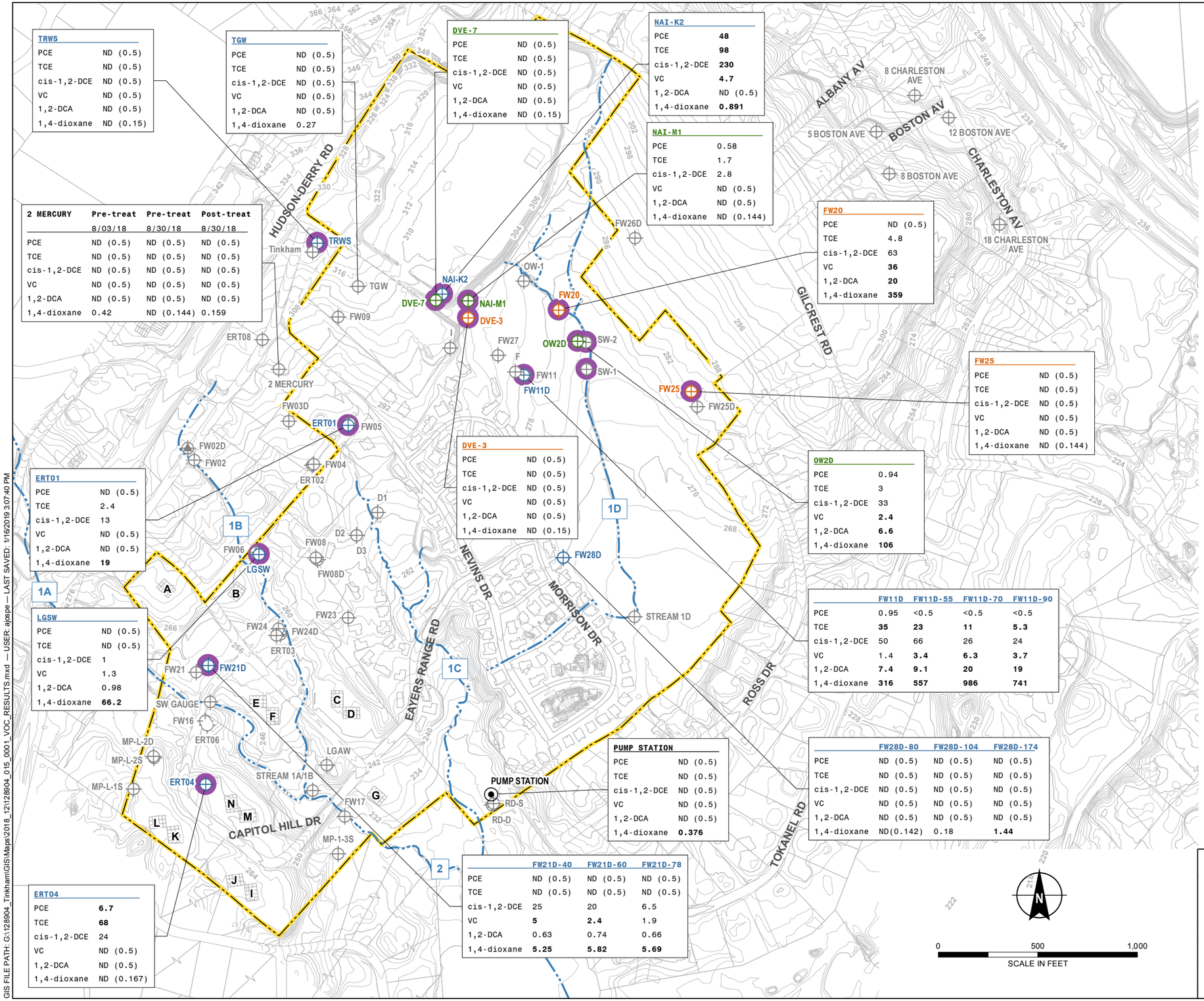
HALEY ALDRICH

TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

BEDROCK GROUNDWATER CONTOURS

DECEMBER 2016

FIGURE 5



TRWS

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	ND (0.5)
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	ND (0.15)

TGW

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	ND (0.5)
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	0.27

DVE-7

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	ND (0.5)
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	ND (0.15)

NAI-K2

PCE	**48**
TCE	**98**
cis-1,2-DCE	**230**
VC	**4.7**
1,2-DCA	ND (0.5)
1,4-dioxane	**0.891**

NAI-M1

PCE	0.58
TCE	1.7
cis-1,2-DCE	2.8
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	ND (0.144)

FW20

PCE	ND (0.5)
TCE	4.8
cis-1,2-DCE	63
VC	**36**
1,2-DCA	**20**
1,4-dioxane	**359**

FW25

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	ND (0.5)
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	ND (0.144)

2 MERCURY	Pre-treat 8/03/18	Pre-treat 8/30/18	Post-treat 8/30/18
PCE	ND (0.5)	ND (0.5)	ND (0.5)
TCE	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-DCE	ND (0.5)	ND (0.5)	ND (0.5)
VC	ND (0.5)	ND (0.5)	ND (0.5)
1,2-DCA	ND (0.5)	ND (0.5)	ND (0.5)
1,4-dioxane	0.42	ND (0.144)	0.159

ERT01

PCE	ND (0.5)
TCE	2.4
cis-1,2-DCE	13
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	**19**

DVE-3

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	ND (0.5)
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	ND (0.15)

OW2D

PCE	0.94
TCE	3
cis-1,2-DCE	33
VC	**2.4**
1,2-DCA	**6.6**
1,4-dioxane	**106**

LGSW

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	1
VC	1.3
1,2-DCA	0.98
1,4-dioxane	**66.2**

	FW11D	FW11D-55	FW11D-70	FW11D-90
PCE	0.95	<0.5	<0.5	<0.5
TCE	**35**	**23**	**11**	**5.3**
cis-1,2-DCE	50	66	26	24
VC	1.4	**3.4**	**6.3**	**3.7**
1,2-DCA	**7.4**	**9.1**	**20**	**19**
1,4-dioxane	**316**	**557**	**986**	**741**

PUMP STATION

PCE	ND (0.5)
TCE	ND (0.5)
cis-1,2-DCE	ND (0.5)
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	**0.376**

	FW28D-80	FW28D-104	FW28D-174
PCE	ND (0.5)	ND (0.5)	ND (0.5)
TCE	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-DCE	ND (0.5)	ND (0.5)	ND (0.5)
VC	ND (0.5)	ND (0.5)	ND (0.5)
1,2-DCA	ND (0.5)	ND (0.5)	ND (0.5)
1,4-dioxane	ND(0.142)	0.18	**1.44**

	FW21D-40	FW21D-60	FW21D-78
PCE	ND (0.5)	ND (0.5)	ND (0.5)
TCE	ND (0.5)	ND (0.5)	ND (0.5)
cis-1,2-DCE	25	20	6.5
VC	**5**	**2.4**	1.9
1,2-DCA	0.63	0.74	0.66
1,4-dioxane	**5.25**	**5.82**	**5.69**

ERT04

PCE	**6.7**
TCE	**68**
cis-1,2-DCE	24
VC	ND (0.5)
1,2-DCA	ND (0.5)
1,4-dioxane	ND (0.167)

LEGEND

- OVERBURDEN MONITORING WELL
- OVERBURDEN/SHALLOW BEDROCK MONITORING WELL
- BEDROCK MONITORING WELL
- WELL NOT MEASURED FOR VOCs
- TAP WATER SAMPLE
- SAMPLING LOCATION CURRENTLY PART OF THE MONITORING PROGRAM
- 1D — STREAM WITH DESIGNATION
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX
- GROUNDWATER MANAGEMENT ZONE

FW20	
PCE	ND (0.5)
TCE	4.8
cis-1,2-DCE	63
VC	**36**
1,2-DCA	**20**
1,4-dioxane	**359**

WELL ID

TETRACHLOROETHENE (AGQS = 5)
TRICHLOROETHENE (AGQS = 5)
cis-1,2-DICHLOROETHENE (AGQS = 70)
VINYL CHLORIDE (AGQS = 2)
1,2-DICHLOROETHANE (AGQS = 5)
1,4-DIOXANE (AGQS = 0.32)

NOTES

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

2. WELL LOCATIONS SURVEYED IN 2016, SOME OLDER WELLS WERE DIGITIZED FROM A DRAWING TITLED "MONITORING LOCATIONS AND TOTAL VOLATILE ORGANIC CONCENTRATIONS, MAY 2008" BY CANNONS ENGINEERING, ROUX ASSOCIATES, INC.

3. TOPOGRAPHIC CONTOUR AND PARCEL ADDRESS SOURCE: TOWN OF LONDONDERRY GIS

4. PARCEL BOUNDARY AND ROAD CENTERLINE SOURCE: NH GRANIT GIS CLEARINGHOUSE (www.granit.unh.edu)

5. SAMPLES COLLECTED IN MAY 2018, EXCEPT FW25, PUMP STATION, DISCRETE DEPTHS OF FW11D (SAMPLED JUNE 2018), AND TGW AND 2 MERCURY (SAMPLED IN AUGUST 2018). SAMPLES COLLECTED BY EST ASSOCIATES OR HALEY & ALDRICH, INC. ALL SAMPLES ANALYZED BY ALPHA ANALYTICAL.

6. ND(0.5) = NOT DETECTED, NUMBER IN PARENTHESES IS LABORATORY REPORTING LIMIT.

7. RESULTS POSTED IN PARTS PER BILLION (PPB).

8. **BOLDED** RESULTS EXCEED NH AMBIENT GROUNDWATER QUALITY STANDARDS (AGQS).

9. VOCs REPORTED HISTORICALLY HAVE EXCEEDED AGQS. SEE TABLE IV FOR A COMPLETE LIST OF DETECTED VOCs IN MAY 2018.

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

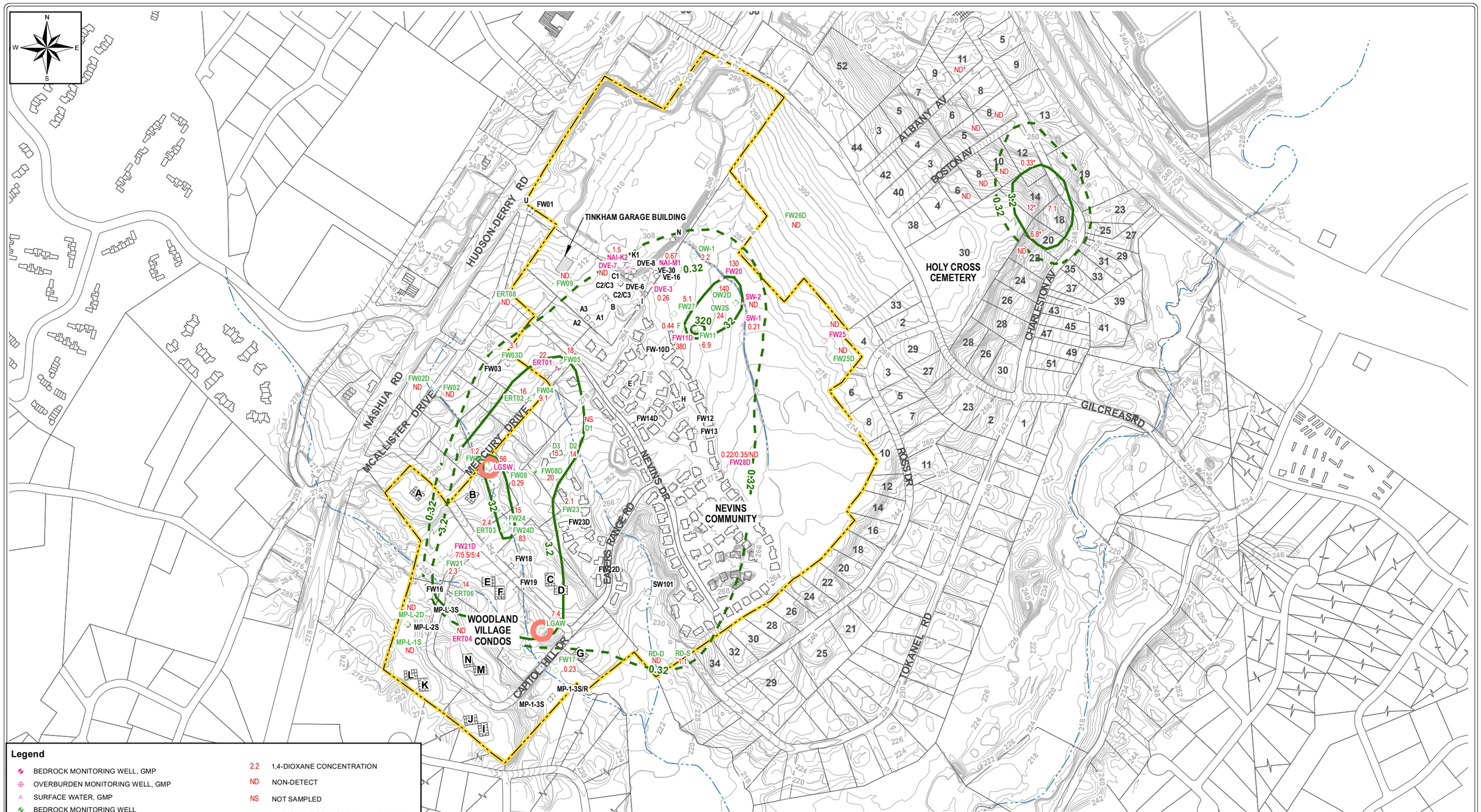
TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

GMP MONITORING LOCATIONS AND VOLATILE ORGANIC COMPOUND RESULTS (MAY-JUNE 2018)

JANUARY 2019

FIGURE 6

GIS FILE PATH: G:\128904_Tinkham\GIS\Maps\2018_12\128904_015_0001_VOC_RESULTS.mxd — USER: ajcspe — LAST SAVED: 1/16/2019 3:07:40 PM



Legend

- BEDROCK MONITORING WELL, GMP
- OVERBURDEN MONITORING WELL, GMP
- SURFACE WATER, GMP
- BEDROCK MONITORING WELL
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL NOT LOCATED IN 2016
- OVERBURDEN MONITORING WELL NOT LOCATED IN 2016
- SURFACE WATER SAMPLING LOCATION
- FORMER WATER SUPPLY WELL
- GROUNDWATER MANAGEMENT ZONE
- PARCEL BOUNDARY
- STREAM
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX

- 2.2 1,4-DIOXANE CONCENTRATION
- ND NON-DETECT
- NS NOT SAMPLED
- 10 1,4-DIOXANE CONTOUR LINE WITH VALUE (DASHED WHERE INFERRED)

NOTES
1. All dimensions and locations are approximate.
2. Results are in micrograms per liter (ug/L).
3. Results marked with an asterisk (*) are from residential wells sampled in 2015 and subsequently connected to municipal water.

SCALE: 600 300 0 600 Feet

PROJECT: Tinkhams Garage

CLIENT NAME:

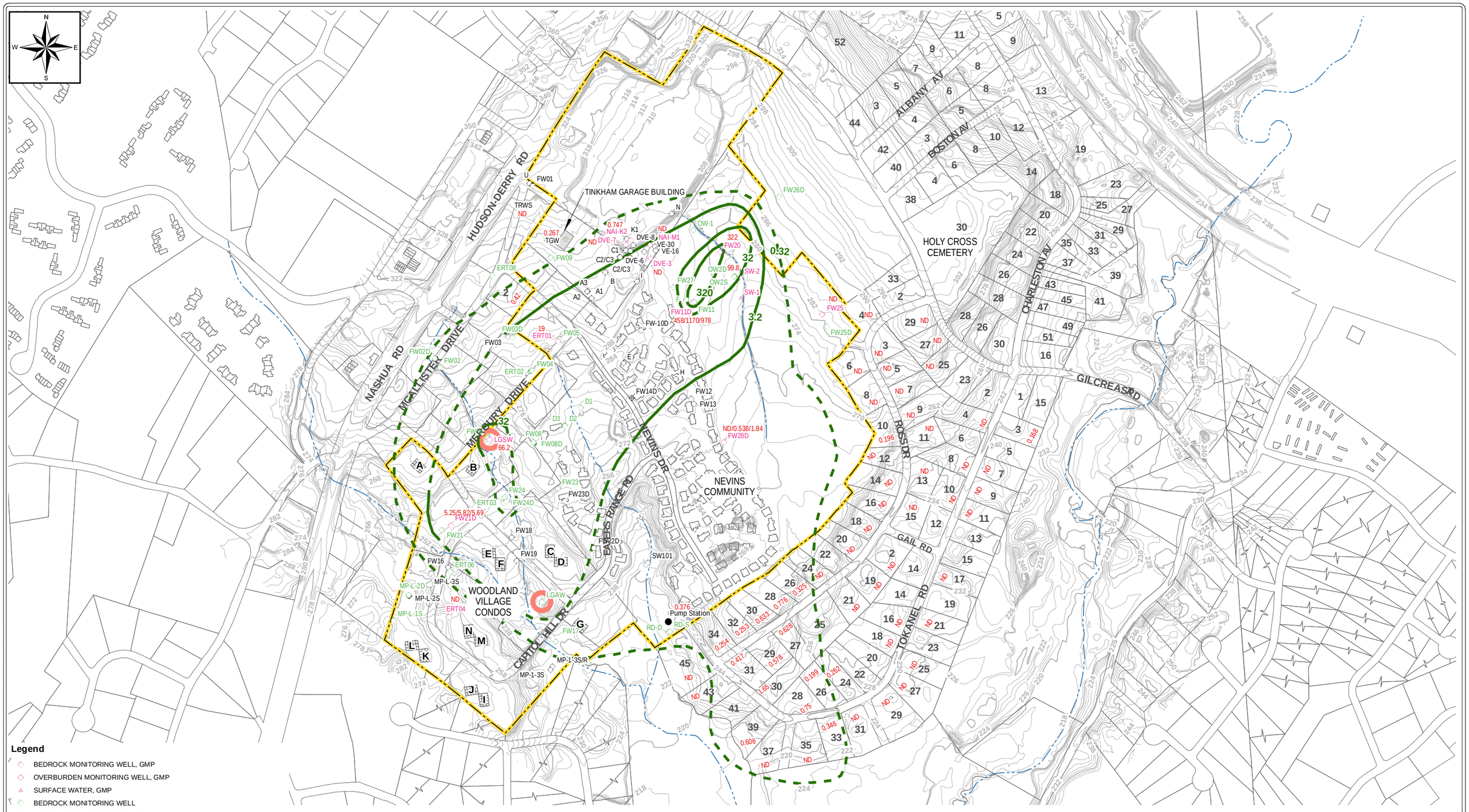
TITLE: 1,4-DIOXANE CONCENTRATIONS IN GROUNDWATER AND SURFACE WATER (2016)

WESTON SOLUTIONS SM

DATE: 7/17/2019

FIGURE #: 7

FILE: P:\Tinkhams_Garage\GIS\MXD\2019_07\24303_TG_GW_SW_Dioxane_Concen_2016.mxd 2:08:39 PM 7/25/2019 heatonj



Legend

- BEDROCK MONITORING WELL, GMP
- OVERBURDEN MONITORING WELL, GMP
- SURFACE WATER, GMP
- BEDROCK MONITORING WELL
- OVERBURDEN MONITORING WELL
- BEDROCK MONITORING WELL NOT LOCATED IN 2016
- OVERBURDEN MONITORING WELL NOT LOCATED IN 2016
- SURFACE WATER SAMPLING LOCATION
- FORMER WATER SUPPLY WELL
- GROUNDWATER MANAGEMENT ZONE
- PARCEL BOUNDARY
- STREAM
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX

- 2.2 — 1,4-DIOXANE CONCENTRATION
- ND — NON-DETECT
- NS — NOT SAMPLED
- 10 — 1,4-DIOXANE CONTOUR LINE WITH VALUE (DASHED WHERE INFERRED)

NOTES
1. All dimensions and locations are approximate.
2. Results are in micrograms per liter (ug/L).
3. Some locations only sampled once between May 2018 and January 2019. If a location was sampled more than once during that time, result listed is from the most recent sample collected.

SCALE: 600 300 0 600 Feet

TITLE: 1,4-DIOXANE CONCENTRATIONS IN GROUNDWATER (MAY 2018-JANUARY 2019)

PROJECT: Tinkhams Garage

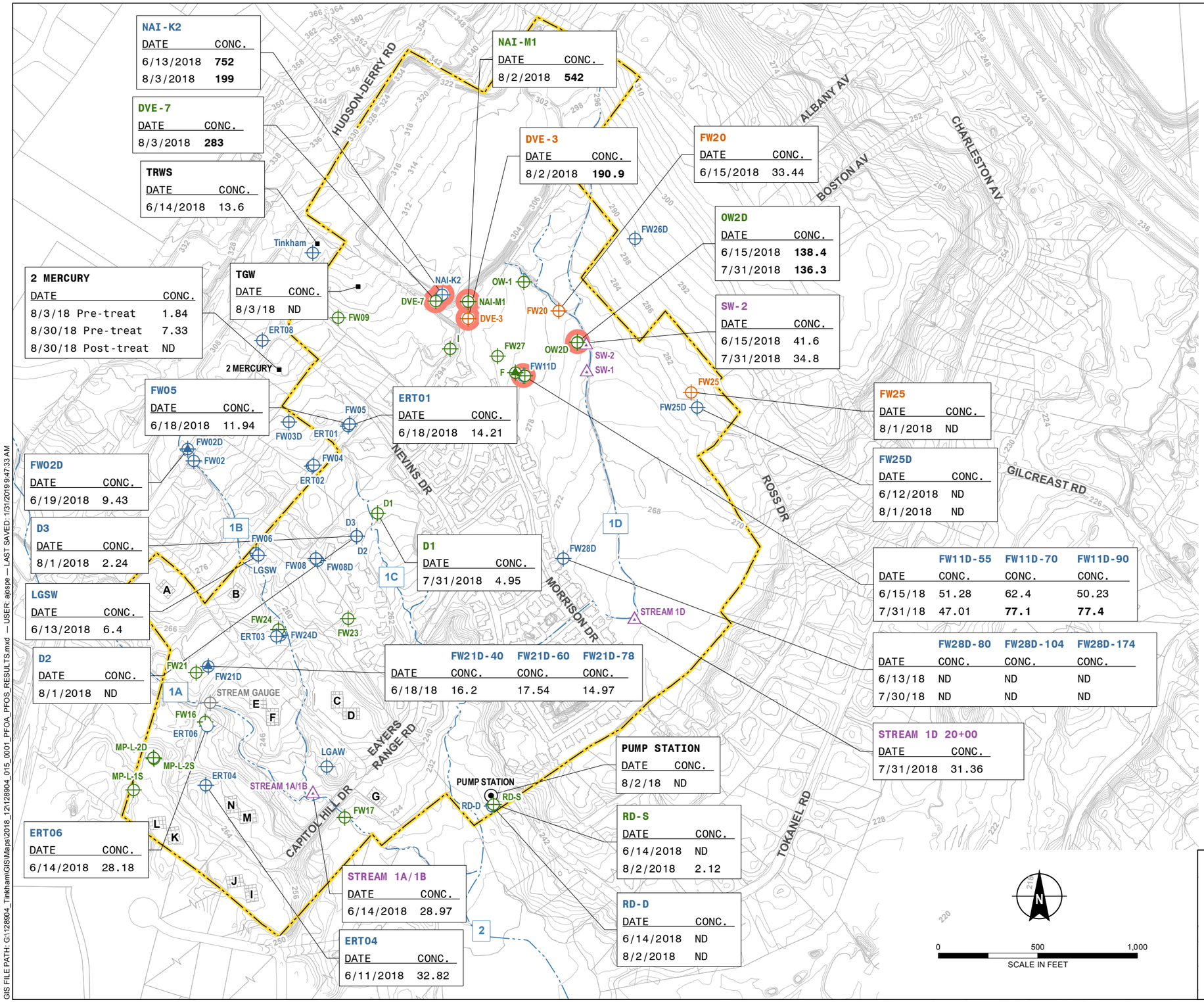
CLIENT NAME:

WESTON SOLUTIONS SM

DATE: 7/17/2019

FIGURE #: 8

FILE: P:\Tinkhams_Garage\GIS\MXD\2019_07\24308_TG_GW_SW_Dioxane_Concen_2018_2019.mxd 3:55:30 PM 9/23/2019 gardnerj



LEGEND

- OVERBURDEN MONITORING WELL
- OVERBURDEN/SHALLOW BEDROCK WELL
- BEDROCK MONITORING WELL
- CURRENT OR FORMER RESIDENTIAL WELL
- SURFACE WATER SAMPLE
- TAP WATER SAMPLE
- STREAM GAUGE
- WELL EXCEEDS NHDES AGQS FOR PFOA + PFOS (70ppt)
- TOPOGRAPHIC CONTOUR IN FEET ABOVE MEAN SEA LEVEL, 2-FT INTERVAL, 10-FT INDEX
- STREAM
- 2 STREAM DESIGNATION
- GROUNDWATER MANAGEMENT ZONE

NAI-K2
706

WELL ID
TOTAL PFOS + PFOA (ppt)
(**BOLDED** RESULTS EXCEED AGQS)

NOTES

1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
2. WELL LOCATIONS SURVEYED IN 2016; SOME OLDER WELLS WERE DIGITIZED FROM A DRAWING TITLED "MONITORING LOCATIONS AND TOTAL VOLATILE ORGANIC CONCENTRATIONS, MAY 2008" BY CANNONS ENGINEERING, ROUX ASSOCIATES, INC.
3. TOPOGRAPHIC CONTOUR AND PARCEL ADDRESS SOURCE: TOWN OF LONDONDERRY GIS
4. PARCEL BOUNDARY AND ROAD CENTERLINE SOURCE: NH GRANIT GIS CLEARINGHOUSE (www.granit.unh.edu)
5. STREAM ALIGNMENT VERIFIED BY HANDHELD GPS IN JULY 2018.
6. JULY/AUGUST 2018 PFAS SAMPLES COLLECTED BY EASTERN ANALYTICAL, INC. AND ANALYZED BY ALPHA ANALYTICAL.
7. NHDES AGQS FOR PFOA + PFOS = 70 ppt
8. ND = NOT DETECTED ABOVE LABORATORY REPORTING LIMITS

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

TINKHAM GARAGE SITE
LONDONDERRY, NEW HAMPSHIRE

PFOA + PFOS RESULTS (JUNE - SEPTEMBER 2018)

JANUARY 2019

FIGURE 9

GIS FILE PATH: G:\128904_Tinkham\GIS\Maps\2018_12\128904_015_0001_PFOA_PFOS_RESULTS.mxd — USER: ajespe — LAST SAVED: 1/31/2019 9:47:33 AM

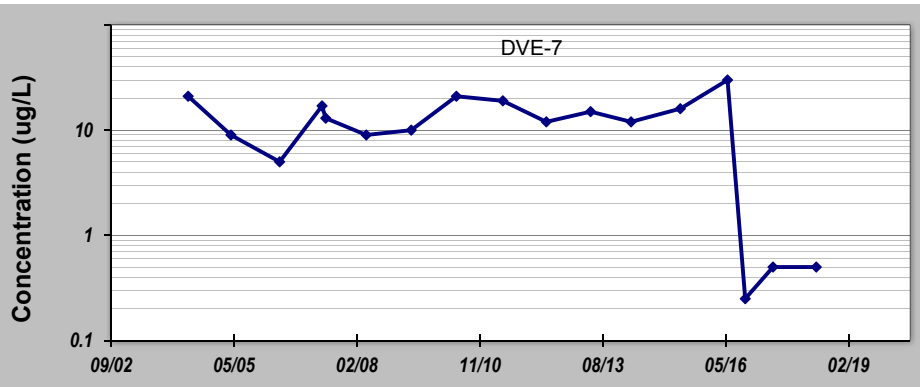
APPENDIX E. GROUNDWATER STATISTICAL EVALUATION

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID:	DVE-7						

Sampling Event	Sampling Date	PCE CONCENTRATION (ug/L)						
1	20-May-04	21						
2	3-May-05	9						
3	3-Jun-06	5						
4	14-May-07	17						
5	13-Jun-07	13						
6	8-May-08	9						
7	9-May-09	10						
8	11-May-10	21						
9	24-May-11	19						
10	12-May-12	12						
11	7-May-13	15						
12	1-Apr-14	12						
13	7-May-15	16						
14	25-May-16	30						
15	16-Oct-16	0.25						
16	30-May-17	0.5						
17	17-May-18	0.5						
18								
19								
20								
Coefficient of Variation:		0.66						
Mann-Kendall Statistic (S):		-18						
Confidence Factor:		75.5%						
Concentration Trend:		Stable						



Notes:

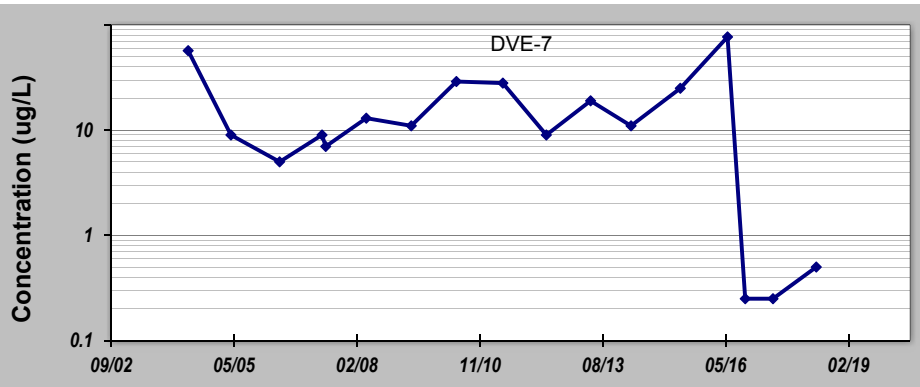
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID:	DVE-7						

Sampling Event	Sampling Date	TCE CONCENTRATION (ug/L)						
1	20-May-04	57						
2	3-May-05	9						
3	3-Jun-06	5						
4	14-May-07	9						
5	13-Jun-07	7						
6	8-May-08	13						
7	9-May-09	11						
8	11-May-10	29						
9	24-May-11	28						
10	12-May-12	9						
11	7-May-13	19						
12	1-Apr-14	11						
13	7-May-15	25						
14	25-May-16	77						
15	16-Oct-16	0.25						
16	30-May-17	0.25						
17	17-May-18	0.5						
18								
19								
20								
Coefficient of Variation:		1.14						
Mann-Kendall Statistic (S):		-11						
Confidence Factor:		65.7%						
Concentration Trend:		No Trend						



Notes:

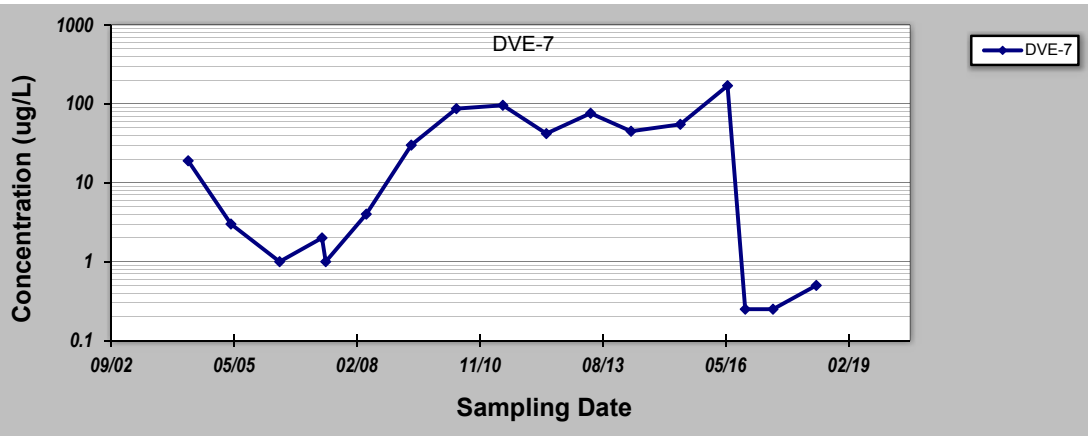
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	11-Jan-19	Job ID:	128904-013
Facility Name:	Haley & Aldrich, Inc.	Constituent:	cis-1,2-DCE
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID: DVE-7

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (ug/L)
1	20-May-04	19
2	3-May-05	3
3	3-Jun-06	1
4	14-May-07	2
5	13-Jun-07	1
6	8-May-08	4
7	9-May-09	30
8	11-May-10	87
9	24-May-11	96
10	12-May-12	42
11	7-May-13	76
12	1-Apr-14	45
13	7-May-15	55
14	25-May-16	170
15	16-Oct-16	0.25
16	30-May-17	0.25
17	17-May-18	0.5
18		
19		
20		
Coefficient of Variation:		1.28
Mann-Kendall Statistic (S):		12
Confidence Factor:		67.2%
Concentration Trend:		No Trend



Notes:

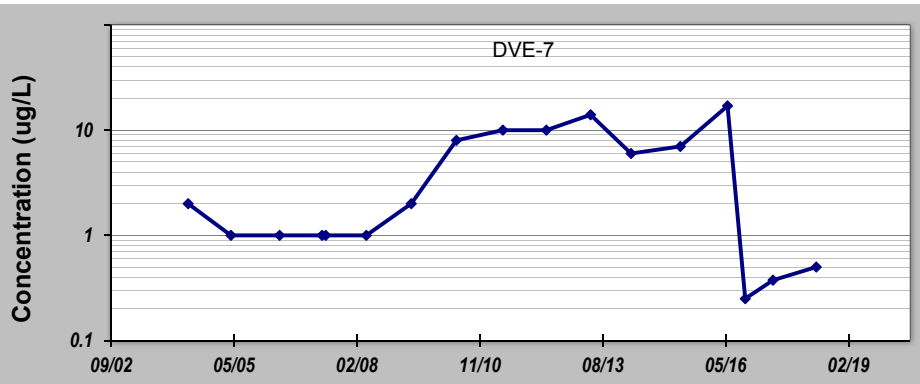
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID:	DVE-7						

Sampling Event	Sampling Date	1,1-DCA CONCENTRATION (ug/L)						
1	20-May-04	2						
2	3-May-05	1						
3	3-Jun-06	1						
4	14-May-07	1						
5	13-Jun-07	1						
6	8-May-08	1						
7	9-May-09	2						
8	11-May-10	8						
9	24-May-11	10						
10	12-May-12	10						
11	7-May-13	14						
12	1-Apr-14	6						
13	7-May-15	7						
14	25-May-16	17						
15	16-Oct-16	0.25						
16	30-May-17	0.375						
17	17-May-18	0.5						
18								
19								
20								
Coefficient of Variation:		1.10						
Mann-Kendall Statistic (S):		14						
Confidence Factor:		70.1%						
Concentration Trend:		No Trend						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
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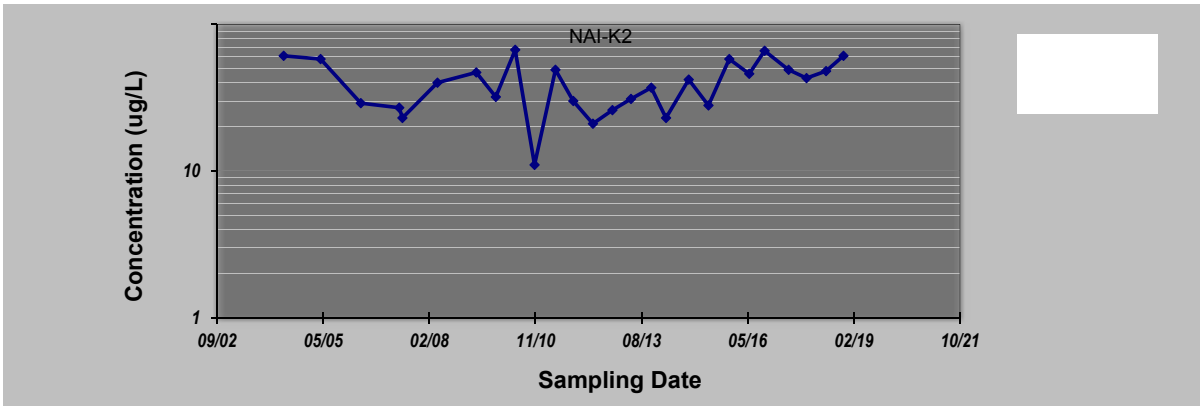
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	NAI-K2						

Sampling Event	Sampling Date	PCE CONCENTRATION (ug/L)						
1	20-May-04	61						
2	3-May-05	58						
3	17-May-06	29						
4	14-May-07	27						
5	13-Jun-07	23						
6	8-May-08	40						
7	9-May-09	47						
8	9-Nov-09	32						
9	11-May-10	67						
10	9-Nov-10	11						
11	25-May-11	49						
12	9-Nov-11	30						
13	12-May-12	21						
14	12-Nov-12	26						
15	6-May-13	31						
16	13-Nov-13	37						
17	1-Apr-14	23						
18	1-Nov-14	42						
19	6-May-15	28						
20	18-Nov-15	58						
21	24-May-16	46						
22	16-Oct-16	66						
23	30-May-17	49						
24	15-Nov-17	43						
25	18-May-18	48						
26	29-Oct-18	61						
27								
28								
29								
30								
Coefficient of Variation:		0.38						
Mann-Kendall Statistic (S):		55						
Confidence Factor:		88.2%						
Concentration Trend:		No Trend						



Notes:

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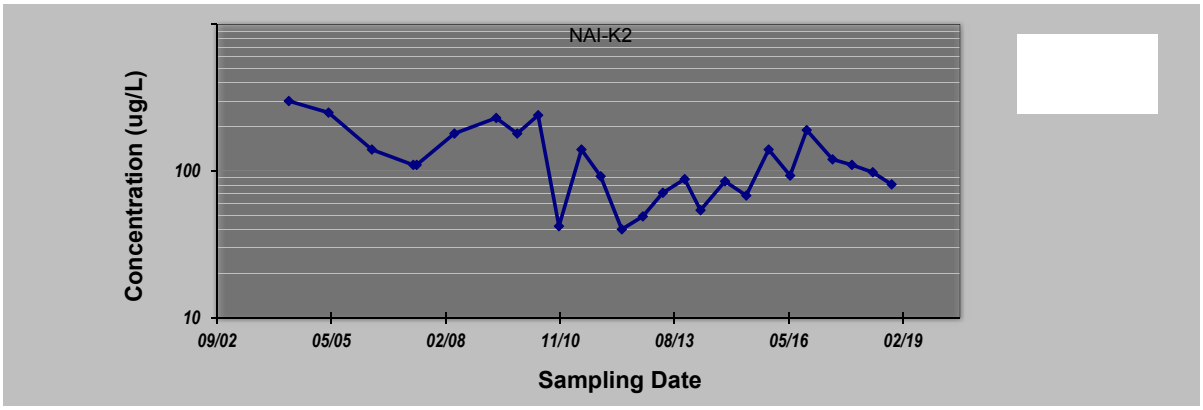
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	NAI-K2						

Sampling Event	Sampling Date	TCE CONCENTRATION (ug/L)						
1	20-May-04	300						
2	3-May-05	250						
3	17-May-06	140						
4	14-May-07	110						
5	13-Jun-07	110						
6	8-May-08	180						
7	9-May-09	230						
8	9-Nov-09	180						
9	11-May-10	240						
10	9-Nov-10	42						
11	25-May-11	140						
12	9-Nov-11	92						
13	12-May-12	40						
14	12-Nov-12	49						
15	6-May-13	71						
16	13-Nov-13	88						
17	1-Apr-14	54						
18	1-Nov-14	85						
19	6-May-15	68						
20	18-Nov-15	140						
21	24-May-16	93						
22	16-Oct-16	190						
23	30-May-17	120						
24	15-Nov-17	110						
25	17-May-18	98						
26	29-Oct-18	81						
27								
28								
29								
30								
Coefficient of Variation:		0.55						
Mann-Kendall Statistic (S):		-86						
Confidence Factor:		97.0%						
Concentration Trend:		Decreasing						



Notes:

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4. Assumption: Non-detect (ND) values are set at half of their detection limit.

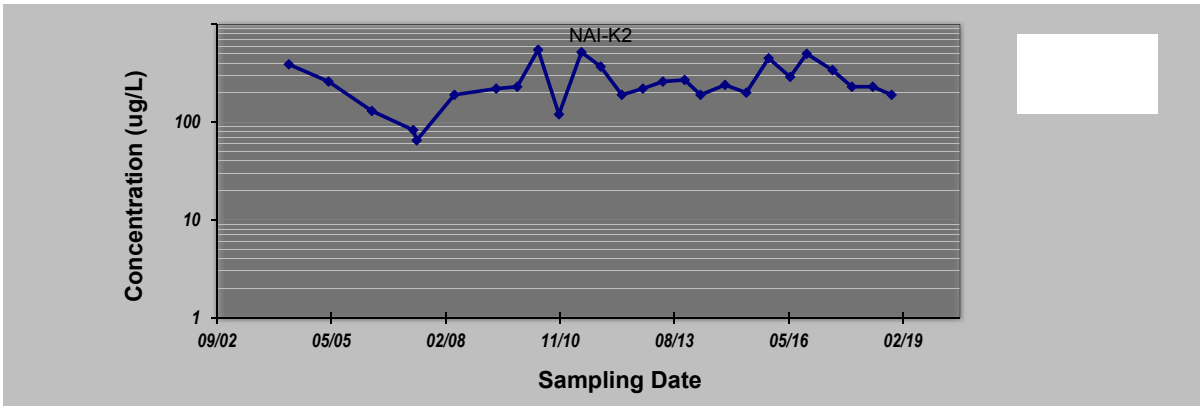
"--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	NAI-K2						

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (ug/L)						
1	20-May-04	390						
2	3-May-05	260						
3	17-May-06	130						
4	14-May-07	83						
5	13-Jun-07	65						
6	8-May-08	190						
7	9-May-09	220						
8	9-Nov-09	230						
9	11-May-10	550						
10	9-Nov-10	120						
11	25-May-11	520						
12	9-Nov-11	370						
13	12-May-12	190						
14	12-Nov-12	220						
15	6-May-13	260						
16	13-Nov-13	270						
17	1-Apr-14	190						
18	1-Nov-14	240						
19	6-May-15	200						
20	18-Nov-15	450						
21	24-May-16	290						
22	16-Oct-16	500						
23	30-May-17	340						
24	15-Nov-17	230						
25	17-May-18	230						
26	29-Oct-18	190						
27								
28								
29								
30								
Coefficient of Variation:		0.48						
Mann-Kendall Statistic (S):		48						
Confidence Factor:		84.8%						
Concentration Trend:		No Trend						



Notes:

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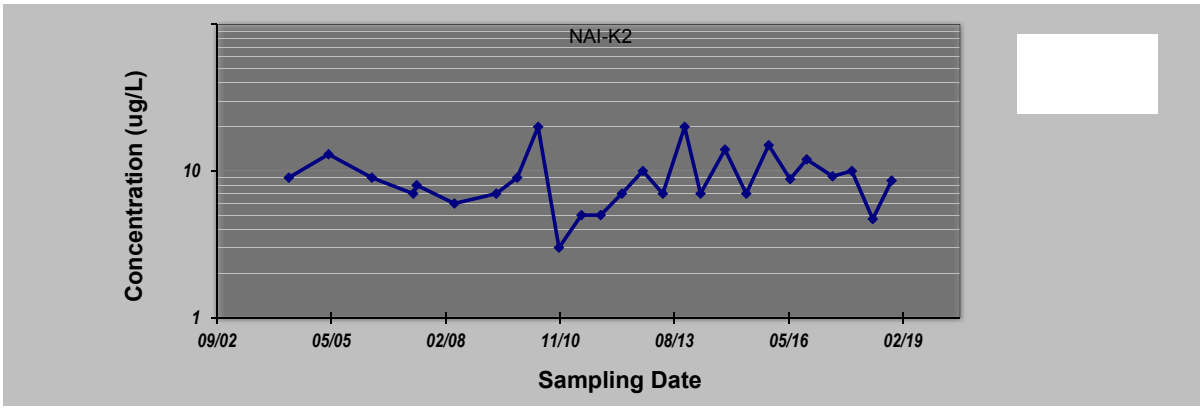
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
"--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	NAI-K2						

Sampling Event	Sampling Date	VINYL CHLORIDE CONCENTRATION (ug/L)						
1	20-May-04	9						
2	3-May-05	13						
3	17-May-06	9						
4	14-May-07	7						
5	13-Jun-07	8						
6	8-May-08	6						
7	9-May-09	7						
8	9-Nov-09	9						
9	11-May-10	20						
10	9-Nov-10	3						
11	25-May-11	5						
12	9-Nov-11	5						
13	12-May-12	7						
14	12-Nov-12	10						
15	6-May-13	7						
16	13-Nov-13	20						
17	1-Apr-14	7						
18	1-Nov-14	14						
19	6-May-15	7						
20	18-Nov-15	15						
21	24-May-16	8.8						
22	16-Oct-16	12						
23	30-May-17	9.2						
24	15-Nov-17	10						
25	17-May-18	4.7						
26	29-Oct-18	8.6						
27								
28								
29								
30								
Coefficient of Variation:		0.46						
Mann-Kendall Statistic (S):		18						
Confidence Factor:		64.5%						
Concentration Trend:		No Trend						



Notes:

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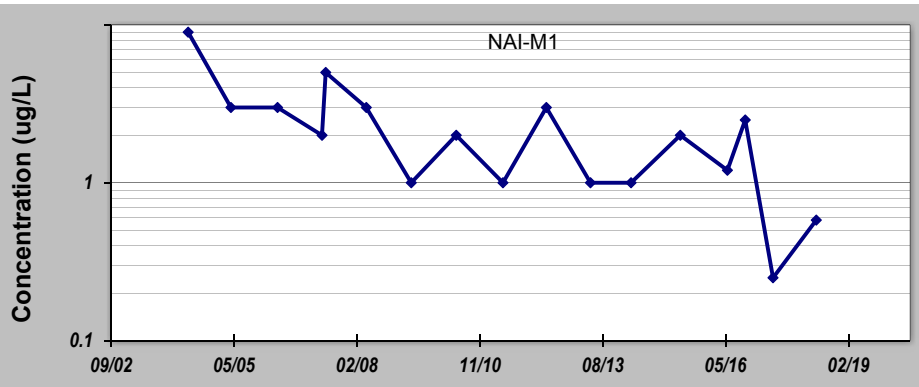
"--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID:	NAI-M1						

Sampling Event	Sampling Date	PCE CONCENTRATION (ug/L)						
1	20-May-04	9						
2	3-May-05	3						
3	17-May-06	3						
4	14-May-07	2						
5	13-Jun-07	5						
6	8-May-08	3						
7	9-May-09	1						
8	10-May-10	2						
9	25-May-11	1						
10	12-May-12	3						
11	6-May-13	1						
12	1-Apr-14	1						
13	7-May-15	2						
14	24-May-16	1.2						
15	16-Oct-16	2.5						
16	30-May-17	0.25						
17	17-May-18	0.58						
18								
19								
20								
Coefficient of Variation:		0.87						
Mann-Kendall Statistic (S):		-69						
Confidence Factor:		99.8%						
Concentration Trend:		Decreasing						



Notes:

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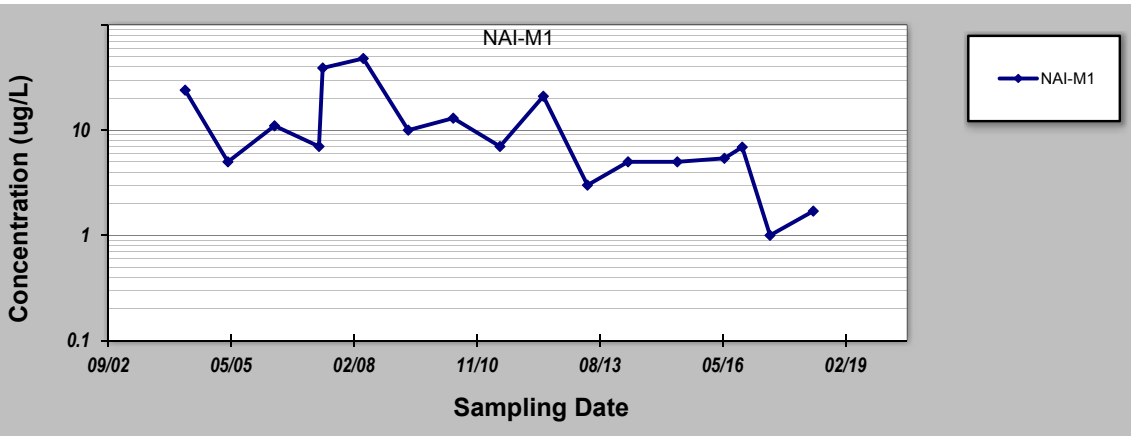
5. "--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID:	NAI-M1						

Sampling Event	Sampling Date	TCE CONCENTRATION (ug/L)						
1	20-May-04	24						
2	3-May-05	5						
3	17-May-06	11						
4	14-May-07	7						
5	13-Jun-07	39						
6	8-May-08	48						
7	9-May-09	10						
8	10-May-10	13						
9	25-May-11	7						
10	12-May-12	21						
11	6-May-13	3						
12	1-Apr-14	5						
13	7-May-15	5						
14	24-May-16	5.4						
15	16-Oct-16	6.9						
16	30-May-17	1						
17	17-May-18	1.7						
18								
19								
20								
Coefficient of Variation:		1.06						
Mann-Kendall Statistic (S):		-60						
Confidence Factor:		99.3%						
Concentration Trend:		Decreasing						



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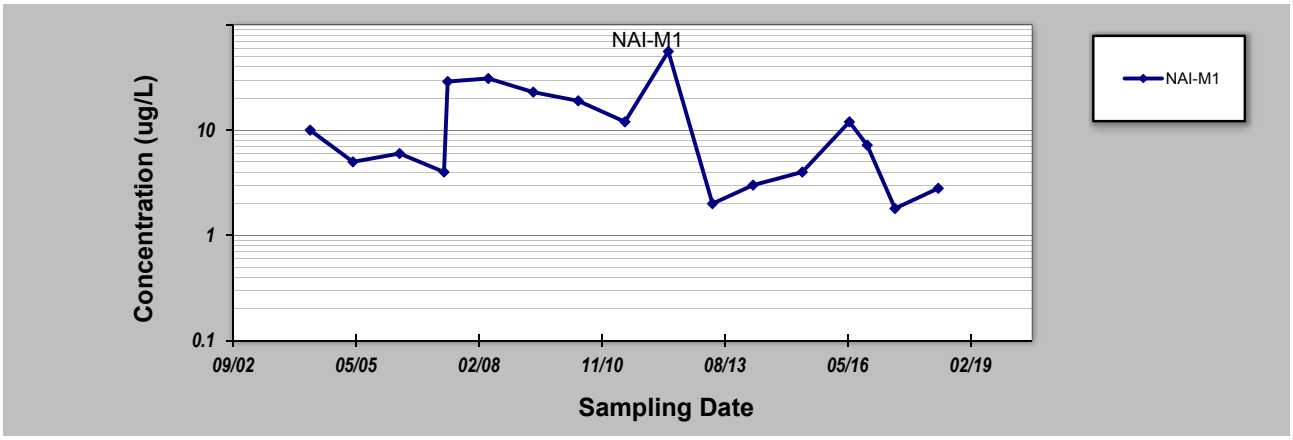
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID:	NAI-M1						

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (ug/L)						
1	20-May-04	10						
2	3-May-05	5						
3	17-May-06	6						
4	14-May-07	4						
5	13-Jun-07	29						
6	8-May-08	31						
7	9-May-09	23						
8	10-May-10	19						
9	25-May-11	12						
10	12-May-12	56						
11	6-May-13	2						
12	1-Apr-14	3						
13	7-May-15	4						
14	24-May-16	12						
15	16-Oct-16	7.2						
16	30-May-17	1.8						
17	17-May-18	2.8						
18								
19								
20								
Coefficient of Variation:		1.08						
Mann-Kendall Statistic (S):		-36						
Confidence Factor:		92.4%						
Concentration Trend:		Prob. Decreasing						



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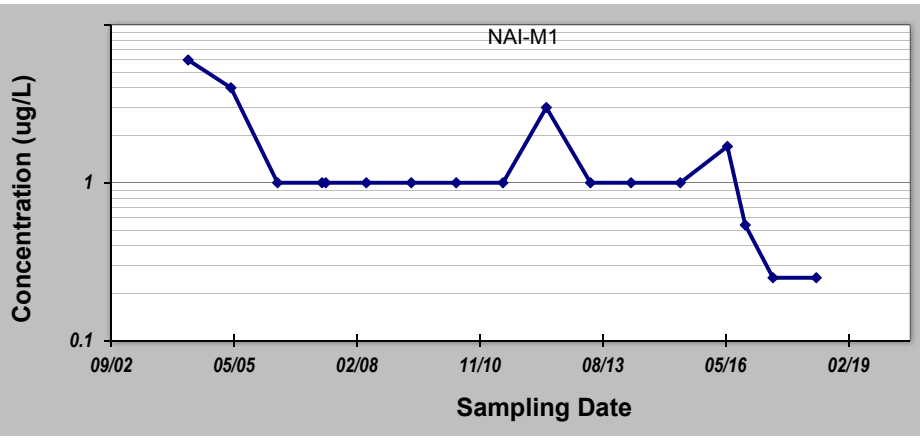
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID: **NAI-M1**

Sampling Event	Sampling Date	VINYL CHLORIDE CONCENTRATION (ug/L)
1	20-May-04	6
2	3-May-05	4
3	17-May-06	1
4	14-May-07	1
5	13-Jun-07	1
6	8-May-08	1
7	9-May-09	1
8	10-May-10	1
9	25-May-11	1
10	12-May-12	3
11	6-May-13	1
12	1-Apr-14	1
13	7-May-15	1
14	24-May-16	1.7
15	16-Oct-16	0.54
16	30-May-17	0.25
17	17-May-18	0.25
18		
19		
20		
Coefficient of Variation:		0.98
Mann-Kendall Statistic (S):		-56
Confidence Factor:		98.9%
Concentration Trend:		Decreasing



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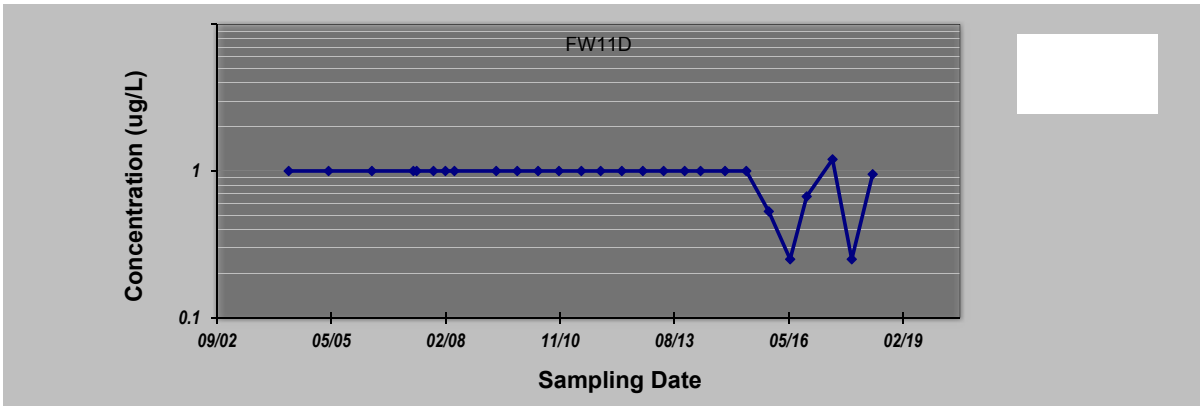
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW11D						

Sampling Event	Sampling Date	PCE CONCENTRATION (ug/L)						
1	19-May-04	1						
2	3-May-05	1						
3	17-May-06	1						
4	15-May-07	1						
5	13-Jun-07	1						
6	7-Nov-07	1						
7	19-Feb-08	1						
8	8-May-08	1						
9	9-May-09	1						
10	9-Nov-09	1						
11	10-May-10	1						
12	9-Nov-10	1						
13	24-May-11	1						
14	9-Nov-11	1						
15	12-May-12	1						
16	12-Nov-12	1						
17	13-May-13	1						
18	13-Nov-13	1						
19	1-Apr-14	1						
20	1-Nov-14	1						
21	6-May-15	1						
22	19-Nov-15	0.53						
23	24-May-16	0.25						
24	16-Oct-16	0.67						
25	30-May-17	1.2						
26	14-Nov-17	0.25						
27	16-May-18	0.95						
28								
29								
30								
Coefficient of Variation:		0.25						
Mann-Kendall Statistic (S):		-80						
Confidence Factor:		95.0%						
Concentration Trend:		Prob. Decreasing						



Notes:

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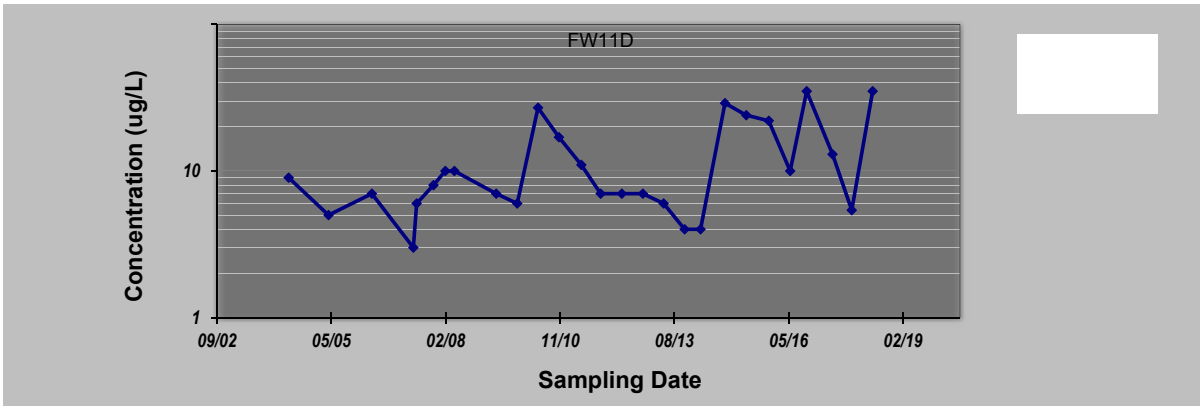
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW11D						

Sampling Event	Sampling Date	TCE CONCENTRATION (ug/L)						
1	19-May-04	9						
2	3-May-05	5						
3	17-May-06	7						
4	15-May-07	3						
5	13-Jun-07	6						
6	7-Nov-07	8						
7	19-Feb-08	10						
8	8-May-08	10						
9	9-May-09	7						
10	9-Nov-09	6						
11	10-May-10	27						
12	9-Nov-10	17						
13	24-May-11	11						
14	9-Nov-11	7						
15	12-May-12	7						
16	12-Nov-12	7						
17	13-May-13	6						
18	13-Nov-13	4						
19	1-Apr-14	4						
20	1-Nov-14	29						
21	6-May-15	24						
22	19-Nov-15	22						
23	24-May-16	10						
24	16-Oct-16	35						
25	30-May-17	13						
26	14-Nov-17	5.4						
27	16-May-18	35						
28								
29								
30								
Coefficient of Variation:		0.78						
Mann-Kendall Statistic (S):		85						
Confidence Factor:		96.0%						
Concentration Trend:		Increasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

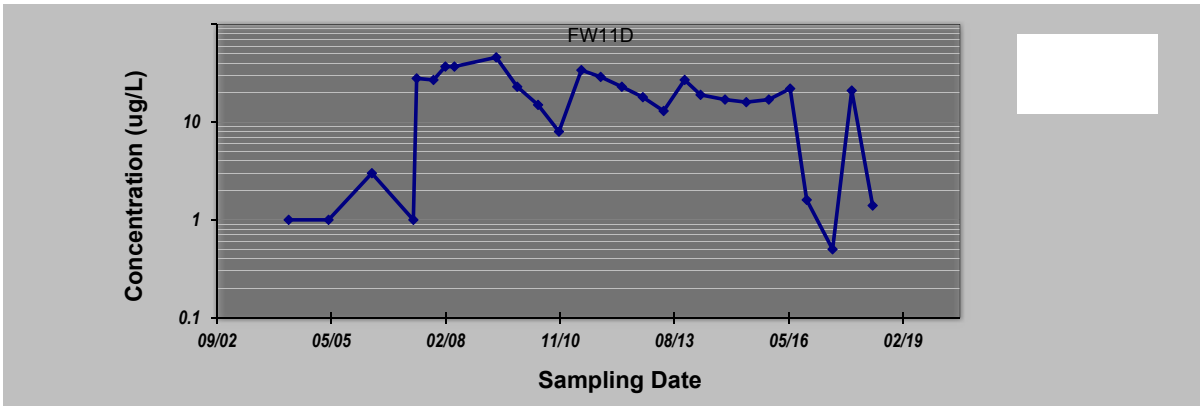
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: FW11D

Sampling Event	Sampling Date	VINYL CHLORIDE CONCENTRATION (ug/L)
1	19-May-04	1
2	3-May-05	1
3	17-May-06	3
4	15-May-07	1
5	13-Jun-07	28
6	7-Nov-07	27
7	19-Feb-08	37
8	8-May-08	37
9	9-May-09	46
10	9-Nov-09	23
11	10-May-10	15
12	9-Nov-10	8
13	24-May-11	34
14	9-Nov-11	29
15	12-May-12	23
16	12-Nov-12	18
17	13-May-13	13
18	13-Nov-13	27
19	1-Apr-14	19
20	1-Nov-14	17
21	6-May-15	16
22	19-Nov-15	17
23	24-May-16	22
24	16-Oct-16	1.6
25	30-May-17	0.5
26	14-Nov-17	21
27	16-May-18	1.4
28		
29		
30		
Coefficient of Variation:		0.71
Mann-Kendall Statistic (S):		-44
Confidence Factor:		81.4%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

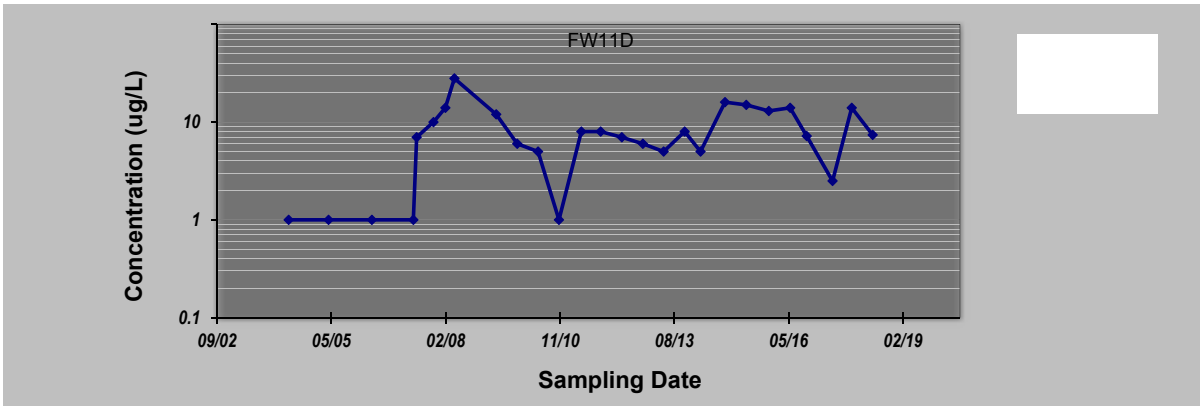
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: FW11D

Sampling Event	Sampling Date	1,2-DCA CONCENTRATION (ug/L)						
1	19-May-04	1						
2	3-May-05	1						
3	17-May-06	1						
4	15-May-07	1						
5	13-Jun-07	7						
6	7-Nov-07	10						
7	19-Feb-08	14						
8	8-May-08	28						
9	9-May-09	12						
10	9-Nov-09	6						
11	10-May-10	5						
12	9-Nov-10	1						
13	24-May-11	8						
14	9-Nov-11	8						
15	12-May-12	7						
16	12-Nov-12	6						
17	13-May-13	5						
18	13-Nov-13	8						
19	1-Apr-14	5						
20	1-Nov-14	16						
21	6-May-15	15						
22	19-Nov-15	13						
23	24-May-16	14						
24	16-Oct-16	7.2						
25	30-May-17	2.5						
26	14-Nov-17	14						
27	16-May-18	7.4						
28								
29								
30								
Coefficient of Variation:		0.71						
Mann-Kendall Statistic (S):		105						
Confidence Factor:		97.5%						
Concentration Trend:		Increasing						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

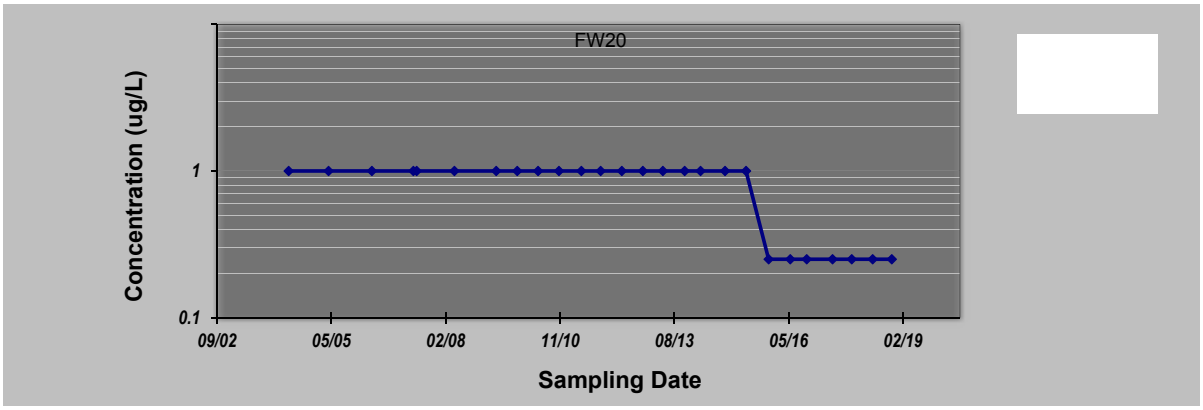
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: FW20

Sampling Event	Sampling Date	PCE CONCENTRATION (ug/L)						
1	19-May-04	1						
2	3-May-05	1						
3	17-May-06	1						
4	15-May-07	1						
5	13-Jun-07	1						
6	8-May-08	1						
7	9-May-09	1						
8	9-Nov-09	1						
9	10-May-10	1						
10	9-Nov-10	1						
11	24-May-11	1						
12	9-Nov-11	1						
13	12-May-12	1						
14	12-Nov-12	1						
15	6-May-13	1						
16	13-Nov-13	1						
17	1-Apr-14	1						
18	1-Nov-14	1						
19	4-May-15	1						
20	18-Nov-15	0.25						
21	25-May-16	0.25						
22	16-Oct-16	0.25						
23	30-May-17	0.25						
24	14-Nov-17	0.25						
25	16-May-18	0.25						
26	30-Oct-18	0.25						
27								
28								
29								
30								
Coefficient of Variation:		0.43						
Mann-Kendall Statistic (S):		-133						
Confidence Factor:		99.9%						
Concentration Trend:		Decreasing						



Notes:

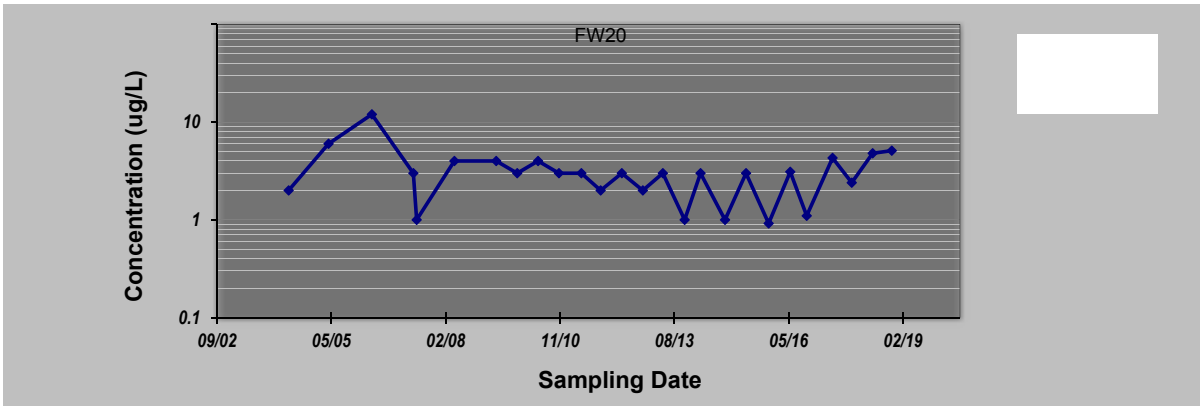
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit. Two concentrations are not nondetect.
5. "--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW20						

Sampling Event	Sampling Date	TCE CONCENTRATION (ug/L)						
1	19-May-04	2						
2	3-May-05	6						
3	17-May-06	12						
4	15-May-07	3						
5	13-Jun-07	1						
6	8-May-08	4						
7	9-May-09	4						
8	9-Nov-09	3						
9	10-May-10	4						
10	9-Nov-10	3						
11	24-May-11	3						
12	9-Nov-11	2						
13	12-May-12	3						
14	12-Nov-12	2						
15	6-May-13	3						
16	13-Nov-13	1						
17	1-Apr-14	3						
18	1-Nov-14	1						
19	4-May-15	3						
20	18-Nov-15	0.92						
21	25-May-16	3.1						
22	16-Oct-16	1.1						
23	30-May-17	4.3						
24	14-Nov-17	2.4						
25	16-May-18	4.8						
26	30-Oct-18	5.1						
27								
28								
29								
30								
Coefficient of Variation:		0.68						
Mann-Kendall Statistic (S):		-24						
Confidence Factor:		69.2%						
Concentration Trend:		Stable						



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

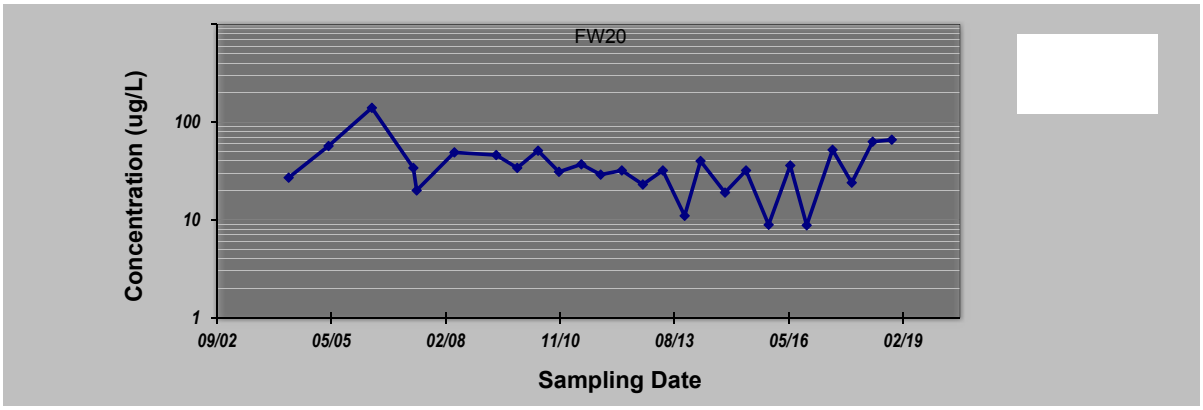
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: FW20

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (ug/L)
1	19-May-04	27
2	3-May-05	57
3	17-May-06	140
4	15-May-07	34
5	13-Jun-07	20
6	8-May-08	49
7	9-May-09	46
8	9-Nov-09	34
9	10-May-10	51
10	9-Nov-10	31
11	24-May-11	37
12	9-Nov-11	29
13	12-May-12	32
14	12-Nov-12	23
15	6-May-13	32
16	13-Nov-13	11
17	1-Apr-14	40
18	1-Nov-14	19
19	4-May-15	32
20	18-Nov-15	8.9
21	25-May-16	36
22	16-Oct-16	8.8
23	30-May-17	52
24	14-Nov-17	24
25	16-May-18	63
26	30-Oct-18	66
27		
28		
29		
30		
Coefficient of Variation:		0.67
Mann-Kendall Statistic (S):		-37
Confidence Factor:		78.4%
Concentration Trend:		Stable



Notes:

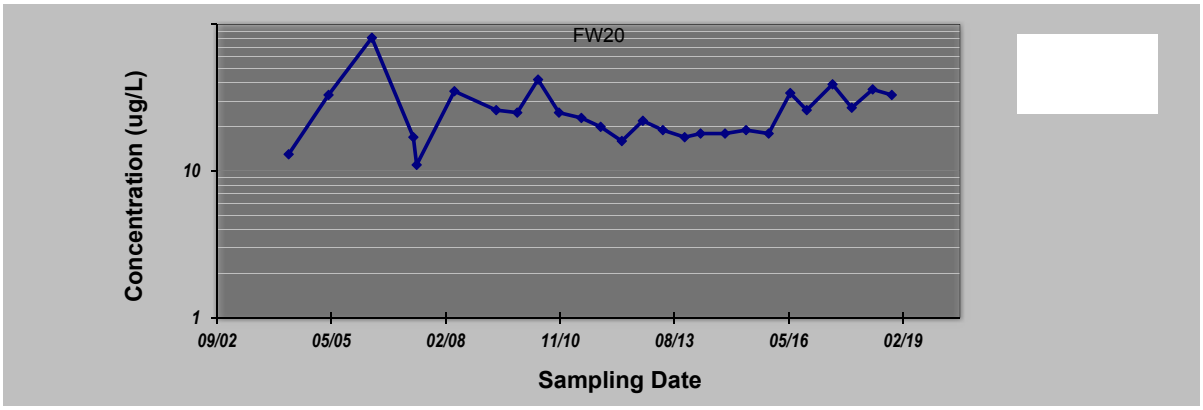
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW20						

Sampling Event	Sampling Date	VINYL CHLORIDE CONCENTRATION (ug/L)						
1	19-May-04	13						
2	3-May-05	33						
3	17-May-06	81						
4	15-May-07	17						
5	13-Jun-07	11						
6	8-May-08	35						
7	9-May-09	26						
8	9-Nov-09	25						
9	10-May-10	42						
10	9-Nov-10	25						
11	24-May-11	23						
12	9-Nov-11	20						
13	12-May-12	16						
14	12-Nov-12	22						
15	6-May-13	19						
16	13-Nov-13	17						
17	1-Apr-14	18						
18	1-Nov-14	18						
19	4-May-15	19						
20	18-Nov-15	18						
21	25-May-16	34						
22	16-Oct-16	26						
23	30-May-17	39						
24	14-Nov-17	27						
25	16-May-18	36						
26	30-Oct-18	33						
27								
28								
29								
30								
Coefficient of Variation:		0.52						
Mann-Kendall Statistic (S):		31						
Confidence Factor:		74.4%						
Concentration Trend:		No Trend						



Notes:

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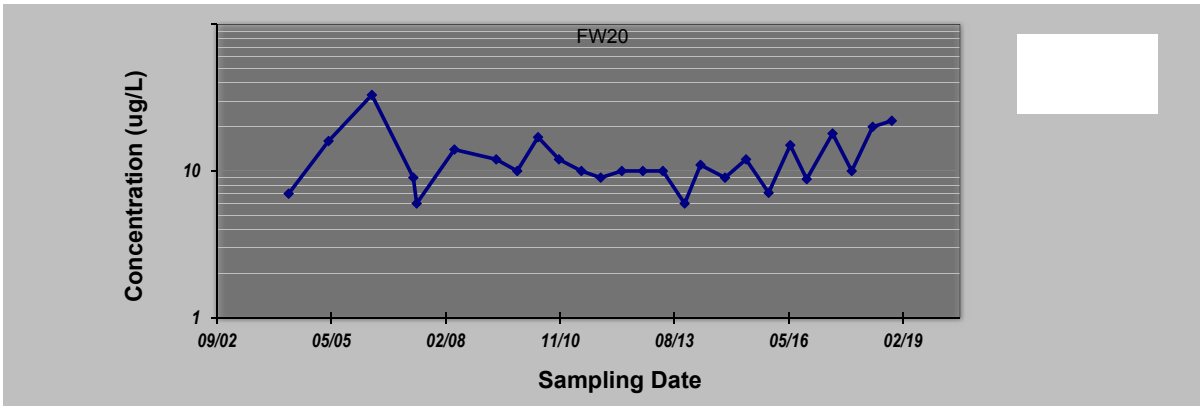
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW20						

Sampling Event	Sampling Date	1,2,-DCA CONCENTRATION (ug/L)						
1	19-May-04	7						
2	3-May-05	16						
3	17-May-06	33						
4	15-May-07	9						
5	13-Jun-07	6						
6	8-May-08	14						
7	9-May-09	12						
8	9-Nov-09	10						
9	10-May-10	17						
10	9-Nov-10	12						
11	24-May-11	10						
12	9-Nov-11	9						
13	12-May-12	10						
14	12-Nov-12	10						
15	6-May-13	10						
16	13-Nov-13	6						
17	1-Apr-14	11						
18	1-Nov-14	9						
19	4-May-15	12						
20	18-Nov-15	7.1						
21	25-May-16	15						
22	16-Oct-16	8.8						
23	30-May-17	18						
24	14-Nov-17	10						
25	16-May-18	20						
26	30-Oct-18	22						
27								
28								
29								
30								
Coefficient of Variation:		0.47						
Mann-Kendall Statistic (S):		29						
Confidence Factor:		73.0%						
Concentration Trend:		No Trend						



Notes:

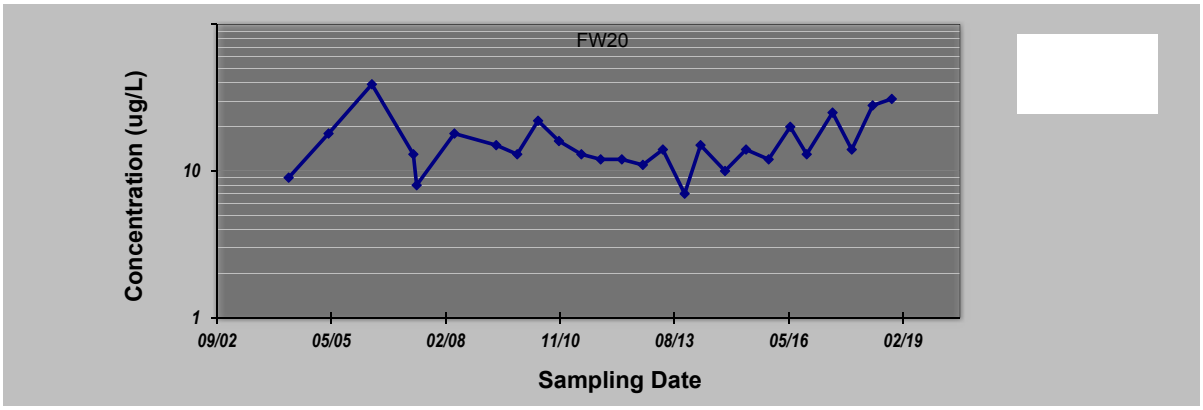
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW20						

Sampling Event	Sampling Date	1,1-DCA CONCENTRATION (ug/L)						
1	19-May-04	9						
2	3-May-05	18						
3	17-May-06	39						
4	15-May-07	13						
5	13-Jun-07	8						
6	8-May-08	18						
7	9-May-09	15						
8	9-Nov-09	13						
9	10-May-10	22						
10	9-Nov-10	16						
11	24-May-11	13						
12	9-Nov-11	12						
13	12-May-12	12						
14	12-Nov-12	11						
15	6-May-13	14						
16	13-Nov-13	7						
17	1-Apr-14	15						
18	1-Nov-14	10						
19	4-May-15	14						
20	18-Nov-15	12						
21	25-May-16	20						
22	16-Oct-16	13						
23	30-May-17	25						
24	14-Nov-17	14						
25	16-May-18	28						
26	30-Oct-18	31						
27								
28								
29								
30								
Coefficient of Variation:		0.46						
Mann-Kendall Statistic (S):		37						
Confidence Factor:		78.4%						
Concentration Trend:		No Trend						



Notes:

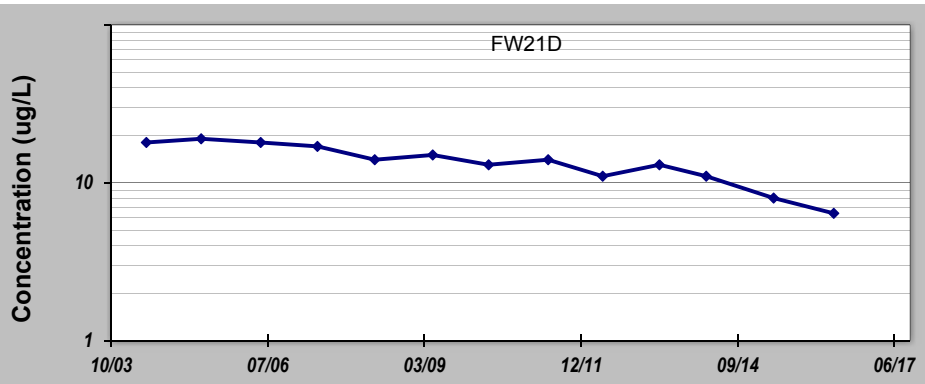
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID: **FW21D**

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (ug/L)
1	May-04	18
2	May-05	19
3	May-06	18
4	May-07	17
5	May-08	14
6	May-09	15
7	May-10	13
8	May-11	14
9	May-12	11
10	May-13	13
11	Mar-14	11
12	May-15	8
13	May-16	6.4
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.28
Mann-Kendall Statistic (S):		-66
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

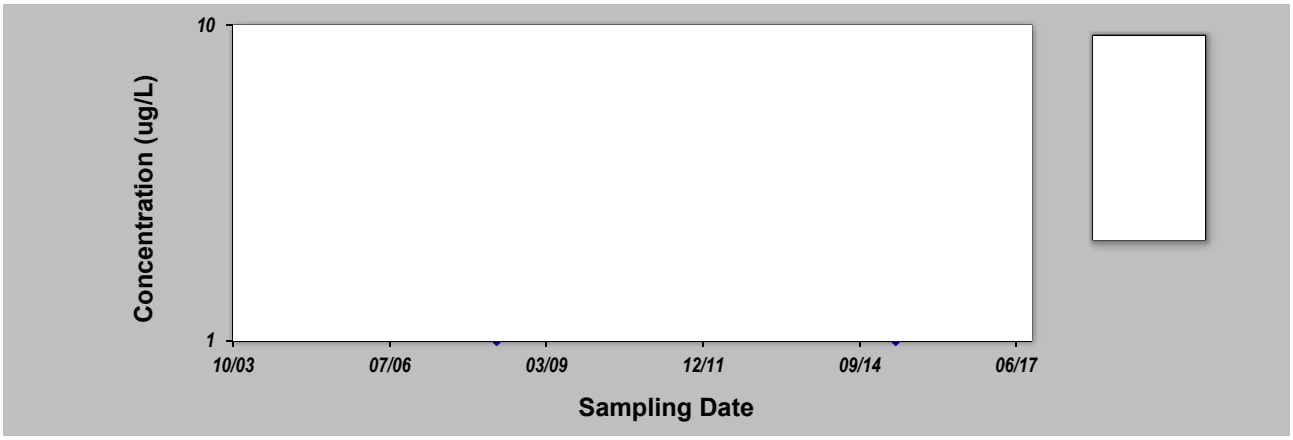
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID: **FW21D**

Sampling Event	Sampling Date	VINYL CHLORIDE CONCENTRATION (ug/L)
1	May-04	6
2	May-05	6
3	May-06	5
4	May-07	4
5	May-08	1
6	May-09	4
7	May-10	3
8	May-11	4
9	May-12	2
10	May-13	2
11	Mar-14	2
12	May-15	1
13	May-16	1.5
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.56
Mann-Kendall Statistic (S):		-52
Confidence Factor:		100.0%
Concentration Trend:		Decreasing



Notes:

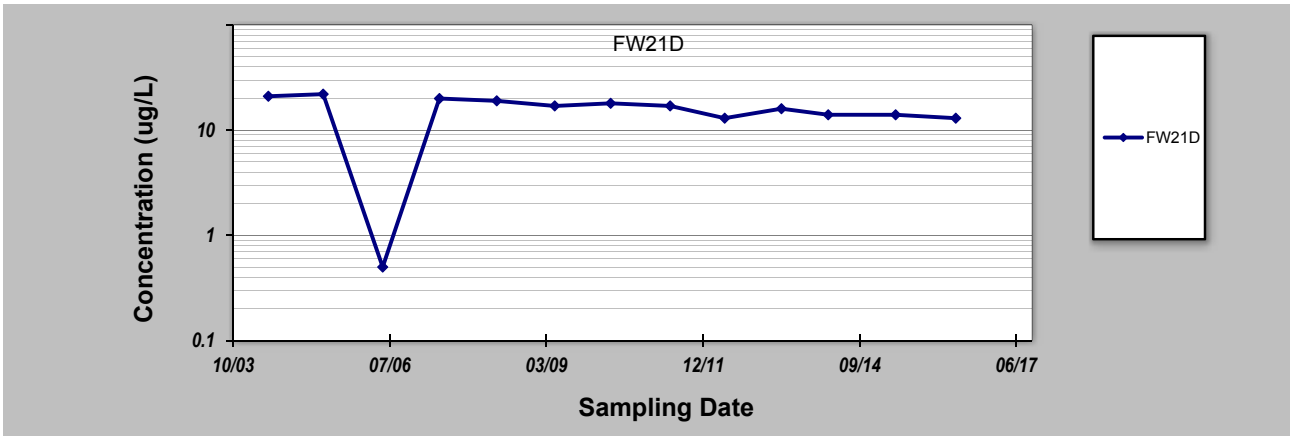
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:		Job ID:	
Facility Name:		Constituent:	
Conducted By:		Concentration Units:	

Sampling Point ID: **FW21D**

Sampling Event	Sampling Date	1,1-DCA CONCENTRATION (ug/L)
1	May-04	21
2	May-05	22
3	May-06	0.5
4	May-07	20
5	May-08	19
6	May-09	17
7	May-10	18
8	May-11	17
9	May-12	13
10	May-13	16
11	Mar-14	14
12	May-15	14
13	May-16	13
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.35
Mann-Kendall Statistic (S):		-45
Confidence Factor:		99.8%
Concentration Trend:		Decreasing



Notes:

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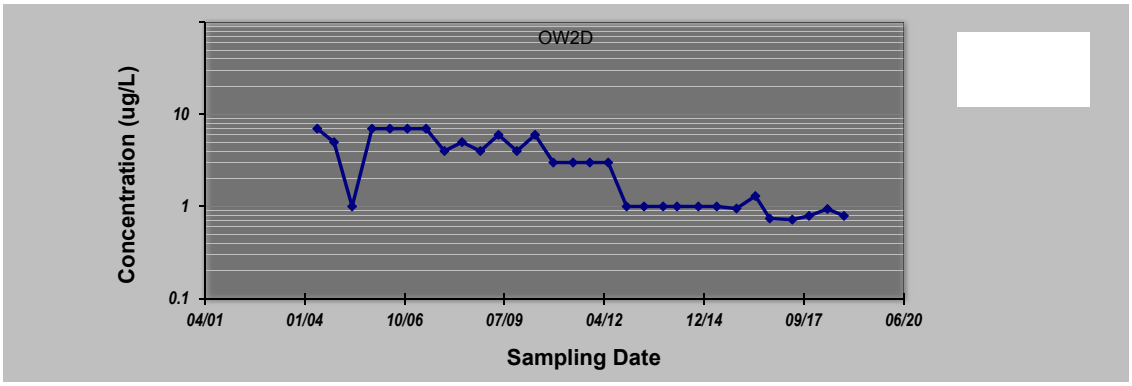
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott
Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: OW2D

Sampling Event	Sampling Date	PCE CONCENTRATION (ug/L)
1	19-May-04	7
2	3-Nov-04	5
3	3-May-05	1
4	18-Nov-05	7
5	17-May-06	7
6	8-Nov-06	7
7	14-May-07	7
8	14-Nov-07	4
9	8-May-08	5
10	8-Nov-08	4
11	9-May-09	6
12	9-Nov-09	4
13	10-May-10	6
14	9-Nov-10	3
15	26-May-11	3
16	9-Nov-11	3
17	12-May-12	3
18	12-Nov-12	1
19	6-May-13	1
20	13-Nov-13	1
21	1-Apr-14	1
22	1-Nov-14	1
23	4-May-15	1
24	18-Nov-15	0.95
25	25-May-16	1.3
26	16-Oct-16	0.74
27	30-May-17	0.72
28	14-Nov-17	0.79
29	17-May-18	0.94
30	30-Oct-18	0.79
31		
32		
33		
34		
35		
Coefficient of Variation:		0.77
Mann-Kendall Statistic (S):		-306
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

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4. Assumption: Non-detect (ND) values are set at half of their detection limit.

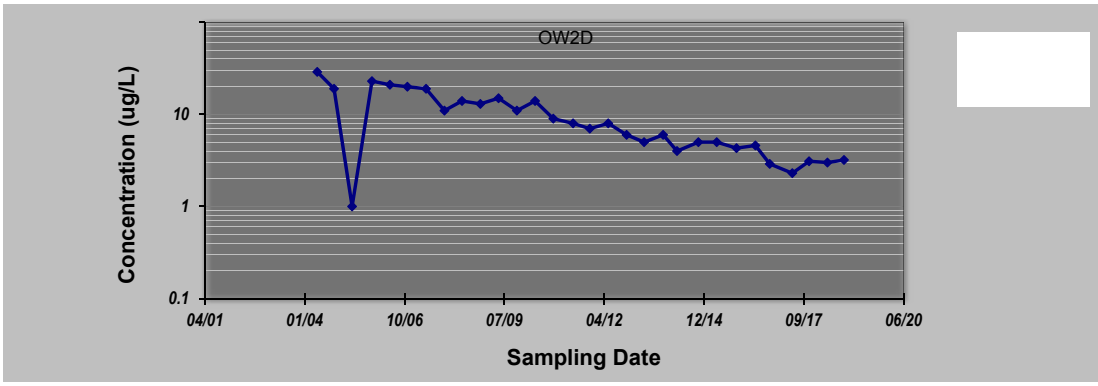
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: OW2D

Sampling Event	Sampling Date	TCE CONCENTRATION (ug/L)
1	19-May-04	29
2	3-Nov-04	19
3	3-May-05	1
4	18-Nov-05	23
5	17-May-06	21
6	8-Nov-06	20
7	14-May-07	19
8	14-Nov-07	11
9	8-May-08	14
10	8-Nov-08	13
11	9-May-09	15
12	9-Nov-09	11
13	10-May-10	14
14	9-Nov-10	9
15	26-May-11	8
16	9-Nov-11	7
17	12-May-12	8
18	12-Nov-12	6
19	6-May-13	5
20	13-Nov-13	6
21	1-Apr-14	4
22	1-Nov-14	5
23	4-May-15	5
24	18-Nov-15	4.3
25	25-May-16	4.6
26	16-Oct-16	2.9
27	30-May-17	2.3
28	14-Nov-17	3.1
29	17-May-18	3
30	30-Oct-18	3.2
31		
32		
33		
34		
35		
Coefficient of Variation:		0.74
Mann-Kendall Statistic (S):		-321
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

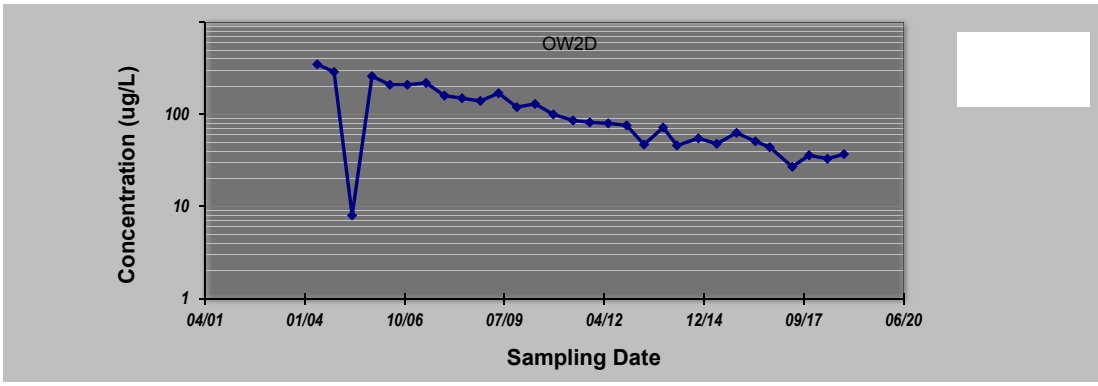
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: OW2D

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (ug/L)
1	19-May-04	350
2	3-Nov-04	290
3	3-May-05	8
4	18-Nov-05	260
5	17-May-06	210
6	8-Nov-06	210
7	14-May-07	220
8	14-Nov-07	160
9	8-May-08	150
10	8-Nov-08	140
11	9-May-09	170
12	9-Nov-09	120
13	10-May-10	130
14	9-Nov-10	100
15	26-May-11	86
16	9-Nov-11	82
17	12-May-12	80
18	12-Nov-12	76
19	6-May-13	47
20	13-Nov-13	72
21	1-Apr-14	46
22	1-Nov-14	55
23	4-May-15	48
24	18-Nov-15	63
25	25-May-16	51
26	16-Oct-16	44
27	30-May-17	27
28	14-Nov-17	36
29	17-May-18	33
30	30-Oct-18	37
31		
32		
33		
34		
35		
Coefficient of Variation:		0.76
Mann-Kendall Statistic (S):		-334
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

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3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

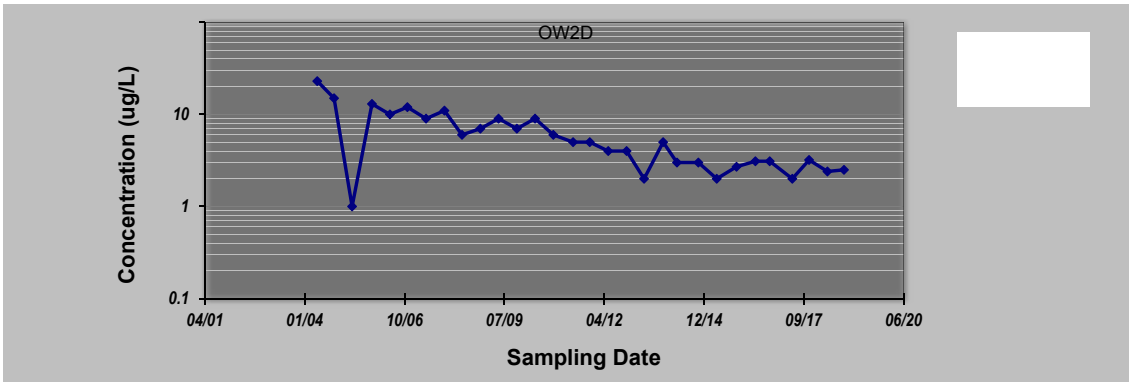
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:
Facility Name:
Conducted By: Julia Scott

Job ID:
Constituent:
Concentration Units: ug/L

Sampling Point ID: OW2D

Sampling Event	Sampling Date	VINYL CHLORIDE CONCENTRATION (ug/L)
1	19-May-04	23
2	3-Nov-04	15
3	3-May-05	1
4	18-Nov-05	13
5	17-May-06	10
6	8-Nov-06	12
7	14-May-07	9
8	14-Nov-07	11
9	8-May-08	6
10	8-Nov-08	7
11	9-May-09	9
12	9-Nov-09	7
13	10-May-10	9
14	9-Nov-10	6
15	26-May-11	5
16	9-Nov-11	5
17	12-May-12	4
18	12-Nov-12	4
19	6-May-13	2
20	13-Nov-13	5
21	1-Apr-14	3
22	1-Nov-14	3
23	4-May-15	2
24	18-Nov-15	2.7
25	25-May-16	3.1
26	16-Oct-16	3.1
27	30-May-17	2
28	14-Nov-17	3.2
29	17-May-18	2.4
30	30-Oct-18	2.5
31		
32		
33		
34		
35		
Coefficient of Variation:		0.77
Mann-Kendall Statistic (S):		-283
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

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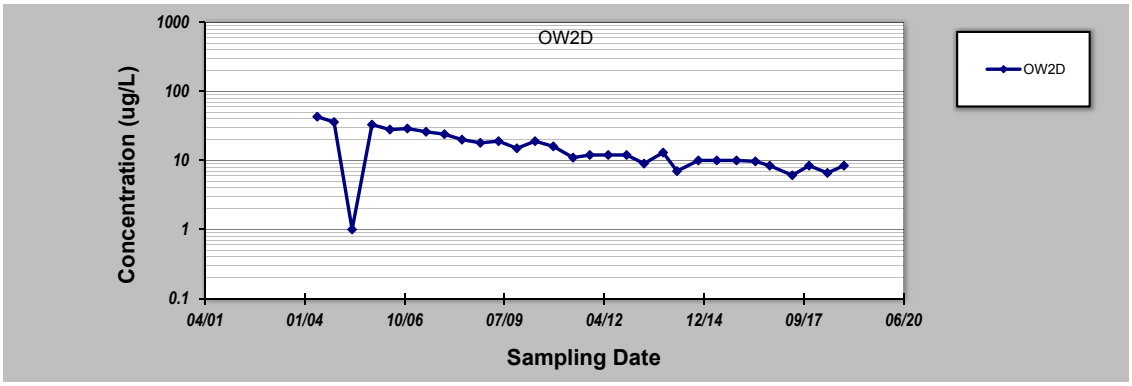
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	11-Jan-19	Job ID:	128904-013
Facility Name:	Haley & Aldrich, Inc.	Constituent:	1,2-DCA
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	OW2D						

Sampling Event	Sampling Date	1,2-DCA CONCENTRATION (ug/L)						
1	19-May-04	43						
2	3-Nov-04	36						
3	3-May-05	1						
4	18-Nov-05	33						
5	17-May-06	28						
6	8-Nov-06	29						
7	14-May-07	26						
8	14-Nov-07	24						
9	8-May-08	20						
10	8-Nov-08	18						
11	9-May-09	19						
12	9-Nov-09	15						
13	10-May-10	19						
14	9-Nov-10	16						
15	26-May-11	11						
16	9-Nov-11	12						
17	12-May-12	12						
18	12-Nov-12	12						
19	6-May-13	9						
20	13-Nov-13	13						
21	1-Apr-14	7						
22	1-Nov-14	10						
23	4-May-15	10						
24	18-Nov-15	10						
25	25-May-16	9.7						
26	16-Oct-16	8.4						
27	30-May-17	6.1						
28	14-Nov-17	8.4						
29	17-May-18	6.6						
30	30-Oct-18	8.4						
31								
32								
33								
34								
35								
Coefficient of Variation:		0.62						
Mann-Kendall Statistic (S):		-315						
Confidence Factor:		>99.9%						
Concentration Trend:		Decreasing						



Notes:

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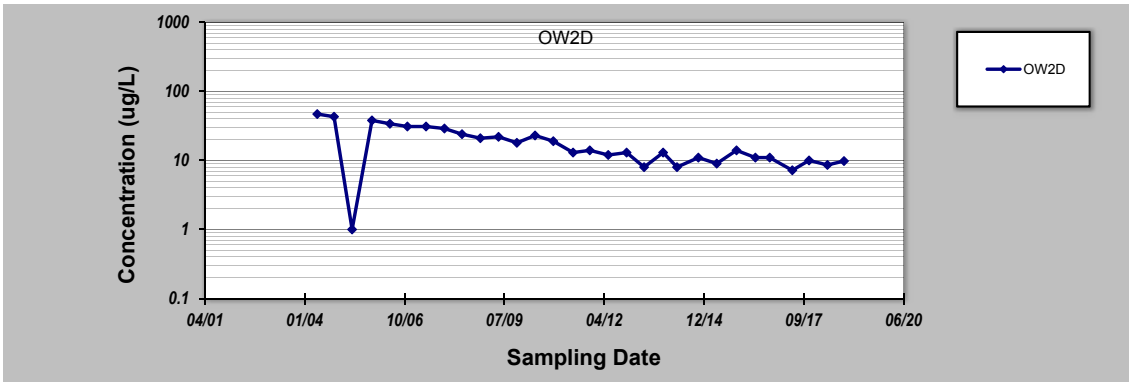
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	11-Jan-19	Job ID:	128904-013
Facility Name:	Haley & Aldrich, Inc.	Constituent:	1,1-DCA
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	OW2D						

Sampling Event	Sampling Date	1,1-DCA CONCENTRATION (ug/L)						
1	19-May-04	47						
2	3-Nov-04	43						
3	3-May-05	1						
4	18-Nov-05	38						
5	17-May-06	34						
6	8-Nov-06	31						
7	14-May-07	31						
8	14-Nov-07	29						
9	8-May-08	24						
10	8-Nov-08	21						
11	9-May-09	22						
12	9-Nov-09	18						
13	10-May-10	23						
14	9-Nov-10	19						
15	26-May-11	13						
16	9-Nov-11	14						
17	12-May-12	12						
18	12-Nov-12	13						
19	6-May-13	8						
20	13-Nov-13	13						
21	1-Apr-14	8						
22	1-Nov-14	11						
23	4-May-15	9						
24	18-Nov-15	14						
25	25-May-16	11						
26	16-Oct-16	11						
27	30-May-17	7.2						
28	14-Nov-17	10						
29	17-May-18	8.6						
30	30-Oct-18	9.8						
31								
32								
33								
34								
35								
Coefficient of Variation:		0.63						
Mann-Kendall Statistic (S):		-294						
Confidence Factor:		>99.9%						
Concentration Trend:		Decreasing						



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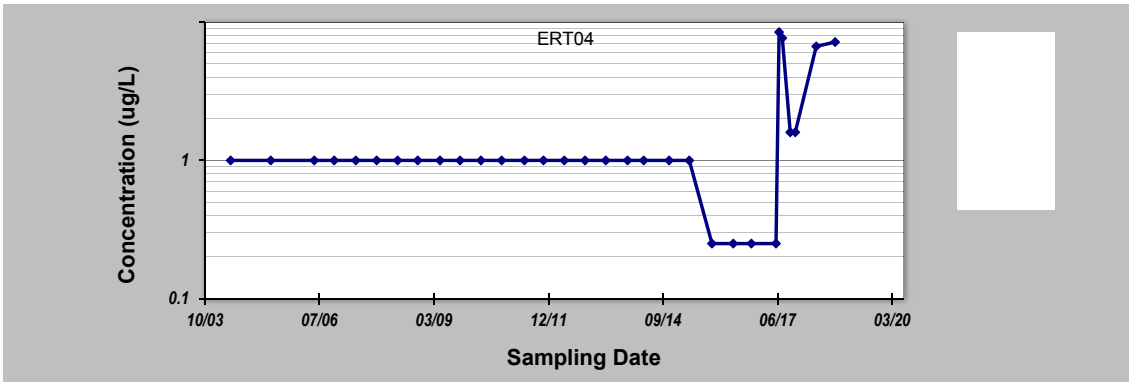
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: 11-Jan-19
Facility Name:
Job ID: 128904-013
Constituent:

1	May-04	1						
2	May-05	1						
3	May-06	1						
4	Nov-06	1						
5	May-07	1						
6	Nov-07	1						
7	May-08	1						
8	Nov-08	1						
9	May-09	1						
10	Nov-09	1						
11	May-10	1						
12	Nov-10	1						
13	May-11	1						
14	Nov-11	1						
15	May-12	1						
16	Nov-12	1						
17	May-13	1						
18	Nov-13	1						
19	Apr-14	1						
20	Nov-14	1						
21	May-15	1						
22	Nov-15	0.25						
23	May-16	0.25						
24	Oct-16	0.25						
25	May-17	0.25						
26	Jun-17	8.5						
27	Jul-17	7.7						
28	Oct-17	1.6						
29	Nov-17	1.6						
30	May-18	6.7						
31	Oct-18	7.2						
32								
33								
34								
35								
Coefficient of Variation:		1.28						
Mann-Kendall Statistic (S):		62						
Confidence Factor:		84.9%						
Concentration Trend:		No Trend						



Notes:

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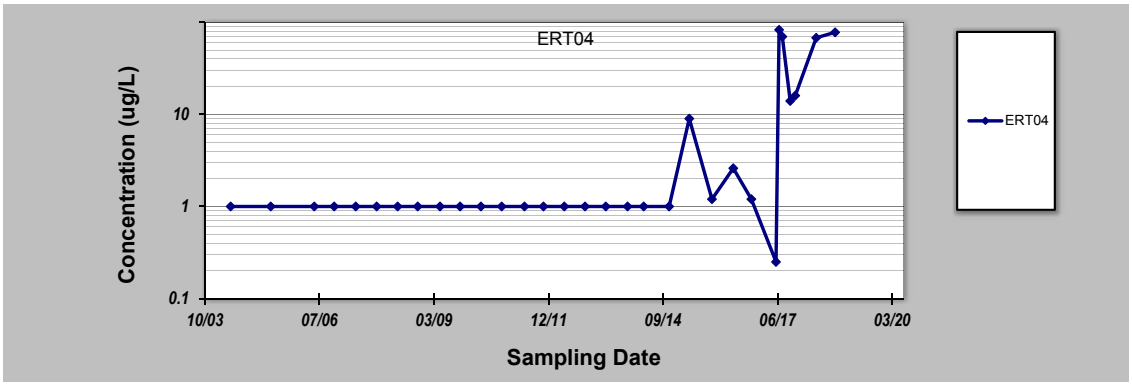
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

1	May-04	1						
2	May-05	1						
3	May-06	1						
4	Nov-06	1						
5	May-07	1						
6	Nov-07	1						
7	May-08	1						
8	Nov-08	1						
9	May-09	1						
10	Nov-09	1						
11	May-10	1						
12	Nov-10	1						
13	May-11	1						
14	Nov-11	1						
15	May-12	1						
16	Nov-12	1						
17	May-13	1						
18	Nov-13	1						
19	Apr-14	1						
20	Nov-14	1						
21	May-15	9						
22	Nov-15	1.2						
23	May-16	2.6						
24	Oct-16	1.2						
25	May-17	0.25						
26	Jun-17	83						
27	Jul-17	70						
28	Oct-17	14						
29	Nov-17	16						
30	May-18	68						
31	Oct-18	78						
32								
33								
34								
35								
Coefficient of Variation:		**2.14**						
Mann-Kendall Statistic (S):		**202**						
Confidence Factor:		**>99.9%**						
Concentration Trend:		**Increasing**						



Notes:

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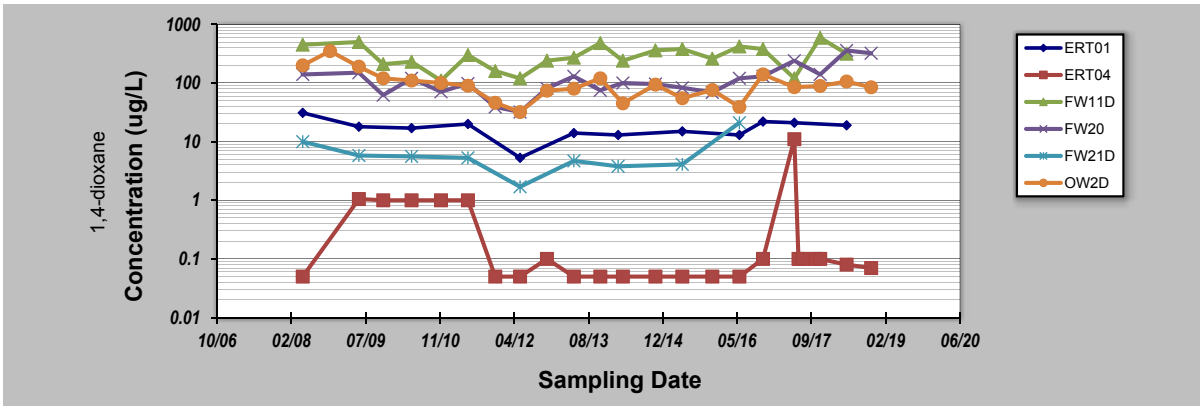
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	11-Jan-19	Job ID:	128904-013
Facility Name:	Haley & Aldrich, Inc.	Constituent:	1,4 Dioxane
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	ERT01	ERT04	FW11D	FW20	FW21D	OW2D
Sampling Event	Sampling Date	1,4 DIOXANE CONCENTRATION (ug/L)					
1	May-08	31	0.05	450	140	10	200
2	Nov-08						350
3	May-09	18	1.05	500	150	5.8	190
4	Nov-09		1	210	62		120
5	May-10	17	1	230	120	5.6	110
6	Nov-10		1	110	71		100
7	May-11	20	1	300	98	5.3	90
8	Nov-11		0.05	160	39		46
9	May-12	5.3	0.05	120	32	1.7	32
10	Nov-12		0.1	240	81		74
11	May-13	14	0.05	270	130	4.7	80
12	Nov-13		0.05	480	75		120
13	Mar-14	13	--	--	--	3.8	
14	Apr-14		0.05	240	100		45
15	Nov-14		0.05	360	96		94
16	May-15	15	0.05	380	83	4.1	55
17	Nov-15		0.05	260	69		76
18	May-16	13	0.05	420	120	21	39
19	Oct-16	22	0.1	380	130		140
20	May-17	21	11	120	240		85
21	Jun-17		0.1		--		
22	Jul-17		0.1		--		
23	Oct-17		0.1		--		
24	Nov-17		0.1	590	140		89
25	May-18	19	0.08	316	359		106
26	Oct-18		0.07		322		84.6
27							
28							
29							
30							
Coefficient of Variation:		0.36	3.08	0.44	0.67	0.83	0.66
Mann-Kendall Statistic (S):		-3	-20	35	65	-12	-68
Confidence Factor:		55.4%	68.0%	86.3%	97.4%	87.0%	97.1%
Concentration Trend:		Stable	No Trend	No Trend	Increasing	Stable	Decreasing



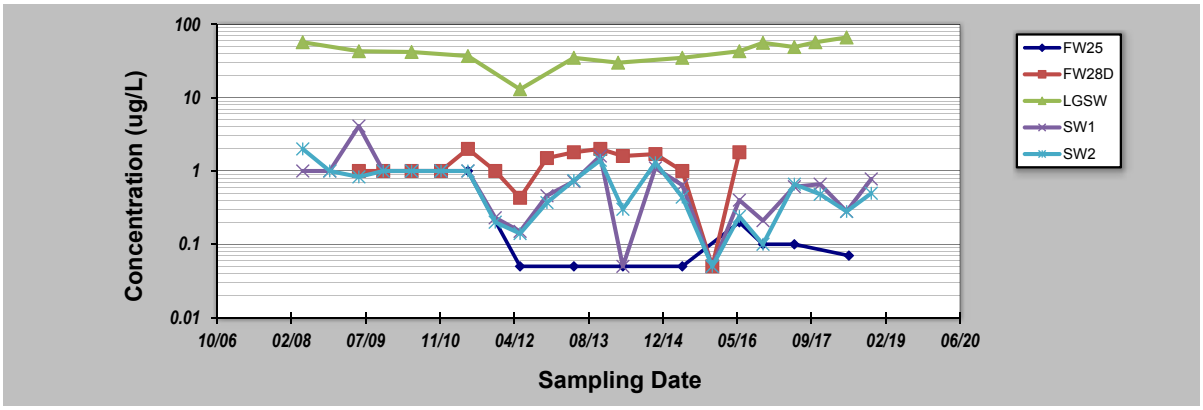
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.
5. "--" indicates that the associated concentration was not available.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	11-Jan-19	Job ID:	128904-013
Facility Name:	Haley & Aldrich, Inc.	Constituent:	1,4 Dioxane
Conducted By:	Julia Scott	Concentration Units:	ug/L

Sampling Point ID:	FW25	FW28D	LGSW	SW1	SW2		
Sampling Event	Sampling Date	1,4 DIOXANE CONCENTRATION (ug/L)						
1	May-08			57	1	2		
2	Nov-08				1	1		
3	May-09	1	1	43	4.1	0.83		
4	Nov-09		1		1	1		
5	May-10	1	1	42	1	1		
6	Nov-10		1		1	1		
7	May-11	1	2	37	1	1		
8	Nov-11		1		0.23	0.2		
9	May-12	0.05	0.43	13	0.15	0.14		
10	Nov-12		1.5		0.46	0.37		
11	May-13	0.05	1.8	35	0.72	0.74		
12	Nov-13		2		1.6	1.4		
13	Mar-14			30				
14	Apr-14	0.05	1.6		0.05	0.3		
15	Nov-14		1.7		1.1	1.3		
16	May-15	0.05	1	35	0.64	0.44		
17	Nov-15		0.05		0.05	0.05		
18	May-16	0.2	1.8	43	0.4	0.24		
19	Oct-16	0.1		56	0.21	0.1		
20	May-17	0.1		49	0.61	0.66		
21	Jun-17							
22	Jul-17							
23	Oct-17			57				
24	Nov-17				0.66	0.48		
25	May-18			66.2	0.281	0.28		
26	Jun-18	0.07						
27	Oct-18				0.778	0.496		
28								
29								
30								
Coefficient of Variation:		1.29	0.46	0.32	1.02	0.73		
Mann-Kendall Statistic (S):		-13	16	21	-71	-79		
Confidence Factor:		82.1%	76.7%	88.6%	97.6%	98.7%		
Concentration Trend:		No Trend	No Trend	No Trend	Decreasing	Decreasing		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.
4. Assumption: Non-detect (ND) values are set at half of their detection limit.

APPENDIX F. SITE INSPECTION AND INTERVIEW FORMS

Tinkham Garage Superfund Site
5-Year Review Interview Questions

Interviewees: Andrew Fuller, NHDES Project Manager

Interview conducted via email correspondence, with follow up telephone conversations. The interviewee has been the Project Manager for the New Hampshire Department of Environmental Services since taking over for Ken Richards in January 2019 and is very familiar with the Tinkham Garage Site.

1. What is your overall impression of the project and Site over the last 5 years?

There has been a lot of new information that has come to light in the last five years. Perhaps the most significant occurred in 2014 when site COCs were detected in residential water supply wells to the east of the site. This spurred an ongoing bedrock remedial investigation to better understand source areas, migration pathways, and potential receptors. Multiple residential water supply wells have been sampled as part of the remedial investigation, which has identified additional impacts of site-related COCs in excess of the NH Ambient Groundwater Quality Standards in multiple areas around the site including drinking water supply wells. Many homes have been provided alternate sources of drinking water as a result of this investigation, this includes connection to municipal water for some properties and bottled water for others. NHDES considers bottled water a temporary solution to this problem and anticipates that a permanent solution will be implemented within the next year.

2. What is your opinion of the current Site remedy that consists of monitored natural attenuation?

At this time, additional investigation is required to determine if the current Site remedy is appropriate. New Site contaminants such as 1,4-dioxane and PFAS, behave differently in the environment and monitored natural attenuation may not be appropriate as a remedy any longer.

3. Do you have any concerns with the Site or current Site remedy?

NHDES is concerned that monitored natural attenuation may not be appropriate to remediate Site contaminants such as 1,4-dioxane and PFAS. These contaminants persist much longer in the environment and there is a risk that they will continue to migrate away from the Site. As mentioned previously, NHDES considers bottled water a temporary solution and expects that all homes that exceed State drinking water standards will to be provided a permanent connection to the nearby water line consistent with the 2016 ESD.

4. Was your previous impression different? Why is it different?

Being that I recently became involved with the site, I do not have a different previous impression of the Site.

5. Are you aware of any issues the 5-Year Review should focus on?

The 5YR should focus on the appropriateness of the remedy with regards to the newly identified contaminants and the recent detection of Site-related contaminants in residential water supply wells to the east, north, and south of the site. This should include an assessment of whether previous Site-characterization efforts were sufficient to understand the extent of impacts at the Site. The Vapor Intrusion pathway should be assessed to determine if the current remedy is protective, as TCE risk based inhalation criteria has changed in recent years.

6. Are there other members of the community that should be interviewed in order to solicit local input?

At least one resident from the area where impacted water supply wells have been discovered, a representative from the Town of Londonderry and a representative from the Nevins Community should be included in the 5YR interview process.

7. Is the Town actively involved with any Site activity or should it be?

The Town periodically received inquiries regarding the Site. They are aware that all reports and site related documents are available for review through the NHDES OneStop website.

8. Have there been any changes in the Site or surrounding area in the last five years?

There has been development to the southwest of the site beyond the Woodland Village Condo area. The most significant changes to the site pertain to the detection of Site-related contaminants in residential water supply wells surrounding the Site.

9. Are there any land-use or zoning changes at the Site or surrounding area?

NHDES is not aware of any zoning changes have been implemented in the last 5 years or are anticipated in the near future.

10. Are any changes planning in the surrounding area?

NHDES is not aware of any changes planned in the surrounding area of the Site.

11. Have any developers shown interest in the Site?

NHDES is not aware of any developers showing interest in the Site at this time. NHDES understands that the remaining undeveloped areas behind the former Tinkham Garage are to remain undeveloped as part of the agreement to develop the Nevins Community. NHDES is also aware that the Town of Londonderry is currently evaluating ways to turn the abandoned apple orchard to the east of the Site into a parcel for recreational use including hiking paths.

12. What effects have Site operations had on the surrounding community?

The recent detection of Site-related contaminants in residential water supply wells calls into question whether monitored natural attenuation is an appropriate remedy based on current Site conditions. Although this has resulted in an adverse impact on the surrounding

community, NHDES has only been contacted by one impacted resident with additional questions regarding the Site.

13. Are you aware of any community concerns regarding the Site or its operation and administration? If so, please give details.

There has been one vocal resident that has contacted NHDES about the Site, but he does not live near the Site and is not directly impacted by it. He expressed concern that not enough is being done at the Site to clean up the contamination.

14. Are you aware of any events, Incidents, or activities at the Site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

NHDES is not aware of any instances such as these occurring at the Site.

15. Do you feel well informed about the ongoing activities at the Site, including progress towards meeting the cleanup objectives?

NHDES is well informed and involved in every decision that is made for the Site. Communication between NHDES and USEPA is strong.

16. Do you have any comments, suggestions, or recommendations regarding the Site's management or operation?

NHDES would like to see a permanent solution to address impacted, and potentially impacted, water supply wells that surround the Site. Municipal water is readily available to the area and connection of homes would reduce the risk of exposure from contaminants that are migrating from the Site and would be consistent with the 2016 ESD. NHDES also hopes that significant progress is made on the bedrock remedial investigation over the next two years to further characterize source areas, migration pathways, and potential receptors, with a new remedy being implemented if deemed appropriate.

Tinkham Garage Superfund Site
5-Year Review Interview Questions

Interviewees: Kevin Smith, Town Manager; John Farrell, Chairman Town Council; Richard Canuel, Health Officer; Steve Cotton, Health Department.

Interview conducted in person on June 17, 2019 at the Londonderry Town Hall located at 268 Mammoth Road in Londonderry, New Hampshire. The three interviewees have all been working for the Town for more than 10 years and are all familiar with the Tinkham Garage Site. Cheryl Sprague of USEPA provided an overview of the current status of the Site and Jim Soukup of Weston Solutions asked the interview questions and recorded the answers. Andrew Fuller of NHDES was also present and provided information pertaining to the Groundwater Management Permit for the Site during the discussion.

1. What is your overall impression of the project and Site over the last 5 years?

Kevin and John indicated that while they are generally aware of the Site history and recent activities, they are not getting regular updates. They appreciated the update provided by Andy and Cheryl and would value quarterly updates. Overall they feel that progress on the Site towards a cleanup is going very slowly and they are concerned about the recent expansion of the contamination into the adjacent residential neighborhoods.

2. What is your opinion of the current Site remedy that consists of monitored natural attenuation?

Kevin stated that he thought the cleanup seemed to take a long time. They would like to have the problem fixed once and for all. They want to know when a water line will be installed to provide clean water to the impacted neighborhoods.

3. Do you have any concerns with the Site or current Site remedy?

John restated that the remedy is taking too long to clean up the site, it has been over 20 years, and they want the residents to have safe drinking water.

4. Was your previous impression different? Why is it different?

While Kevin and Richard were aware that there were recent detections of site compounds including PFAS and 1,4-dioxane in drinking water wells on Ross and Tokanel Drives, John was not aware. Kevin stated he did not believe they were getting copies of the Annual Reports from the PRP Group, but that EPA has been in contact with him and Richard and keeping them updated. Steve noted that he was aware the Annual Reports were publicly available online. John invited EPA to provide updates at the Council Meetings if desired. They are concerned about the expanding extent of the PFAS and 1,4-dioxane contamination into nearby residential wells and the required expansion of the GMZ.

5. Are you aware of any issues the 5-Year Review should focus on?
Nothing that was not discussed previously. Primary focus should be on providing water to the impacted residents. Bottled water is only a short-term fix. Need a permanent solution as soon as possible.

6. Are there other members of the community that should be interviewed in order to solicit local input?
John suggested it would be good to talk to some of the more politically-active residents located in the Ross/Tokanel neighborhood.

7. Is the Town actively involved with any Site activity or should it be?
The Town is not currently involved at the Site and does not wish to be. They rely on NHDES and EPA to ensure everything is being addressed properly, but they do want to be kept in the loop with more frequent communications.

8. Have there been any changes in the Site or surrounding area in the last five years?
There has been some commercial development along Route 102 to the west and south. The Town has received a grant to do soil testing on the former apple orchard located off Gilcreast Rd to the northeast and will be doing that work this summer/fall. They want to 'get that property cleaned up' because it is an eyesore. They noted that the Tinkham Garage property is a prime location for future commercial development. There is also planned development in the Apple Tree Mall parking lot across Route 102 from the Site.

9. Are there any land-use or zoning changes at the Site or surrounding area?
No zoning changes have been implemented in the last 5 years or are anticipated in the near future.

10. Are any changes planning in the surrounding area?
None beyond those mentioned above under Question 8.

11. Have any developers shown interest in the Site?
They are not aware of any specific interest, but they reiterated that the Tinkham Garage property is located in a prime spot for future commercial development.

12. What effects have Site operations had on the surrounding community?
Although the Town has not received any direct complaints, the recent finding of contamination in the adjacent residential wells is very concerning.

13. Are you aware of any community concerns regarding the Site or its operation and administration? If so, please give details.
There has been one vocal resident that has contacted the Town about the Site, but he does not live near the Site and is not directly impacted by it.

14. Are you aware of any events, Incidents, or activities at the Site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.

There had been reports of illegal dumping on the property located to the west of the site on the south side of Route 102, but since that parcel has been developed as an assisted living facility, the dumping has ceased.

15. Do you feel well informed about the ongoing activities at the Site, including progress towards meeting the cleanup objectives?

EPA and NHDES have been providing regular updates to the Town on the progress of the Remedial Investigation and the recent off-site detections of contamination. While they are aware that the Annual Reports are publically available online, it would be helpful for them to receive email notification (with a link) when they are uploaded.

16. Do you have any comments, suggestions, or recommendations regarding the Site's management or operation?

They feel that EPA and NHDES are managing the Site well, but they would like to see a water line for the impacted residents as soon as possible and get the site cleaned up quicker.

Nevins Community Interview 2019 FYR

July 24, 2019

Interview with Property Manager, Board President, and Board Members

The Nevins Community is a 55 and up housing development that boarders the Site. The board president has lived in Londonberry since 1978 and is very familiar with the history of the site. Over the years there has been significant news coverage of the site and Tinkham history. Originally, the development was planned for families, but there was concern in the town about families and children living near the Site, is how it turned into the Nevins. The board members stated that any new home owners do get paperwork on the Tinkham Site so that they are aware of it before buying and must sign consent.

The board feels that the project is transparent to everyone here. However, a lot of people in the neighborhood have died related to cancers and there is a sense of nervousness around the site and potential health effects. Board members recognize there is no connection, but some people do worry about it.

The property manager works with Haley and Aldrich (Ian Phillips) but the board does not hear from anyone on the site. They are resistant to reach out to Nevins community about site activity and raise alarm for no reason. Some residents are worried about the soil and have misunderstandings about where the contamination is and what the real exposure concerns are.

There are not a lot of community concerns here related to the site and the property manager does not hear from people with questions. The Board and property manager think it would be helpful to have a one-pager with information on the site status, specific to Nevins, to share with residents including key points and upcoming work.

Tinkham Garage Superfund Site
5-Year Review Interview Questions

Interviewees: Resident - Tokanel Road

1. What is your overall impression of the project and Site over the last 5 years?
2. What is your opinion of the current Site remedy that consists of monitored natural attenuation?
3. Do you have any concerns with the Site or current Site remedy?
4. Was your previous impression different? Why is it different?
5. Are you aware of any issues the 5-Year Review should focus on?
6. Are there other members of the community that should be interviewed in order to solicit local input?
7. Is the Town actively involved with any Site activity or should it be?
8. Have there been any changes in the Site or surrounding area in the last five years?
9. Are there any land-use or zoning changes at the Site or surrounding area?
10. Are any changes planning in the surrounding area?
11. Have any developers shown interest in the Site?
12. What effects have Site operations had on the surrounding community?
13. Are you aware of any community concerns regarding the Site or its operation and administration? If so, please give details.
14. Are you aware of any events, Incidents, or activities at the Site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.
15. Do you feel well informed about the ongoing activities at the Site, including progress towards meeting the cleanup objectives?

16. Do you have any comments, suggestions, or recommendations regarding the Site's management or operation?

On bottled water for 1,4 Dioxane. Would like to sell their home and have been talking about that but it feels like that is not an option. The ideal situation, and logical one, would be to get on town water.

We understand that it will take some time, but the hardest part is that we were waiting for son to graduate High School to decide if we should make a move.

All thing considered we understand that the increased risk here is not that much different than any other area. Felt that Ian explained that very well and was great to work with. Made sure to have all the data ready to sit down and walk through everything when meeting to go over details.

Bought home in 2004 and new that there was a superfund site but seemed far enough away that we were not abutting the site, had confidence in the monitoring. Heard from some neighbors that they had concern about drinking the water but did not have concerns about it. First round of sampling was sometime within this last year. Pleased to see that EPA was coming to monitor the homes. A lot of neighbors were very concerned about letting the sampling take place, but she did not hear much after they started getting bottled water. Glad that the government is monitoring it, she has had her well tested regularly to make sure there were no issues, but 1,4 dioxane is not something that she would have known to ask for testing.

Assuming that when the EPA comes up with a plan that the town will support it. Otherwise has not heard anything from the Town Manager's office but has had a good relationship with them on other issues.

Would the wells be decommissioned and unable to use for watering the lawn, etc?

Loved getting the map in the mail to be able to see where her property sits. Impressed by the cross-group collaboration happening between the state, EPA, and PRP. Sounds like we all communicate well.

Five-Year Review Site Inspection Checklist

Tinkham Garage Superfund Site
Londonderry, New Hampshire

I. SITE INFORMATION	
Site name: Tinkham Garage	**Date of inspection: June 17, 2019**
Location and Region: Londonderry, NH; Region 1	**EPA ID: NHD062004569**
Agency, office, or company leading the five-year review: Region 1 EPA & NHDES	**Weather/temperature: Sunny/75 degrees F**

Remedy Includes: (Check all that apply)

☐ Landfill cover/containment
☐ Access controls
X Institutional controls
☐ Groundwater pump and treatment
☐ Surface water collection and treatment
☐ Other_____
_____

X Monitored natural attenuation
☐ Groundwater containment
☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached **X** Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____
   _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____
   _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency: Town of Londonderry NH
Contact: Kevin Smith (Name) Town Manager (Title) June 17, 2019 (Date) 603-432-1100 (Phone no.)
Problems; suggestions; **X** Report attached _____

Agency: Town of Londonderry, NH
Contact: John Farrell (Name) Chairman Town Council (Title) June 17, 2019 (Date) 603-432-1100 (Phone no.)
Problems; suggestions; **X** Report attached _____

Agency: Londonderry Health Department
Contact: Richard Canuel (Name) Health Officer (Title) June 17, 2019 (Date) 603-432-1100 (Phone no.)
Problems; suggestions; **X** Report attached _____

Agency _____
Contact _____ (Name) _____ (Title) _____ (Date) _____ (Phone no.)
Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

☐ O&M manual	☐ Readily available	☐ Up to date	☐ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	☐ N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	☐ N/A

Remarks: *Sampling and Analysis Plans, Work Plans, and Quality Assurance Project Plans are maintained off-site by the Contractor for the PRP and are available for review upon request.*

2. **Site-Specific Health and Safety Plan** **X** Readily available **X** Up to date ☐ N/A
Contingency plan/emergency response plan **X** Readily available **X** Up to date ☐ N/A

Remarks: *The Site-Specific HASP is maintained off-site by the Contractor for the PRP and is available for review upon request.*

3. **O&M and OSHA Training Records** **X** Readily available **X** Up to date ☐ N/A

Remarks: *OSHA training records for personnel conducting field work at the Site are maintained off-site by the Contractor for the PRP and are available upon request.*

4. **Permits and Service Agreements**

☐ Air discharge permit	☐ Readily available	☐ Up to date	**X** N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	**X** N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	**X** N/A
X Other permits: GMP	**X** Readily available	☐ Up to date	☐ N/A

Remarks: *The NHDES Groundwater Management Permit for this Site was recently renewed with expanded monitoring requirements and the Groundwater Management Zone was modified to include additional residential properties located to the southeast and east of the Site where site compounds have recently been detected.*

5. **Gas Generation Records** ☐ Readily available ☐ Up to date **X** N/A
Remarks_____

6. **Settlement Monument Records** ☐ Readily available ☐ Up to date **X** N/A
Remarks_____

7. **Groundwater Monitoring Records** **X** Readily available **X** Up to date ☐ N/A

Remarks: *A database of groundwater monitoring data is maintained off-site by the Contractor for the PRP and is available upon request. All results and site-related reports are also available for review through the NHDES OneStop website.*

8. **Leachate Extraction Records** ☐ Readily available ☐ Up to date **X** N/A
Remarks_____

9. **Discharge Compliance Records**

☐ Air	☐ Readily available	☐ Up to date	**X** N/A
☐ Water (effluent)	☐ Readily available	☐ Up to date	**X** N/A

Remarks_____

10. **Daily Access/Security Logs** ☐ Readily available ☐ Up to date **X** N/A
Remarks_____
_____

IV. O&M COSTS

1. **O&M Organization**
   - ☐ State in-house
   - ☐ Contractor for State
   - ☐ PRP in-house
   - **X** Contractor for PRP
   - ☐ Federal Facility in-house
   - ☐ Contractor for Federal Facility
   - ☐ Other_____

2. **O&M Cost Records**
   - **X** Readily available **X** Up to date
   - **X** Funding mechanism/agreement in place
   - Original O&M cost estimate: $15,000 to $25,000 (for MNA monitoring) ☐ Breakdown attached

   Total annual cost by year for review period, if available

From Jan 2018 To Dec 2018	~$45,0000	☐ Breakdown attached	
Date Date	Total cost		
From_____ To_____	_____	☐ Breakdown attached	
Date Date	Total cost		
From_____ To_____	_____	☐ Breakdown attached	
Date Date	Total cost		
From_____ To_____	_____	☐ Breakdown attached	
Date Date	Total cost		
From_____ To_____	_____	☐ Breakdown attached	
Date Date	Total cost		

3. **Unanticipated or Unusually High O&M Costs During Review Period**
   Describe costs and reasons: *Future monitoring costs are expected to be higher due to the migration of contaminants beyond the GMZ, and the finding of site-related compounds in downgradient residential drinking water well, the detection of PFAS compounds in Site groundwater and surface water and the need to collect data to assess the MNA remedy, attain cleanup levels and evaluate the range of seasonal variations to assess protectiveness.*

V. ACCESS AND INSTITUTIONAL CONTROLS ☐ Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured **X** N/A
   Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map **X** N/A
   Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes **X** No ☐ N/A
Site conditions imply ICs not being fully enforced ☐ Yes **X** No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by): *Online database review to confirm no new drinking water wells within the Groundwater Management Zone, with windshield survey confirmation*.
Frequency: Annual
Responsible party/agency: PRP Group
Contact: Ian Phillips, (Name) Project Manager (Title) 616-886-7483 (Phone no.)

Reporting is up-to-date **X** Yes ☐ No ☐ N/A
Reports are verified by the lead agency **X** Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No **X** N/A
Violations have been reported ☐ Yes ☐ No **X** N/A
Other problems or suggestions: ☐ Report attached

_____

2. **Adequacy** **X** ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: *The Groundwater Management Zone has been expanded to include additional residential properties where site-related contaminants have been detected above NHDES Ambient Groundwater Quality Standards. The renewed Groundwater Management Permit includes increased monitoring to ensure that the Groundwater Management Zone is protective.*

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☐ No vandalism evident

Remarks*: Illegal dumping has been observed at the rear of the Staples and Home Depot parking lots near the Tinkham Garage source area monitoring wells which are included in the MNA long term monitoring program. Home Depot has been made aware of the dumping and has increased policing of the area, but the dumping has continued, although on a reduced scale.*

2. **Land use changes on site** ☐ N/A

Remarks: *No land use changes were noted on-site during the Site Inspection.*

_____

3. **Land use changes off site** ☐ N/A

Remarks: *No land use changes were noted on adjacent off-site properties.*

_____

VI. GENERAL SITE CONDITIONS

A. Roads **X** Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map **X** Roads adequate ☐ N/A

Remarks_____

_____

B. Other Site Conditions

Remarks: *The Site includes a wide range of conditions, ranging from undeveloped forested areas to active large retail commercial facilities (Home Depot and Staples stores). A portion of the Site includes a senior residential community and downgradient areas include a suburban residential neighborhood. Most areas are well maintained.*

_____

VII. LANDFILL COVERS ☐ Applicable **X** N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____
   _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

4. **Holes** ☐ Location shown on site map ☐ Holes not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____
   _____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks_____
   _____

7. **Bulges** ☐ Location shown on site map ☐ Bulges not evident
   Areal extent_____ Height_____
   Remarks_____
   _____

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident
   ☐ Wet areas ☐ Location shown on site map Areal extent_____
   ☐ Ponding ☐ Location shown on site map Areal extent_____
   ☐ Seeps ☐ Location shown on site map Areal extent_____
   ☐ Soft subgrade ☐ Location shown on site map Areal extent_____
   Remarks_____
   _____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability
Areal extent_____
Remarks_____
_____

B. Benches ☐ Applicable ☐ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
Remarks_____
_____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks_____
_____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks_____
_____

C. Letdown Channels ☐ Applicable ☐ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____
_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____
_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____
_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____
_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____
_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____
_____

D. Cover Penetrations ☐ Applicable ☐ N/A

1. **Gas Vents** ☐ Active☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____
_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____
_____

E. Gas Collection and Treatment ☐ Applicable ☐ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition☐ Needs Maintenance
   Remarks_____
   _____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition☐ Needs Maintenance
   Remarks_____
   _____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition☐ Needs Maintenance ☐ N/A
   Remarks_____
   _____

F. Cover Drainage Layer ☐ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks_____
   _____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks_____
   _____

G. Detention/Sedimentation Ponds ☐ Applicable ☐ N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks_____
   _____

2. **Erosion** Areal extent_____ Depth_____
   ☐ Erosion not evident
   Remarks_____
   _____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks_____
   _____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks_____
   _____

H. Retaining Walls ☐ Applicable ☐ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____
   _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____
   _____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☐ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____
   _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

4. **Discharge Structure** ☐ Functioning ☐ N/A
   Remarks_____
   _____

VIII. VERTICAL BARRIER WALLS ☐ Applicable **X** N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____ ☐ Evidence of breaching
   Head differential_____
   Remarks_____
   _____

IX. GROUNDWATER/SURFACE WATER REMEDIES **X** Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____
_____
_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable **X** N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

C. Treatment System ☐ Applicable **X** N/A

1. **Treatment Train** (Check components that apply)
   ☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
   ☐ Air stripping ☐ Carbon adsorbers
   ☐ Filters_____
   ☐ Additive (*e.g.*, chelation agent, flocculent)_____
   ☐ Others_____
   ☐ Good condition ☐ Needs Maintenance
   ☐ Sampling ports properly marked and functional
   ☐ Sampling/maintenance log displayed and up to date
   ☐ Equipment properly identified
   ☐ Quantity of groundwater treated annually_____
   ☐ Quantity of surface water treated annually_____
   Remarks_____
   _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   ☐ N/A ☐ Good condition☐ Needs Maintenance
   Remarks_____
   _____

3. **Tanks, Vaults, Storage Vessels**
   ☐ N/A ☐ Good condition☐ Proper secondary containment ☐ Needs Maintenance
   Remarks_____
   _____

4. **Discharge Structure and Appurtenances**
   ☐ N/A ☐ Good condition☐ Needs Maintenance
   Remarks_____
   _____

5. **Treatment Building(s)**
   ☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
   ☐ Chemicals and equipment properly stored
   Remarks_____
   _____

6. **Monitoring Wells** (pump and treatment remedy)
   ☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
   ☐ All required wells located ☐ Needs Maintenance ☐ N/A
   Remarks_____
   _____

D. Monitoring Data

1. Monitoring Data
   X Is routinely submitted on time **X** Is of acceptable quality

2. Monitoring data suggests:
   ☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located **X** Needs Maintenance ☐ N/A
Remarks: *Numerous monitoring wells were found to be unsecured/unlocked and/or were difficult to located due to overgrown vegetation*.

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The selected remedy for this Site is Monitored Natural Attenuation with a goal of restoring the overburden and bedrock aquifers to drinking water standards. VOC and 1,4-dioxane concentrations in some wells suggest a residual source is likely present and that MNA alone may not be sufficient to achieve the cleanup goals in a reasonable timeframe, and prevent the migration of contaminants in groundwater toward downgradient residential water supply wells.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

The O&M for the MNA remedy consists of semi-annual sampling of three (3) groundwater monitoring wells and two (2) surface water locations and annual monitoring of an additional 11 groundwater monitoring wells. Three of the monitoring wells include multi-level sampling.

The monitoring program that was conducted since 2002, under the GMP was very limited (14 out of ~57 onsite monitoring wells. The renewed GMP (May 2019) has been expended and includes downgradient residential wells and additional on-site wells for VOCs, 1,4-dioxane, and PFAS as monitoring parameters; in addition to chloride and alkalinity to support assessment of the rate of VOC biodegradation. Additional site characterization of residual mass, groundwater modeling, and sampling is needed to define the horizontal and vertical extent of contaminants in groundwater, assess the fate and transport of these contaminants, assess the effectiveness of the MNA remedy to meet the ROD RAO's protection and migration. Currently, additional data is being collected at the Site through a supplemental bedrock Remedial Investigation required by the 2016 ESD to assess MNA and provide additional remedial cleanup options to address contamination in groundwater. The impact of site-related contaminants in nearby residential water supply wells has required the installation of point-of-entry systems, bottled water, and waterline connections to approximately 17 households since the last FYR in 2014 and additional quarterly monitoring was required at nearby households who continue to utilize groundwater from the bedrock aquifer as their drinking water source to assure protectiveness is being met while these site investigations are completed.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. *The recent detection of 1,4-dioxane and PFAS compounds in downgradient residential wells, combined with the steady and/or upward trend of VOC and 1,4-dioxane concentrations in select source-area monitoring wells suggest that a residual source may be present, that the migration of the plume has extended into nearby residential neighborhoods which rely on groundwater for their drinking water has occurred, and that the effectiveness of MNA to reduce concentrations and minimize migration requires further evaluation.*

D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. *No opportunities for optimization of the MNA remedy were identified during this review.*