TOWN OF DOVER HYDROLOGY STUDY
FISCAL YEAR 2022 ONGOING MONITORING SERVICES
DOVER, MASSACHUSETTS
KLEINFELDER PROJECT # 20211487.001A

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A Report Prepared for:

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1 INTRODUCTION

The purpose of this report is to update Kleinfelder's 2020 Hydrology Study for the Town of Dover using new water level and water quality data collected since November 2019. The water level data from all fourteen wells, five piezometers, and four stream gauges were merged to create one continuous record. Additionally, water quality samples were collected from eight of the monitoring wells.

Kleinfelder performed the necessary site visits on August 31st and September 1st, 2021 to inspect monitoring wells, piezometers, and stream gauges, and collect water level data from transducers installed in monitoring wells and stream gauges. Additionally, a second round of water quality samples was collected from eight of the monitoring wells.

1.1 PROJECT SCOPE

The project scope consisted of the following tasks:

Task 1: Monitoring Network Data Collection

A. Water Level Data - Kleinfelder performed one (1) site monitoring event in August/September 2021 at the following locations MW-1, MW-2, MW-3, MW-4, MW-5, MW-7B, MW-9, MW-11, MW-13, MW-14, MW-15, MW-16, MW-17. The site visit included:
   - Downloading data from dataloggers and confirming proper logger operation and adequate battery life.
   - Assessing the physical conditions of monitoring wells, piezometers, and stream gauges, and dataloggers and making recommendations, as needed, for improvement or replacement.
   - Collecting manual readings of water levels at monitoring wells, piezometers and stream gauges.
   - Performing data processing and barometric corrections to convert pressure to water level readings.

B. Groundwater Sampling - Kleinfelder conducted one round of low-flow method groundwater sampling from eight monitoring wells. Samples were submitted to a MassDEP certified analytical laboratory.

Task 2: Pumping Analysis and Summary Report

A. Local PWS Investigation and Comparative Analysis - Kleinfelder worked with the Town to collect pumping logs and the most recent Annual Statistical Reports from each of the Public Water

Systems withdrawing water within the Town. Data was analyzed and compared with the seasonal and annual trends to the overall monitoring network.

B. Summary Monitoring Report - Kleinfelder compiled data from Task 1 and 2A, including manual gauging data collected by the Town, and prepared a Summary Monitoring Report.

1.2 TOWN UPDATES

Since the issuance of the 2020 Hydrology study, the major updates in the Town that have informed that analysis and recommendations of this report are as follows:

1. Acquisition of Colonial Water Company – in 2021, Aquarion Water Company, a large public water system operations company, acquired the Colonial Water Company (CWC) from the New England Service Company who owned and operated the public water system. Approximately 63% of the Town is supplied by private wells. CWC is the largest public water supplier in the Town, serving approximately 30% of the remaining residents through 11.5 miles of water main and 637 service connections. Recent water quality complaints (most likely due to manganese) in the system led to MassDEP to issue a corrective action plan which ultimately triggered a comprehensive assessment of the system. CWC has been mandated by the state to improve operations and water quality through a variety of means and alternatives. Some of the alternatives being evaluated include flushing programs, new treatment facilities, and new water storage facilities. Aquarion, will now be leading the efforts to bring CWC back into compliance.
2. Public Water System Sustainability Study and Technical Assistance – The Town's recent water quality issues with the CWS have led them to issue a Request for Qualifications (RFQ) for a Public Water System Sustainability Study and Technical Assistance. As described in the RFQ, it aims -

   ". . . to study the Town of Dover's public water systems and develop recommendations to create a path forward that will improve the quality and quantity of Dover's local water supply, as well as provide on-demand technical assistance, as needed to represent the Town's interests in discussions on, and evaluations of, water related issues."
3. Establishment of Monitoring Wells 18 and 19 - on January 5th, 2022, two new monitoring wells, MW-18 and MW-19, were installed, under the Town's direction, to assess groundwater adjacent to CWC pumping wells on Francis Street and Knollwood Drive. The work was coordinated between the Town and New England Geotech. The Town has requested that these wells be added to the monitoring program through a change order to this FY2022 Service – Ongoing Monitoring, which is in the process of being approved by the Town. Upon approval and notice to

proceed, two of the remaining unused transducers are slated to be installed in these new monitoring wells. The wells have not yet been developed; and as part of the proposal, the wells will also be developed and sampled prior to installation of the transducers. The attached Plate 3 has been updated to show the locations of these new monitoring wells.

2 PUBLIC WATER SYSTEM INVESTIGATION

This section will discuss the Public Water Systems that operate within Dover and includes recent changes noted along with providing updated analyses from the previous 2020 Hydrology Study.

2.1 PUBLIC WATER SYSTEMS OVERVIEW

Approximately 37% of Dover's households receive water from one of the privately owned Public Water Systems (PWS). Table 2-1 below shows the seven public water suppliers with wells located within the Town and the approximate populations they serve. For the purposes of this report, only the first three PWSs- those community water systems which pump significant groundwater from within Dover's boundaries- were updated and analyzed herein.

Table 2-1: Dover Public Water Suppliers Overview

System Name	PWS ID#	Dover Population Served[(1)]	System Type	Notes	Average Daily Pumping [(2)] (gpd)
PWS analyzed for annual and seasonal trends					
Colonial Water	3078006	1,890	Community	7 active gravel wells	147,505
Springdale Farms Trust (Colonial Water purchased 2018)	3078008	150	Community	2 gravel wells	19,111
Old Farm Rd. Water Trust	3078001	40	Community	Bedrock Well	3,399
Other Small PWS's not analyzed for trends					
Town of Dover Water Dept[3+]	*3078000*	*500*	*Non-Transient-Non-Community (school)*	*Caryl Park Well (gravel)*	*Not available*
Glen Ridge Trust[4]	*3078002*	*122*	*Community*	*Purchases water from Natick*	*12,042*
Meadowbrook Water Trust[3]	*3078005*	*57*	*Community*	*Purchased water from Natick*	*5,031*
Precious Beginnings[3]	*3078010*	*44*	*Transient Non-Community (day care)*	*Day care center*	*80*

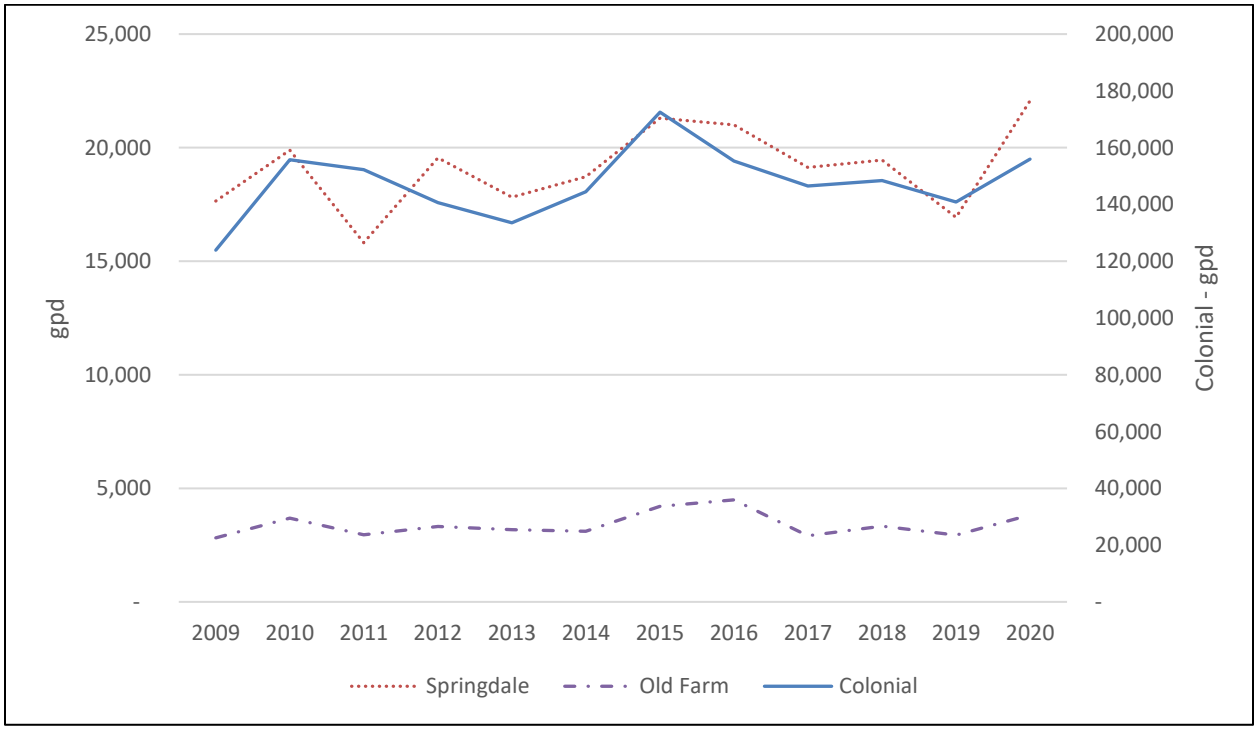
(1) Service population is from MassDEP ASR
(2) Average Daily Pumping from MassDEP ASR 2009 – 2017
(3) Records were not updated as the PWS demand is so low that its impact on aquifer is negligible
(4) Records were not updated from previous hydrology report as PWS purchases water from Natick
(+) Town of Dover Water department is a Non-Transient Non-Community PWS data

All data used for the following analyses was obtained through MassDEP's electronic Annual Statistical Reporting database (eASR) and from the PWSs directly. As of the 2021 eASR Access Database file, which catalogs the data between 2009 and 2020 for community PWSs, only Colonial Water (PWS ID 3078006) was available. Springdale Farms PWS was acquired by Colonial Water in 2018; and they provided pdfs of their Annual Statistical Reports (ASRs). Old Farm Road Water trust also submitted pdfs of the ASRs.

2.2 PUBLIC SYSTEMS HISTORICAL WATER DEMANDS

Figure 2-1 shows the average daily demand (ADD) for each of the Dover community PWSs. The Colonial Water Company (CWC) ranges are depicted on the secondary y-axis (right side of chart) because it is an order of magnitude greater than the second largest supplier in the Town (Springdale). ADD is also presented in Table 2-1.

Figure 2-1: Average Daily Demand for PWS's (GPD)



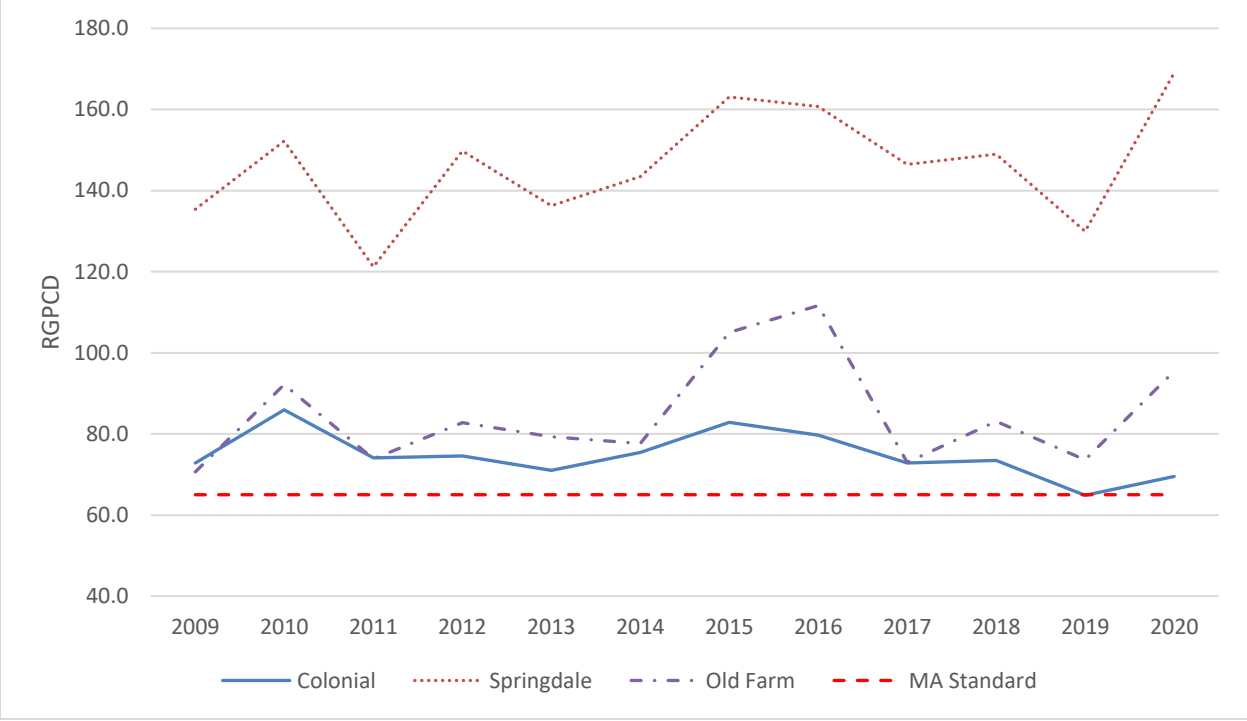
- The CWC peaked in 2015 at 172,000 gpd and has since dropped below 156,000 gpd. The overall increase in 2020 may be due to COVID-19 and many residents working more from home.

- Springdale (now a part of CWC) showed a similar peak in 2015 and an overall reduction into 2019. 2020 marked the highest overall usage at ≈22,000 gpd

Figure 2-2 translates the ADD into residential gallons per capita day (RGPCD) for the five community water systems. The RGPCD is the estimated domestic water usage per person. Higher rates can be indicative of more frequent summer lawn watering and/or other outdoor uses, or of plumbing fixtures not meeting state plumbing code efficiency standards. The Massachusetts RGPCD Standard is 65 gal/capita/day and is depicted in the figure as the red horizontal dashed line.

All PWSs continue to exceed the RGPCD since 2017, with the exception of CWC in 2019. Since 2015, CWC has steadily decreased the RGPCD with the 2019's value calculated at 65, making it the only year in compliance. However, in 2020, it increased to 73; with the overal increase in total usage potentially due to COVID-19-related changes in residential use. The Springdale Farms PWS usage rates are excessively high; more than double the state standard.

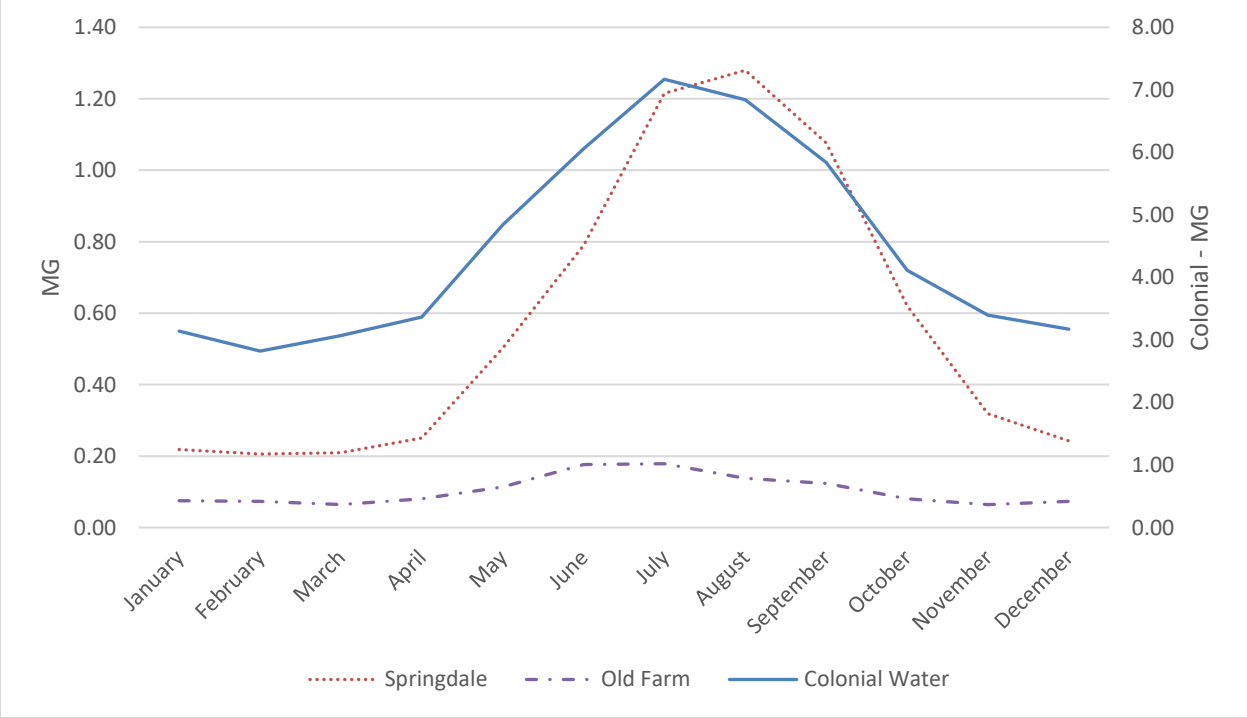
Figure 2-2: Residential Gallons per Capita per Day (2009-2020)



2.2.1 Public Water Systems Seasonal Water Demands

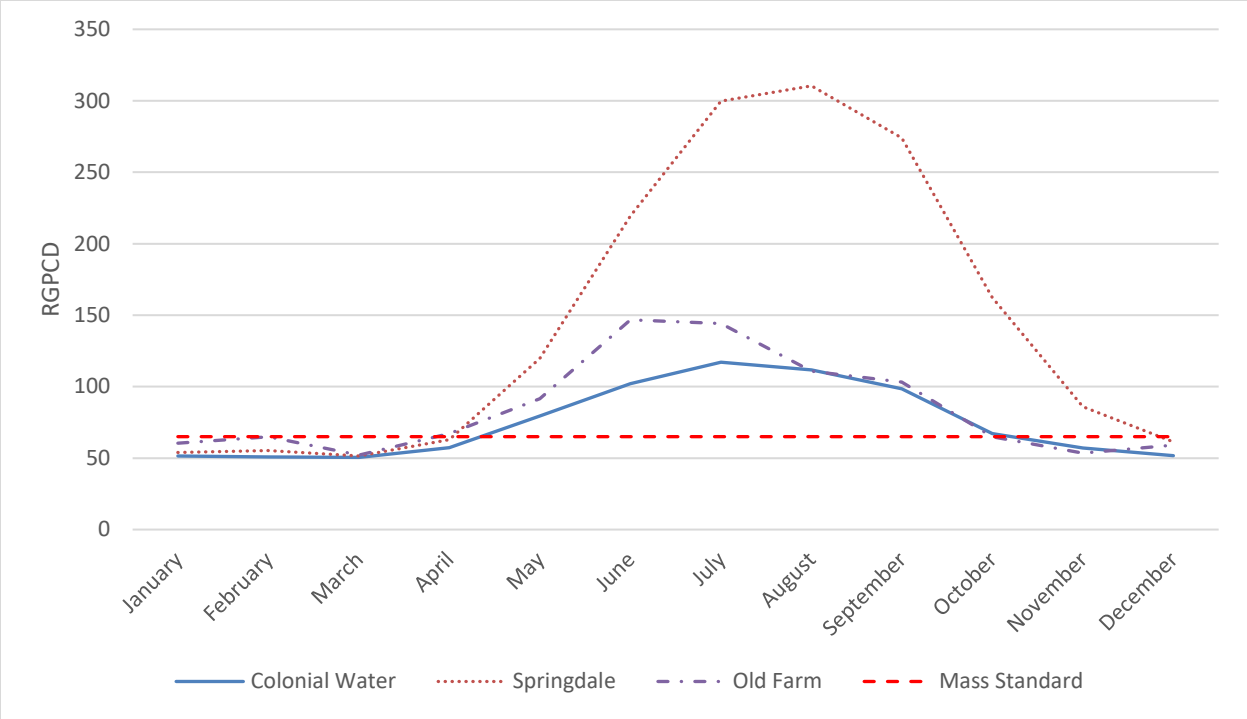
Monthly data collected between 2009 and 2012 from the MassDEP ASRs were used to plot monthly averages for the three community water systems**.** Figure 2-3 presents the monthly average usage (volume) in millions of gallons (MG). The Colonial Water system ranges are depicted on the secondary y-axis (right side of chart) because values are an order of magnitude greater than the second largest supplier in Town (Springdale).

Figure 2-3: Monthly Average Usage for PWS's



Typical seasonal trends for PWSs are defined by lower usage in the winter and higher usage in the summer months. Higher usage in the summer months is primarily due to outdoor water usage such as watering lawns and filling swimming pools. No significant changes in the trends are observable when incorporating the 2018-2020 data sets. As Figure 2-4 demonstrates, the residential summer usage by Springdale Farms continues to far exceed that of the other systems.

Figure 2-4: Monthly Average RGPCD for PWSs (2009-2020)

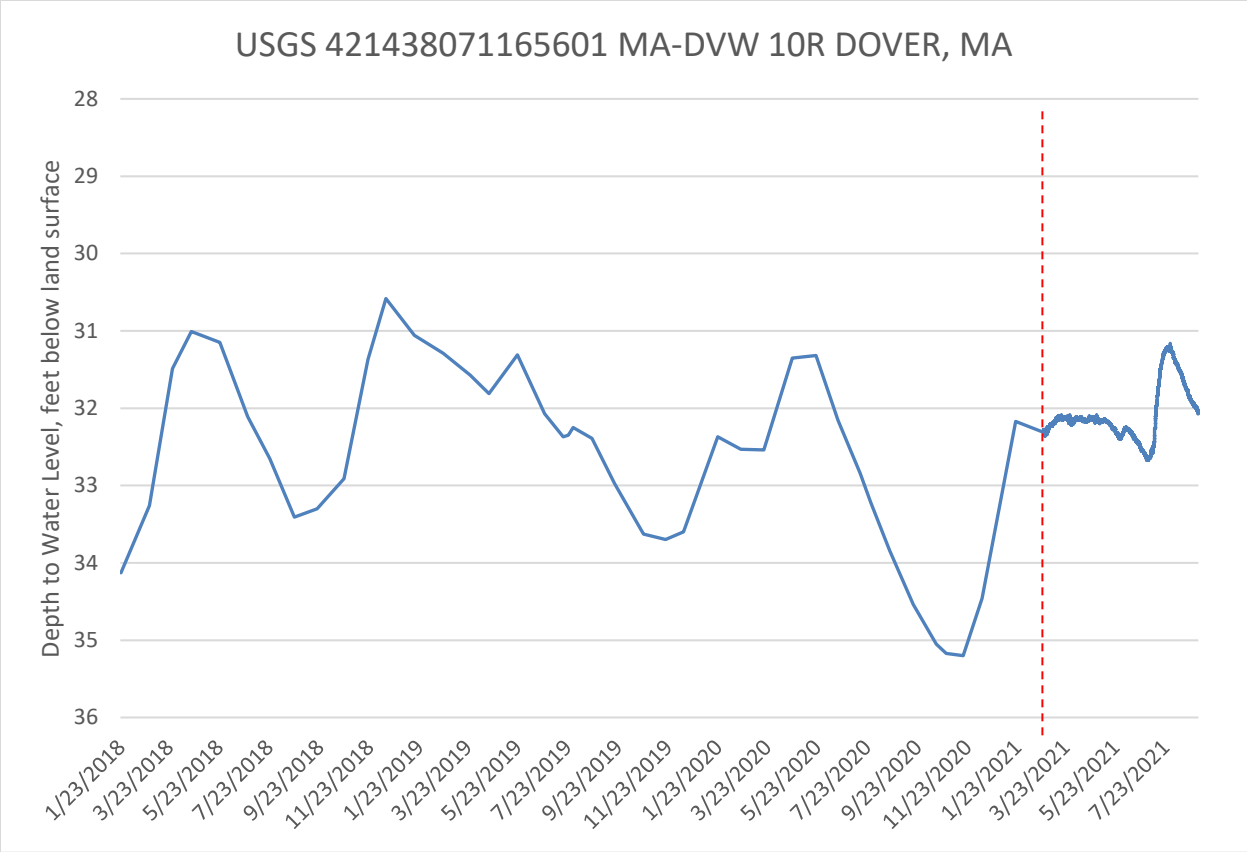


2.2.2 Reference Data

The analysis provided in the subsequent sections uses updated reference datasets from the local weather stations and USGS stream gauges. An inventory of data used is provided in Table 2-2. More information on the Stations/sites is also provided in the 2020 Hydrology Study.

Previously, USGS Wells 10 and 10R were used for comparative purposes. Since the issuance of the previous report, USGS Well 10 was discontinued and data is no longer available. USGS Well 10R was also upgraded on February 24, 2021 with a water level transducer that provides output readings every 15-minutes. Figure 2-5 ties the two data sets together with manual readings to the left of the vertical red line and transducer data to the right.

Figure 2-5: USGS Well 10R Combined Data Graph



The following stations were used:

Table 2-2: USGS and Monitoring Stations

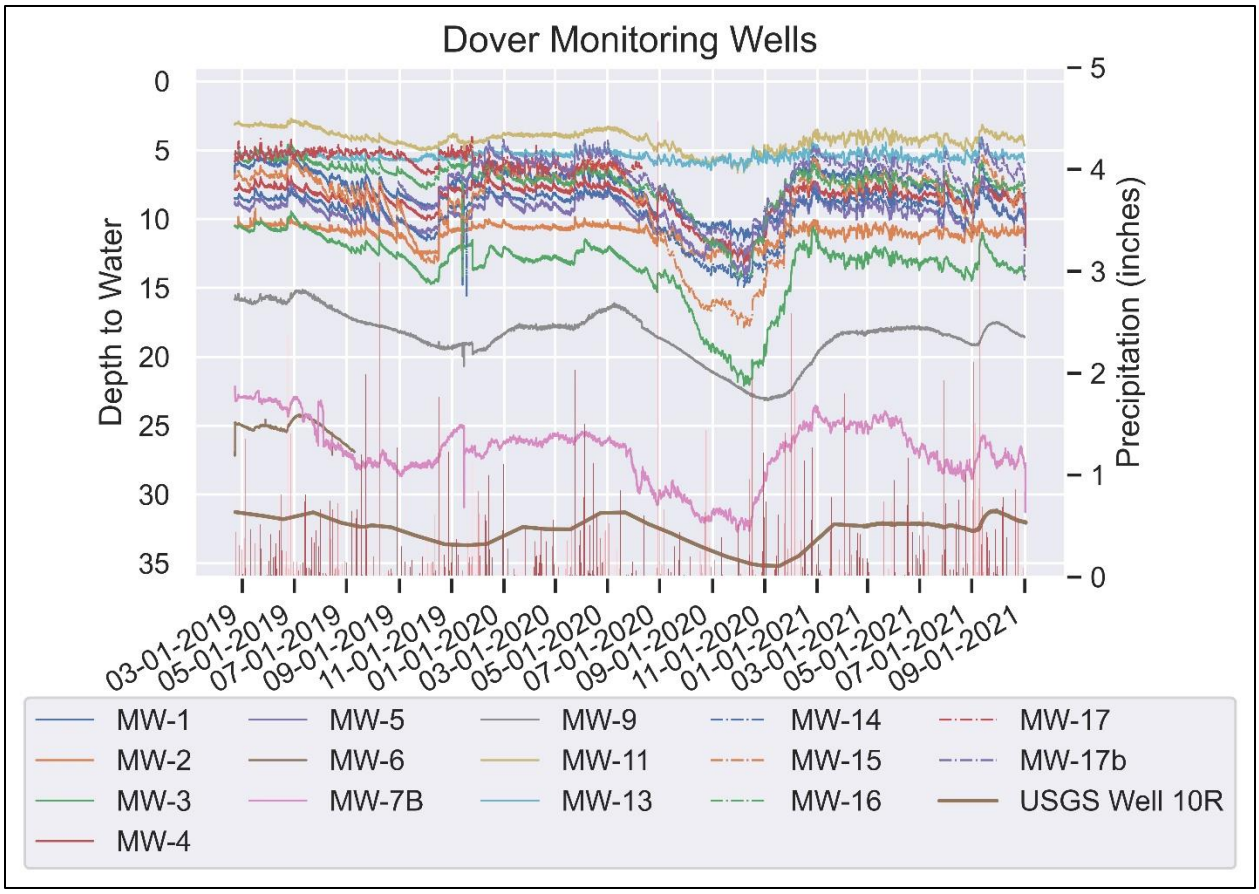
Station Name	Number	Type	Data	Monitoring Frequency
MA-DVW 10R Dover, MA	421438071165601	Well (52.2 ft deep)	Depth to Water	Monthly (Jan 2019- Feb 2021)
MA-DVW 10R Dover, MA	421438071165601	Well (52.2 ft deep)	Depth to Water	15 min (Feb 2021 to Sept 2021)
MA-DVW 10 Dover, MA	421435071165701	Well (54.0 ft deep)	Depth to Water	Monthly
Trout Brook at Dover, MA	01103455	Stream Gauge	Discharge, gauge height	15 min
Charles River at Dover, MA	01103500	Stream Gauge	Discharge, gauge height	15 min
US1MANF0001 near Norwood, MA	US1MANF0001	Weather Station	Precipitation	Daily

3 WATER LEVEL MONITORING DATA AND RESULTS

3.1 MONITORING WELLS RESULTS

Figure 3-1 shows the full record of monitoring well water level data along with the weather station precipitation data. The full record includes data from the original monitoring period of Feb. 20th, 2019 to Nov. 11th, 2019, the second monitoring period Nov. 11th, 2019 to June 10, 2020, and the most recent monitoring period June 10, 2020 to Sept. 1st, 2021.

Figure 3-1: Depth to Water in Monitoring Wells, USGS Well 10R, and Local Precipitation



Results and observations from each well are described individually in the following sections. Most of the monitoring wells show responses (increase in water level or decrease in Depth to Water (DTW)) to precipitation. Each of the monitoring wells follows a similar trend than the USGS monitoring well, with higher water levels in the winter and lower water levels in the summer. This contrasts with the PWS seasonal usage in Section 2.2, which is highest when availability is lowest.

Table 3-1 shows basic statistics calculated from water level data of each Monitoring Well Transducer From the table, typical overburden range fluctuations observed between 2.45 to 12.67 feet with an average of 7.04 feet (MW-07b is a bedrock well).

Table 3-1: Monitoring Well Statistics (feet)

	MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-07b	MW-09
Maximum	11.63	13.1	22.12	13.58	14.25	27.20	26.37	23.18
Minimum	4.92	9.26	9.45	6.87	6.89	24.20	22.15	15.14
Average	7.46	10.98	12.69	8.46	9.66	25.21	26.37	17.89
Standard Deviation	1.28	0.65	2.15	1.05	0.99	0.64	2.18	1.74
Range	6.70	3.85	12.67	6.71	7.36	3.00	10.58	8.04

	MW-11	MW-13	MW-14	MW-15	MW-16	MW-17	MW-17b	USGS DOVER 10R
Maximum	6.65	6.54	15.67	17.89	14.25	7.11	14.43	35.2
Minimum	2.69	4.09	7.56	5.36	4.50	4.02	4.07	30.58
Average	4.07	5.42	9.48	8.77	6.81	5.47	7.34	32.08
Standard Deviation	0.69	0.26	1.39	2.59	1.42	0.53	1.74	0.36
Range	3.96	2.45	8.11	12.53	9.75	3.09	10.36	4.62

Graphs showing water levels and precipitation for each monitoring well (as depth to water) are provided in **Appendix A**. Observations for each well are discussed below:

MW-01, located on Hunter's Path, is 25-foot deep and installed near the boundary between the Mill Brook valley sand and gravel deposits and adjacent till deposits (**Plate 1**). The sand and gravel deposits associated with Mill Brook are part of the Zone II that provides recharge to the Colonial Water Company's Francis Street Wells which are about one-half mile downgradient of MW-01 (**Plate 2**).

Results from this monitoring well show depth to water (DTW) readings with a 6.70-foot range of drawdown and an average DTW of 7.46 feet as presented in **Table 3-1**. The well shows a decrease in DTW following precipitation events. This is particularly evident following the two largest precipitation events where the DTW decreased by approximately 2 feet from June 28th to July 1st, 2020, in response to 5.03 inches of precipitation and 1.2 feet from July 9th to 11th, 2021 with 3.67 inches of precipitation. The well also exhibits steady response to drier periods. This is evident from the approximate 2.5-foot DTW increase between July and mid-August 2020 where only 2.1 inches of precipitation fell in the area.

MW-02, located on Tubwreck Drive, is a very shallow well installed in till near Tubwreck Brook (**Plate 1**). Upon refusal at 12 feet (inability to drill beyond this point due to subsurface conditions), there was only about 1.55 feet of water in the well. There is a non-community well (Powissett Farms) near the headwaters of Tubwreck Brook about 1,800 feet upgradient. MW-2 was observed to go dry between September and October 2019 and intermittently between July and November 2020 as the water level fell below 12 feet.

Results from this monitoring well show DTW readings with a 3.85-foot range of drawdown and an average DTW of 10.98 feet as presented in **Table 3-1**. The well shows a decrease in DTW (increase in water level) following precipitation events. This is most evident following the largest precipitation events where the DTW decreased by approximately 1.1 feet from June 28th to July 1st, 2020, in response to 5.03 inches of precipitation. The well also exhibits an expected response to drier periods. This is evident from the approximate 1.7-foot increase between July and mid-August 2020 where only 2.1 inches of precipitation fell in the area.

MW-03, located on Snow's Hill Lane, is 19 feet deep and installed in till deposits (**Plate 1**). The well is near the upgradient edge of Zone II for Medfield's wells about 1.75 miles downgradient (**Plate 2**).

Results from this monitoring well demonstrate DTW readings with the highest range at 12.67 feet and an average DTW of 12.69 feet as presented in **Table 3-1**. The well shows a decrease in DTW following precipitation events. This is most evident following the largest precipitation events where the DTW decreased by approximately 1.3 feet between June 28th to July 1st, 2020, in response to 5.03 inches of precipitation and 1.68 feet from July 9th to 11th, 2021 with 3.67 inches of precipitation. The well also exhibits increase in response to drier periods, although a bit more significant as compared to MW-01 and MW-02. This is evident from the approximate 4.04-foot increase between July and mid-August 2020 where only 2.1 inches of precipitation fell in the area. No anomalous readings were captured during the monitoring period.

MW-04 is located on Grand Hill Drive near the headwaters of North Brook, the well is shallow at 13 feet deep and installed in till deposits (**Plate 1**). The location is near the upgradient edge of the Zone II for Medfield's wells about 1.5 miles downgradient (**Plate 2**). Wetlands on the north side of Grand Hill Drive drain through a culvert under the roadway and discharge immediately adjacent to the monitoring well.

Results from this monitoring well demonstrate DTW readings with a 6.71-foot range of drawdown and an average DTW of 8.46 feet; basic statistics and manual DTW readings during site visits are provided in

Table 3-1. The well shows an expected decrease in DTW following precipitation events. This is most evident following the largest precipitation events where the DTW decreased by approximately 2.1 feet between June 28th to July 1st, 2020, in response to 5.03 inches of precipitation. The well also exhibits a significant increase in response to drier periods. This is evident from the approximate 3.15-foot increase between July and mid-August 2020, where only 2.1 inches of precipitation fell in the area. No new anomalous events were observed.

MW-05 is located on Bridge Street near a boat launch/public access to the Charles River, approximately 75 feet east of the riverbank. The well extends 25 feet into coarse glacial deposits as shown on **Plate 1**. There are no public supply wells within 1.75 miles of this monitoring well, as shown in **Plate 2**.

Results from this monitoring well show DTW readings with a 7.36-foot range of drawdown and an average DTW of 9.66 feet as presented in **Table 3-1**. The well shows an expected decrease in DTW following precipitation events. This is most evident following the largest precipitation events where the DTW decreased by roughly 1.36 feet between June 28th to July 1st, 2020, in response to 5.03 inches of precipitation. The DTW also significantly increased by approximately 2.9 feet in response in the dry period between July and mid-August 2021.

MW-06 is located adjacent to 6 Centre Street and is sited within an area of mapped coarse glacial deposits (**Plate 1).** The drillers encountered difficulty during installation and refusal was encountered at 25 feet. The final depth to water upon installation was deep at 23 feet. The CWC's Knollwood and Picardy Lane Wells are located nearby, approximately 0.5 miles north and 0.6 miles northeast respectively. Both company's wells however are upgradient with Zone IIs that do not overlap with the monitoring well (**Plate 2**). Additionally, the Picardy Lane well (bedrock) is inactive.

MW-06's transducer was removed from the monitoring well in July 2019 when the well went dry as detailed in previous technical memos.

MW-07B: This well is installed into bedrock 62 feet deep beneath an overburden of coarse glacial deposits (**Plate 1**). The Colonial Water Company's Knollwood and Picardy Lane Wells are located nearby, approximately 0.5 miles north and 0.3 miles northeast respectively. Both company's wells however are upgradient, with Zone IIs that do not overlap this monitoring well (**Plate 2**). Additionally, the Picardy Lane well (bedrock) is inactive. However, there are a number of private wells in this area.

Results show this well has a delayed responses to precipitation events that is to be expected of bedrock wells. Statistics calculated from the DTW readings over the monitoring period are presented in **Table 3-1**

and show MW-7B to have the third largest range in water level observed (10.58 ft). The water level trend also closely resembles the USGS Well 10R.

MW-09 is 25 feet deep and located within the Town's Caryl Park in an area mapped as coarse glacial deposit (**Plate 1**). The monitoring well is approximately 700 feet south of the Town of Dover's Caryl Park supply well for the Chickering School. Additionally, the Old Farm Water System's Drilled Well #01 is located approximately 0.25 miles south. However, the two wells may be hydrologically isolated because a reach of the Noanet Brook runs west to east between them.

Results from this monitoring well continue to show atypical DTW readings, as this well shows minimal responses to precipitation events. Over the study period water levels had an 8.04-foot range of drawdown and an average DTW of 17.89 feet as presented in **Table 3-1**. The unresponsiveness of the well to the larger precipitation events may suggest that a confining layer is present or that a silt layer is restricting flow through the well screen as previously described in the first Hydrology report. However overall, the water level trend closely resembles the USGS Well 10R.

MW-11 is located on Springdale Ave and is installed to a depth of 25 feet. The well is located within a mapped coarse glacial deposit (**Plate 1**) and adjacent to an unnamed tributary of Trout Brook. The area surrounding the well was saturated and moist/muddy for the entire monitoring period. MW-11 is 1,500 feet north/northwest of CWC's Knollwood Drive well and 1,200 feet from a groundwater discharge location (**Plate 2**). Also nearby are the CWC-owned Springdale Farms Trust wells which are 2,000 feet north (and downgradient). MW-11 lies within the Zone IIs for each of the public wells mentioned above.

Results from this monitoring well show typical DTW readings with a 3.96-foot range of drawdown and an average DTW of 4.07 feet as presented in Table 3-1. The well shows an expected decrease in DTW following precipitation events; this is most evident following the largest precipitation events where the DTW decreased by slightly less than 0.6 feet from June 28th to July 1st, 2020, in response to 5.03 inches of precipitation and 0.55 feet from July 9th to 11th, 2021 with 3.67 inches of precipitation. The well also exhibits shallower-sloped increases in response to drier periods. This is evident from the approximately 0.81-foot increase between July and mid-August 2021.

MW-13 is located on Haven Street adjacent to the USGS monitoring station on the Trout Brook. The monitoring well is 1,500 feet north (downstream) of CWC's Springdale Farm wells (**Plate 1**). Additionally, it is located in the Zone II for Springdale Farm Wells and CWC's Chickering Drive Well located about 0.5 miles northeast.

Results from this monitoring well show DTW readings with a 2.45-foot range of drawdown and an average DTW of 5.42 feet as presented in **Table 3-1**. The well shows an expected decrease in DTW following precipitation events although are more muted than other wells as indicated by the DTW range and standard deviation. Responses are most evident following the largest precipitation events where the DTW fluctuated only slightly. The well also exhibits typical and steady shallower-sloped increases in response to drier periods. This is evident from a steady 0.75-foot increase in the drier period experienced between July through mid-August 2021. The location of this well next to the Trout Brook, a perennial stream, is likely responsible for the wells more consistent water level.

MW-14 is located along Chickering Drive and is near the boundary of till and coarser post glacial deposits and alluvial deposits (**Plate 1**). The monitoring well is about 500 feet north of and within the Zone II of CWC's Chickering Drive well.

Results from this monitoring well show DTW readings with an 8.11-foot range of drawdown and an average DTW of 9.48 feet as presented in **Table 3-1**. The well shows an expected decrease in DTW following precipitation events. The well also exhibits a steady increase in response to the drier period experienced between July through mid-August 2021.

MW-15 is located on the eastern side of Main Street near an intermittent stream that discharges to the Charles River. The well was installed to 20 feet and located in a mapped coarse glacial deposit (**Plate 1**). According to **Plate 2**, the monitoring well is not within a Zone II, with the Meadowbrook Water Trust wells (near MW-17) about 0.5 miles north.

Results from this monitoring well demonstrate DTW readings with a 12.53-foot range of drawdown and an average DTW of 8.77 feet as presented in **Table 3-1**. The well shows an expected decrease in DTW following precipitation events. The wells response to events are more exaggerated in this well as evident by the large range and standard deviation and visually on the graph in Appendix A. Responses to precipitation events are most evident following two of the largest precipitation events; on December 1st, 2020 where the DTW decreased by slightly less than 1-foot in response to 2.59 inches of precipitation, and an approximately 1.43 feet decrease in DTW on May 29th, 2021 in response to 1.93 inches of precipitation. Little response was registered during the June 28th to July 1st, 2020, precipitation event which generated 5.03 inches of precipitation. This is likely due to the already declining water table elevations (increase in DTW) from the drier summer season.

MW-16 is located on Dedham Street and has a total depth of 25 feet. The monitoring well is installed adjacent to wetlands and the Powissett Brook which discharges to the Charles River about ¼ mile north

(**Plate 1**). The geology in this area is not mapped but would be expected to consist of floodplain alluvium. There are no public supply wells or Zone IIs within a mile of the Well.

Results from this monitoring well show typical DTW readings with a 9.75-foot range of drawdown and an average DTW of 6.81 feet as presented in **Table 3-1**. The well shows an expected decrease in DTW following precipitation events. These are most evident following the two of the largest precipitation events where the DTW decreased by approximately 1.36 feet on October 17th, 2020 in response to 1.95 inches of precipitation and approximately 1.0 feet on May 29th, 2021 with 1.93 inches of precipitation. Little response was registered during the June 28th to July 1st, 2020, precipitation event which generated 5.03 inches of precipitation. This is likely due to the already declining water table elevations (increase in DTW); this is evident from the steady 3.03-foot increase between July through mid-August 2020.

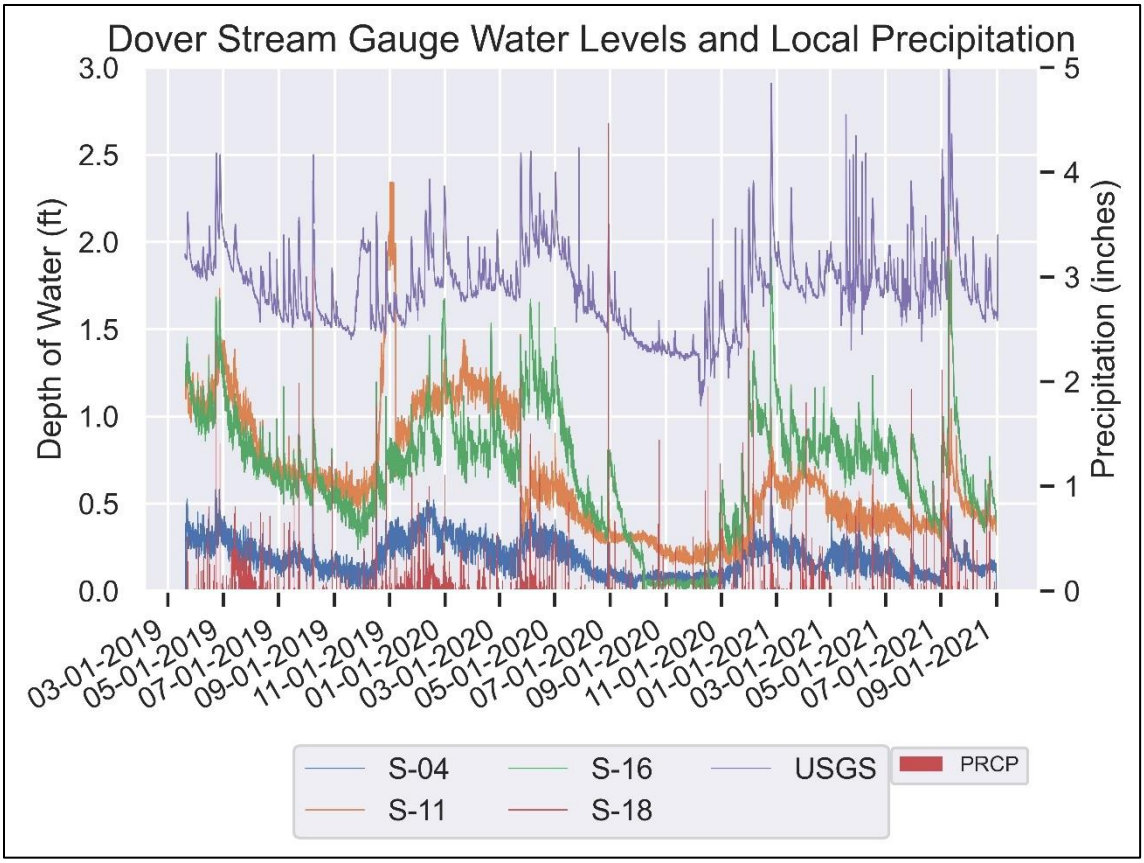
MW-17 and 17b is one monitoring well with multiple transducers. The original MW-17 transducer originally malfunctioned and was replaced with the MW-17b transducer in June 2020. The warranty replacement transducer is awaiting deployment to the newly constructed monitoring wells MW-18 and 19. This well also contains a barometric transducer used for barometric compensation and correction in the data processing. The well is located along Brook Road in a grassy flat area and is drilled to a depth of 25 feet. **Plate 1** shows that the well is installed in an area that is mapped coarse glacial deposits less than ¼ mile from the Charles River. MW-17 is located in the Zone II of the Needham supply wells on the opposite side of the Charles River. MW-17 is adjacent to an inactive well formerly operated by Meadowbrook Farms Trust. This area is now served by the Natick Water Department.

Results from MW-17b show typical DTW readings with a 10.36-foot range of drawdown and an average DTW of 7.34 feet as presented in **Table 3-1**. The well shows an expected decrease in DTW following precipitation events. These are most evident following the two of the largest precipitation events where the DTW decreased by 1.24 feet on October 17th, 2020, in response to 1.95 inches of precipitation and approximately 1.72 feet on May 29th, 2021, with 1.93 inches of precipitation. Little response was registered during the June 28th to July 1st, 2020 precipitation event which generated 5.03 inches of precipitation. This is likely due to the already declining water table elevations (increase in DTW). The well also exhibits typical increase in response to drier periods. This is evident from the steady 3.24-foot increase between July through mid-August 2020.

3.2 PIEZOMETERS AND STREAM GAUGE RESULTS

Figure 3-2 shows the full record of stream gauge water level data in local streams along with precipitation data. The record was stitched together and includes the original monitoring period of Mar. 20th to Nov. 11th, 2019, the second monitoring period Nov. 11th, 2019 to June 10, 2020, and the latest monitoring period June 10th, 2020 to Sept. 1st, 2021.

Figure 3-2: Depth of Water at Dover Stream Gauges and USGS Trout Brook Gauge with Local Precipitation Data



Individual stream gauge plots are shown in **Appendix B**. Trends from all the gauges generally correlate to the USGS Trout Brook Gauge as well displaying responsiveness to precipitation events. Some gauges do show anomalous readings that are further described below.

Table 3-2 shows basic statistics calculated from water level data of each stream gauge transducer. Note that negative numbers read by transducers represent a 0-foot water level and were corrected to read as such. Negative transducer readings are possible because the transducers are measuring pressure which are then corrected by a barometric pressure reading (barro-transducer). This can result in negative readings if no water column over the transducer is present.

Table 3-2: Stream Gauge Well Statistics (feet)

	SG-02	SG-04	SG-11	SG-16	SG-18
Maximum	2.01	0.71	2.34	2.20	0.24
Minimum	0	0	0	0	0
Average	0.62	0.19	0.86	0.75	0.15
Standard Deviation	0.30	0.15	0.32	0.29	0.045
Range	2.01	0.71	2.34	2.20	0.24

All manual measurements are presented as positive numbers, but it should be noted that the Inside PZ/Outside PZ measurements are from the Top of Casing (TOC) down to the water level, and the Depth of Water measurements are from the streambed up to the water level.

From the Inside PZ and Outside PZ measurements, the stream can be determined to be either gaining or losing water from communication with the groundwater as follows. In a gaining stream the stream is being fed groundwater that sustains flow while the groundwater table is higher than that of the stream. In relation to the piezometer measurements, the Inside PZ height (groundwater level) will be higher that the Outside PZ height (stream water level). In a losing stream, the opposite is true, and the groundwater table is below the streambed resulting in the stream losing water as it drains into the subsurface. This is typically seen in intermittent or ephemeral streams that exist during periods of high precipitation or during snow melt but disappear in drier months. In losing streams, piezometer measurements Inside PZ height (groundwater level) are lower than that of the Outside PZ height (stream water level).

Summary plots are constructed for each site with both a stream gauge and monitoring well. This allows for the comparison of surface water and groundwater interaction. Precipitation is also presented for reference.

PZ-2 & SG-02: This stream gauge and piezometer are in a section of Tubwreck Brook approximately 75 feet west of MW-02. It is installed in a narrow channelized rocky streambed that transects a local wetland that is approximately 0.25-miles south of an unnamed pond that serves as the headwaters for the brook. The area is mostly rural with forested lots surrounding the brook with some small farms immediately adjacent to the unnamed pond upstream.

Results from the SG-02 were corrupted when retrieved during the September 1st site visit. Data showed date ranges from different periods erroneously in “1990”; he datalogger was reset and re-deployed.

Upon inspection of the data, it appears that the data logger continued logging but there is no way to match up time periods or be certain there is a match.

Manual readings of measured depth of water, shown in **Table 3-3,** between the outside and inside of the piezometer were used as described above to determine if the stream was losing or gaining water. Transducer readings from March 2019 – July 2020 show the stream gauge not dropping below zero, suggesting the water body is a perennial stream. The condition between losing/gaining demonstrates gaining in the spring and fall and losing during the warmer months.

Table 3-3: Manual Readings from PZ-02

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
03/20/2019 15:20	0.96	2.28	6.25	Losing
05/10/2019 11:20	1.01	2.23	2.11	Gaining
06/14/2019 9:25	0.61	2.63	2.25	Gaining
07/10/2019 9:00	0.38	2.86	2.9	Losing
11/25/2019 8:32	0.63	2.61	2.15	Gaining
7/10/2020 9:44	0.34	2.6	2.45	Gaining
9/1/2021 13:10	0.44	2.5	2.5	Gaining

PZ-4 & SG-04: This stream gauge and piezometer are located just downstream of a pond serving as the headwaters for the North Brook. The pond is surrounded by two to three-acre wooded lots with single family dwellings close to the road; no dwellings are immediately adjacent to the ponds. The pond appears to be manmade as the topography on the eastern side near the outlet resemble a berm with engineered slopes and topped with significantly smaller trees than the surrounding stand. The outlet of the pond features a constructed spillway and unmaintained control structure. The gauge is installed approximately 50 feet downstream of the pond's outlet control structure into a mostly sandy streambed. The stream immediately downstream of the control structure is naturally channelized with sides one to two feet in height and flows eastward, with the topography flattening and discharging to wetlands with a defined stream course. The monitoring well is installed immediately adjacent to Grand Hill Road and along an ephemeral watercourse and culvert that is approximately 550 feet due north of the SG/PZ.

Results from the stream gauge transducer are plotted in Appendix B along with the USGS Trout Brook stream gauge and local precipitation. Results demonstrate typical responses to precipitation and closely follow trends observed in the Trout Brook. Statistics from the transducer logs provided in Table 3-2 indicates an average depth of water of 0.19 feet with a range of 0.71 feet. Table 3-4 shows manual readings of Depth of Water (ft) from the piezometers which generally agree with these statistics.

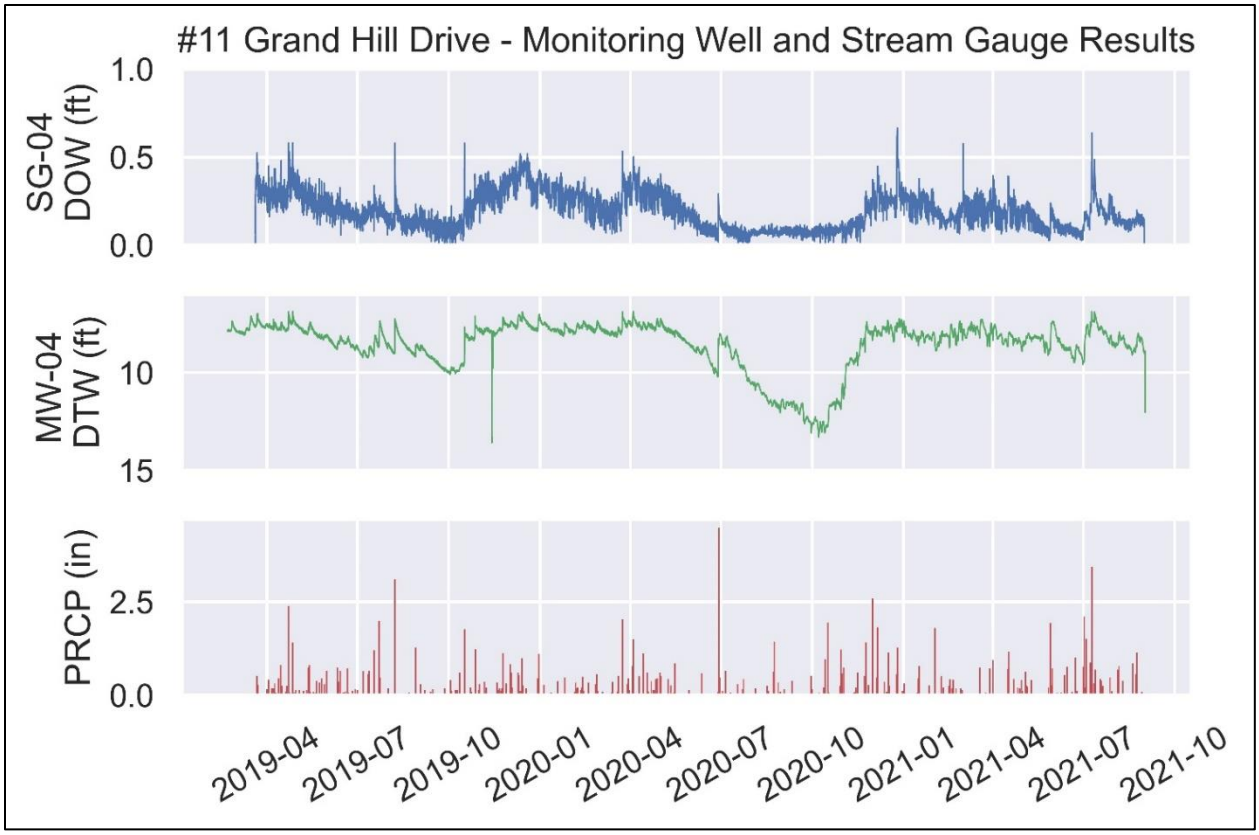
The stream appears to have run dry in late September to early October 2019, and July to November 2020, the driest period of the year, it appears that the stream ran dry as the minimum readings recorded by the transducer were zero or negative (readings can be zero because transducers are directly measuring pressure). This suggests that the surface water from the pond may have fallen below the outlet structure. The condition between losing/gaining continues to demonstrate gaining in the spring and fall and losing during the summer months.

Table 3-4: Manual Readings from PZ-04

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DOW (ft)	Inside PZ DOW (ft)	Hydrologic Status
03/20/2019 12:19	0.29	5.09	5.58	Losing
05/10/2019 12:19	0.22	5.16	4.98	Gaining
06/14/2019 11:00	0.38	5	5	Losing
07/10/2019 11:36	0.18	5.2	5.27	Losing
11/25/2019 10:10	0.33	5.05	4.9	Gaining
6/10/2020 11:27	0.14	5.18	5.25	Losing
9/1/2021 11:45	0.13	5.19	4.61	Gaining

Figure 3-3 shows the summary plots of the stream gauge, monitoring well and local precipitation. Both the stream gauges and monitoring wells demonstrate similar responses to precipitation events, as well as declining water levels of both in the most notable drier season between July – October 2020. These trends between the MW and SG/PZ generally agree with the gaining/losing status in the manual readings.

Figure 3-3: Site 04 – Stream Gauge and Monitoring Well Results



PZ-11 & SG-11: This stream gauge and piezometer is installed in the middle of an unnamed brook approximately 25 feet south (upstream) of the culvert that transects Springdale Ave. The brook flows north and discharges into the Trout Brook near Channing Park approximately 1000 feet northwest of the gauge. Mapping resources indicate a series of small water bodies and connecting ephemeral streams and watercourses that ultimately drain to and collect at this gauge's location. The contributing catchment is mostly rural consisting of mostly wooded lots and pasture/fields with single family dwellings and secondary structures such as barns.

Results from the stream gauge transducer are plotted in Appendix B along with the USGS Trout Brook stream gauge and local precipitation. Results demonstrate typical responses to precipitation and closely follow trends observed in the Trout Brook. Statistics from the transducer logs provided in Table 3-2 indicates an average depth of water of 0.86 feet with a range of 2.34 feet. Table 3-5 shows manual readings of Depth of Water (ft) from the piezometers which generally agree with these statistics.

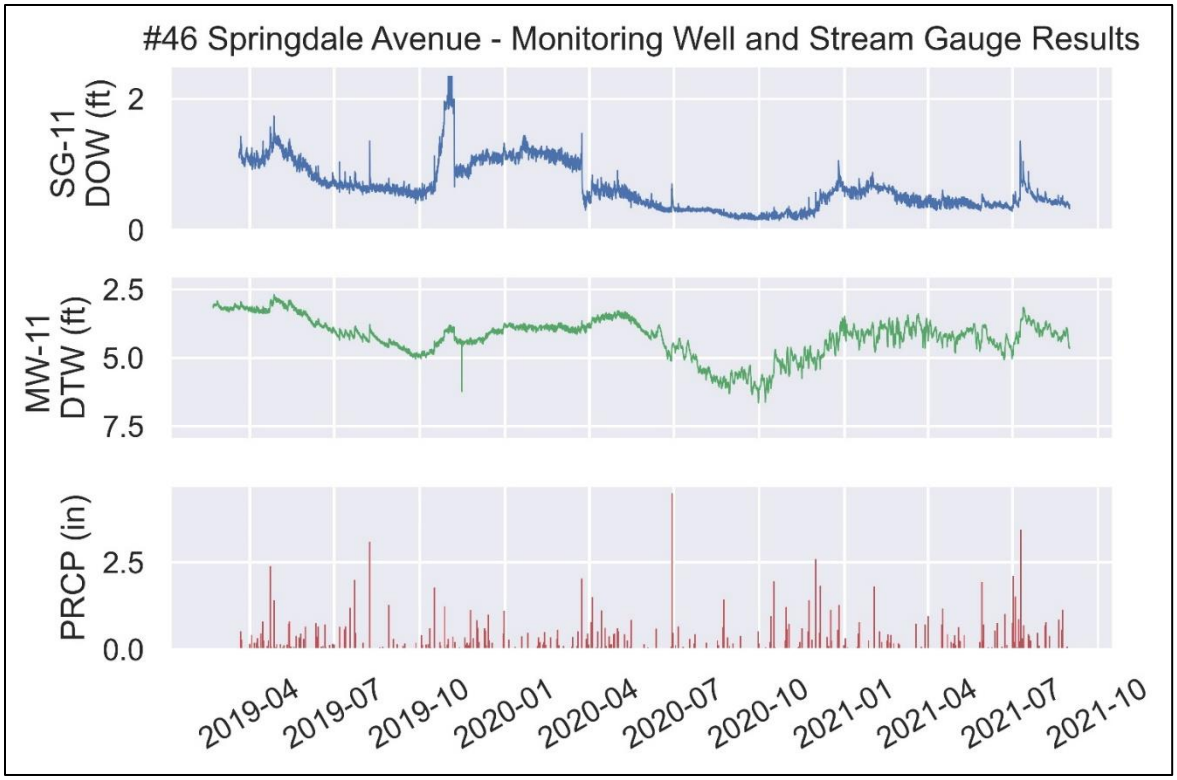
Table 3-5: Manual Readings from PZ-11

Date/Time of Manual Readings	Depth of Water (ft) *	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
03/20/2019 13:22	1.17	1.07	4.32	Losing
05/10/2019 13:22	1.08	1.156	1.19	Losing
06/14/2019 14:45	0.34	1.9	1.52	Gaining
07/10/2019 9:50	0.62	3.04	2.75	Gaining
11/25/2019 12:40	0.82	2.85	2.8	Gaining
7/10/2020 11:40	0.86	3.04	3.46	Losing
8/31/2021 14:00	0.46	3.44	3.1	Gaining

** Depth is approximate due to muddy and vegetative growth on bottom of stream*

Figure 3-4 shows the Site 11 summary plots of the stream gauge, monitoring well and local precipitation. Both the stream gauges and the monitoring well demonstrate similar responses to precipitation events. The monitoring well demonstrates more exaggerated response to the precipitation events as well as declining water levels in the most notable drier season between July – October 2020.

Figure 3-4: Site 11- Stream Gauge and Monitoring Well Results



PZ-13: This piezometer is installed in Trout Brook at the outlet of the culvert for Haven Street. It is immediately adjacent to the USGS Trout Brook stream gauge. The brook flows north and eventually

discharges into the Charles River about three quarters of a mile north. The drainage area upstream is approximately 3.72-square miles in size and includes Channing's Pond along with several other unnamed ponds. The contributing catchment is mostly rural consisting of wooded lots and pasture/fields with single family dwellings and secondary structures such as barns. No stream gauge transducer is installed here since it is directly adjacent to the USGS Trout Brook gauge.

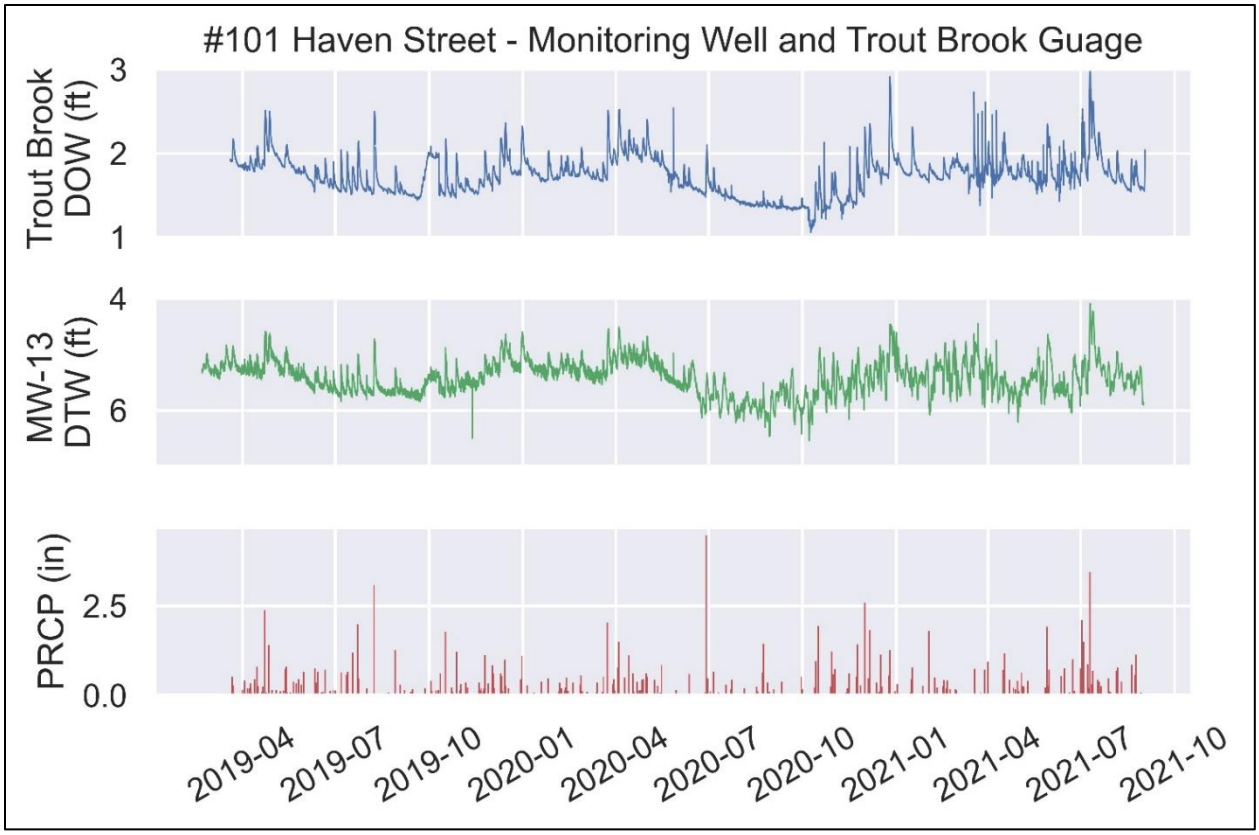
Manual readings of Depth of Water (ft) from the piezometers are presented in Table 3-6. The status between losing/gaining continue to demonstrate gaining in the spring and fall and losing in the summer months.

Table 3-6: Manual Readings from PZ-13

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
05/10/2019 8:48	1.09	1.12	0.74	Gaining
06/14/2019 11:50	0.96	1.25	0.93	Gaining
07/10/2019 12:10	1.04	1.17	1.45	Losing
11/25/2019 12:35	1.11	1.1	0.8	Gaining
7/10/2020 12:10	0.95	1.1	1.4	Losing
8/31/2021 13:45	0.75	1.3	1.03	Gaining

Figure 3-5 contains the summary plots of the USGS stream gauge, monitoring well and local precipitation. Both the stream gauges and the monitoring well demonstrate similar responses to precipitation events. Both the USGS Trout Brook gauge and monitoring well demonstrate declining water levels in the most notable drier season in July – October 2020.

Figure 3-5: Site 13 – USGS Stream Gauge and Monitoring Well Results



PZ-16: This piezometer (SG/PZ) is installed in the Powissett Brook upstream of the culvert under Dedham Street, with the associated monitoring well (MW-16) located approximately 150 feet to the west. The brook flows north discharging to the Charles River about a quarter of a mile north. The drainage area upstream includes a series of wetlands and unnamed ponds with the headwaters originating from Powissett and Nonnet Pond, both of which have control structures (dams). The contributing catchment is mostly rural consisting of wooded lots and forest.

Results from the stream gauge transducer are plotted in Appendix B along with the USGS Trout Brook stream gauge and local precipitation. Results from the stream gauge transducer and the associated monitoring well, MW-16, are plotted in Figure 3-6. Results show typical responses to precipitation with the stream gauge demonstrating large peaks following precipitation events. In the drier period between July and October 2020, the stream gauge appears to have run dry. Statistics from the transducer logs provided in Table 3-2 indicates an average depth of water of 0.75 feet with a range of 2.20 feet. Manual readings of Depth of Water (ft) from the piezometers presented in Table 3-7 generally agree with these statistics.

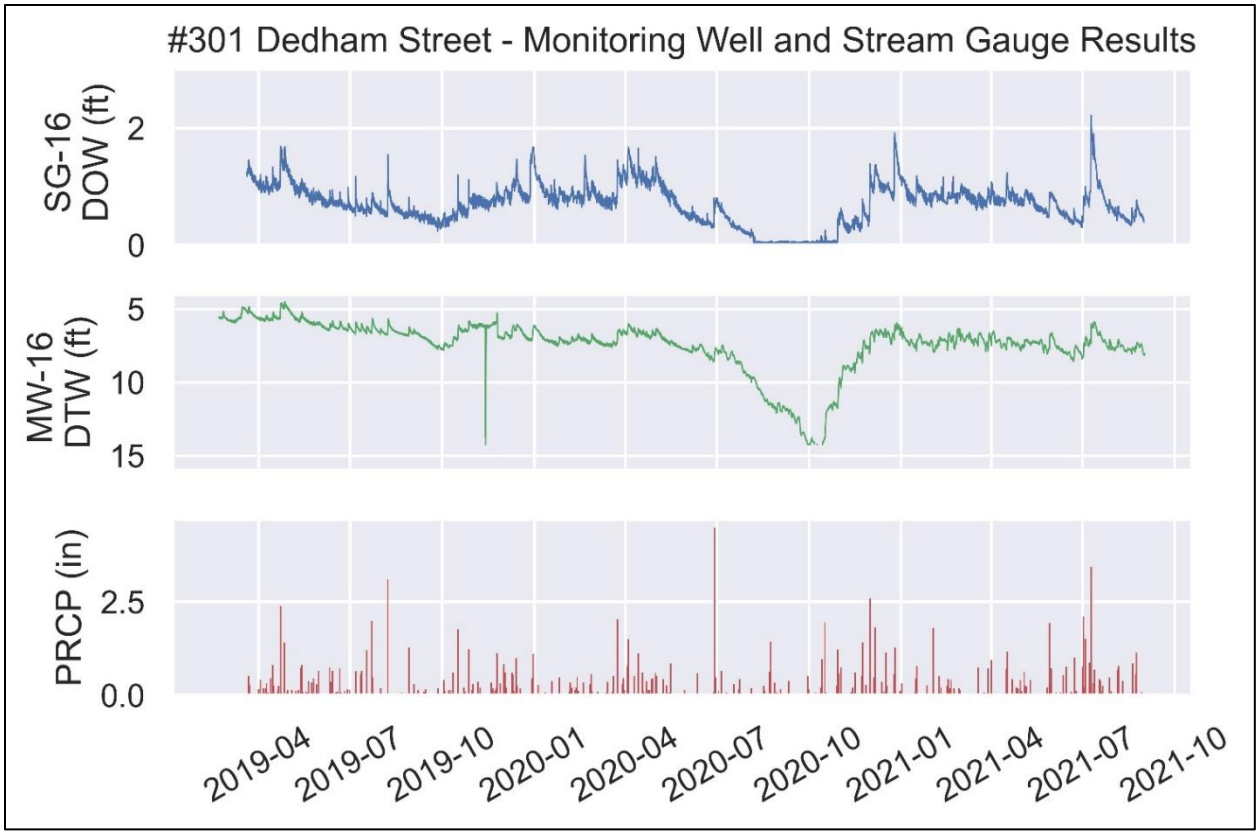
The status between losing/gaining continue to demonstrate gaining in the spring and fall and losing in the summer months.

Table 3-7: Manual Readings from PZ-16

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
03/20/2019 13:46	1.25	4.11	7.45	Losing
05/10/2019 13:46	0.88	4.48	4.37	Gaining
06/14/2019 14:14	0.76	4.6	4.5	Gaining
07/10/2019 13:00	0.74	4.62	4.83	Losing
11/25/2019 11:50	0.91	4.45	4.35	Gaining
7/10/2020 13:10	0.63	4.64	4.91	Losing
9/1/2021 10:55	0.45	4.82	4.43	Gaining

Figure 3-6 below contains the summary plots of the USGS stream gauge, monitoring well and local precipitation. Both the stream gauges and the monitoring well demonstrate similar responses to precipitation events.

Figure 3-6: Site 16 – Stream Gauge and Monitoring Well Results



PZ-18: This piezometer is installed in an unnamed brook upstream near #4A Valley Road. The brook flows north in the same brook and corridor as SG/PZ and MW-11. Upstream of the gauge is a series of unnamed ponds and connecting ephemeral streams and watercourses. The contributing catchment is mostly rural consisting of wooded lots and pasture/fields with single family dwellings and secondary structures such as barns.

Results from the stream gauge transducer are plotted in Appendix B along with the USGS Trout Brook stream gauge and local precipitation. This site does not have a co-located monitoring well. It appears that the flow is intermittent, and water is not always in the channel at a depth that the stream gauge is capable of reading. Of the results visible, they generally demonstrate typical responses to precipitation and follow trends observed in the Trout Brook. Statistics from the transducer logs provided in Table 3-2 indicates an average depth of water of 0.15 feet and a range of 0.52 feet which are skewed due to the abundance of null readings (water level too low to measure). Manual readings of Depth of Water (ft) from the piezometers presented in Table 3-8 generally do demonstrate significantly low readings**.**

The status of the brook demonstrates a consistent losing status over the entire monitoring period.

Table 3-8: Manual Readings from PZ-18

Date/Time of Manual Readings	Depth of Water (ft)	Outside PZ DTW (ft)	Inside PZ DTW (ft)	Hydrologic Status
05/10/2019 10:04	0.20	2.7	4.87	Losing
06/14/2019 9:51	0.20	2.7	5.2	Losing
07/10/2019 10:31	0.01	3.2	5.5	Losing
11/25/2019 9:04	0.38	2.52	2.6	Losing
7/10/2020 14:00	0.04	2.88	5.38	Losing
8/31/2021 15:45	0.79	2.13	5.27	Losing

4 WATER QUALITY RESULTS

4.1 GROUNDWATER SAMPLING

Kleinfelder personnel conducted water quality sampling of eight of the fourteen monitoring wells between August 31st and September 1st 2021. Personnel used the EPA Low-flow sampling technique to purge approximately four well volumes prior to sampling. All wells were analyzed for pH, manganese, sodium, chloride, nitrate and nitrite and volatile organic compounds (VOCs). A minimum of one field blank per day was collected and trip blanks accompanied all sample shipments. Laboratory analytical reports are provided in Appendix C.

4.2 GROUNDWATER SAMPLING RESULTS

The sampling results are presented below in Table 4-1:

Table 4-1: Water Quality Results from Monitoring Wells Sampled August 31st and September 1st, 2021

Well ID#		MW-1	MW-3	MW-4	MW-7B	MW-9	MW-13	MW-15	MW-17b
Well Location		Hunter's Path	Snow's Hill Rd	Grand Hill Rd	Ben Arthur's Way	Caryl Park	Haven St.	Main St.	Brook Rd.
Lab Work Order #	---	21I0085-05	21I0085-04	21I0085-03	21I0085-02	21I0085-01	21H1648-03	21H1648-02	21H1648-01
Sampling Date	---	9/1/2021	9/1/2021	9/1/2021	9/1/2021	9/1/2021	8/31/2021	8/31/2021	8/31/2021
Analysis	Unit								
pH	s.u.	5.3	5.8	5.7	5.1	4.9	6.2	5.4	6.4
Manganese	mg/L	0.12	ND	0.21	0.033	ND	0.12	0.21	0.093
Sodium	mg/L	100	27	130	69	5.2	52	290	49
Chloride	mg/L	180	37	180	110	4	95	450	63
Nitrate as N	mg/L	3	1.2	0.37	0.5	ND	4.3	2.5	3.3
Nitrite as N	mg/L	ND	ND	ND	ND	ND	ND	ND	ND
VOCs	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

**ND indicates non-detection or below methodology and equipment detection limits*

pH – All the wells continued to show fairly low pH between 4.9 and 6.4 s.u. These values remained relatively consistent compared to the November 2019 sampling event. Lower pH represents acidic groundwater which is typically found across Massachusetts and New England. If the wells were to be used as a public drinking water supply, pH adjustment would be needed to decrease the potential corrosion impacts on distribution system components.

Manganese –Wells MW-1, 4, 7b, 13, 15, 17b continued to exceed the Federal and Massachusetts secondary maximum contaminant level (SMCL) of 0.05 mg/L; of which all except MW-7b exceed the health advisory (HA) or Office of Research and Standards (ORSG) concentration of 0.3 mg/L. MW-3 and MW-9 went down from the previous November 2019 sampling event to non-detect (ND). MW-7b was above the SMCL but below the ORSG standards.

- Manganese is considered an essential nutrient, however, prolonged exposure to levels over the Mass ORSG could lead to adverse health effects. Higher concentrations of manganese are typically found in overburden groundwater across Massachusetts and New England, so these results are not necessarily an indication of threats to the aquifer. However, manganese can increase in relation to changes in the oxidative state of the aquifer. This increase could result from significant land use changes, for example, from clearing of forested land, or from increased flooding due to beaver activity or other factors.
- From a treatment perspective, excessive concentrations of manganese lead to a degradation in water quality aesthetics. Manganese can precipitate out of the solution to form a black solid that can leave stains on toilets and sinks or on laundry. Recent water quality complaints in the CWC system are likely caused by excessive levels of manganese in their raw water which may lead them to require treatment. Many public water systems in Massachusetts experience high levels of manganese and have thus installed filtration systems to remove it.

Sodium and Chloride – Most of the monitoring wells had elevated levels of sodium and/or chloride, suggesting contamination from heavy use of road de-icing salt. All the wells tested with exception of MW-9, have sodium levels above the ORSG guidance level of 20 mg/L. Elevated sodium can be a health concern for consumers on low sodium diets. Elevated concentrations of chlorides contribute to water corrosivity as they are a primary driver of corrosion. In drinking water wells this could lead to mobilization of lead and copper in service lines and plumbing fixtures.

Nitrate and Nitrite - Nitrate was detected in all wells except MW-7b. All nitrate detections were below the federal and MassDEP maximum contaminant level (MCL) standard of 10 mg/L. Wells MW-1, 3, 15, and 17b all have nitrate concentrations above 1 mg/L which indicates that groundwater may be

influenced by septic tank discharge or other nutrient sources such as fertilizers. MW-13 had the highest level (4.3 mg/L).

Volatile Organic Compounds (VOCs) - VOCs are a group of organic compounds typically found in industrial applications, manufacturing, and petroleum products (gas stations). The presence of any of these compounds typically indicates some type of groundwater contamination by which a source(s) can be determined through hydrogeological studies. No VOCs were detected in any of the monitoring wells.

5 DISCUSSION AND RECOMMENDATIONS

5.1 GROUNDWATER AND STREAMFLOW TRENDS

Data on water levels in the monitoring network from this period (June 2020 to September 2021) were merged with the previous monitoring periods to continue to build upon baseline trends of the Town's water resources. The total monitoring period represents 924-days between February 20th, 2019 and September 1st, 2021.

General seasonal trends were reflected in most of the monitoring wells and were consistent with the USGS wells showing an increase in the water table elevation during the cooler months and a decrease following the summer, particularly during September and October. This is also consistent with regional trends as well as climate impacts such as precipitation. Stream gauges also followed these general trends with higher water levels in the cooler months and lower levels in the warmer months.

Both the monitoring wells and stream gauges were directly impacted by precipitation events. Almost all transducers measured increases in water levels directly following precipitation events. Additionally, in periods of little precipitation, all transducers measured slow decreases in water levels, as evident in the drier July to October 2021 period.

Updates to the investigation on public water systems continued to provide evidence of seasonal water usage trends that are exactly opposite of natural water levels. That is, highest usage in the warmer months with peaks in July through September, during the time of year that groundwater levels are most vulnerable. All public water supplier community wells in Dover show that residential usage exceeds Massachusetts Conservation standard of 65 RGPCD with the exception of CWC in 2019 which was slightly under that limit.

5.2 WATER QUALITY RESULTS INTERPRETATION

The general water quality across all monitoring wells continued to show fair results. The previous conclusions continue to stand that, if a monitoring well site were to be further developed into a public water supply well, treatment would likely be needed. Generally, all the wells had low pH but none that were atypical of wells seen in the region. Low pH levels observed can potentially corrode piping or plumbing fixtures and public water systems are required to implement corrosion control measures at

the levels observed. Most monitoring wells sampled had elevated levels of manganese, which is naturally occurring and also typical of the region. Treatment to remove manganese may need to be considered for potable use. Both pH and manganese levels are mostly influenced by the local geologic/overburden material and hydrogeologic conditions.

Nitrate concentrations over 1 mg/L in the water samples, continue to suggest that septic discharge may be influencing local levels. Although no samples had levels over the drinking water standard of 10 mg/L. Monitoring wells that tested with these higher levels (MW-01, MW-03, MW-04, MW-17) were adjacent to residential communities.

Many of the wells also had elevated levels of sodium and chlorides indicating that road de-icing salt is negatively impacting water quality. The Board of Health is also aware of private wells, particularly along Haven and Dedham Streets, experiencing very high sodium levels. The Town may wish to consider alternative de-icing methods and/or products that can reduce sodium loading to groundwater as previously recommended.

5.3 WATER USE PRACTICES - IMPLICATIONS AND STRATEGIES

5.3.1 Implications of Over-Pumping

Groundwater recharge areas for public water supply wells (designated by MassDEP as Zone II wellhead protection areas), which are protected from certain incompatible land uses, are established based on approved pumping rates listed in PWS Water Management Act withdrawal permits. Pumping that significantly exceeds those permit limits has the potential to negatively impact water availability in Dover aquifers, and to mobilize contamination sources, particularly during droughts such as the significant drought of 2016. Excessive seasonal non-essential outdoor water use is of particular concern-both by PWS pumping from wells within in Dover, but also potentially by private residential or commercial well owners. The enforcement of non-essential outdoor water use restrictions is the best strategy for preventing excessive aquifer drawdown during summer when groundwater supplies, as well as streams and wetlands, are more vulnerable.

5.3.2 Enforcement of Restrictions

One strategy for preventing negative impacts of excessive groundwater use is through enforcement of existing regulations and restrictions, or by establishing new regulations. Community water systems such as Colonial Water Company are authorized to withdraw water by a Water Management Act Permit

which includes several conditions which are imposed in order to protect aquifers, rivers and streams. The Permit has limitations on annual pumping (as a maximum daily average), individual well pumping rates, residential usage, allowable water loss (unaccounted for water), and seasonal water use. Based on recent water usage records, Colonial Water should be implementing a conservation program, imposing seasonal or streamflow-based restrictions, and implementing a volumetric offsets plan. The Water Management Act Regulations, 310 CMR 36.43, authorizes MassDEP to issue a full range of legal actions, including fines, administrative orders and penalties, at a minimum to those municipalities that violate their withdrawal limits. The Dover Board of Health has discussed this with the MassDEP, however to date, the MassDEP has taken no action to enforce Colonial Water's WMA Permit Conditions. Water conservation program techniques are briefly described in Section 7.3.3.

The Massachusetts Executive Office of Energy and Environmental Affairs (EOEA) recently published an updated Massachusetts Drought Management Plan (the DMP)[1]. The DMP encourages local authorities to engage in proactive drought management planning, beginning with the adoption of an Outdoor Water Use Bylaw. The Dover Board of Health is reviewing the EEA Model Outdoor Water Use Bylaw and evaluating the benefits.

5.3.3 Water Conservation Program

Water Conservation Programs are required to be implemented by WMA Permit holders. There are many different techniques that can be utilized to conserve water; the most effective typically include a robust public outreach and education component. MassDEP has recently conducted pilot programs in several communities and has developed useful tools for water suppliers to adopt or modify to their specific needs. The MassDEP's summer outdoor water use pilot program was found to be effective through the use of outreach materials. Communities involved in the pilot programs have included the Towns of Concord, Ipswich, Wenham, Hingham, Westford, and others. More information is available at the following links:

Pilot Program Description:

- https://www.mass.gov/doc/water-conservation-pilot-program-lawn-watering-reduction-2018-2-page-flyer/download

Healthy Lawn, Happy Summer Toolkit:

- https://www.mass.gov/forms/healthy-lawn-happy-summer-toolkit

[1] *https://www.mass.gov/doc/massachusetts-drought-management-plan/download*

5.4 PUBLIC WATER SYSTEM SUSTAINABILITY STUDY AND TECHNICAL ASSISTANCE

A proposed sustainability study will develop alternative options and cost benefits for the Town to either support the existing PWSs, develop regional partnerships, or develop a municipal supply. The analysis should support which option, or combination of options, provide both short- and long-term solutions that are feasible, cost-effective, financially, and environmentally sustainable, and acceptable to regulators and other stakeholders.

The study will ultimately provide analysis and planning to aid in complex decision-making processes. This proposed sustainability study will rely heavily on the findings and continued monitoring of this monitoring network. It is therefore essential that the monitoring network continue to be maintained and even expanded areas as discussed below.

5.5 RECOMMENDATIONS

This project continues to build upon baseline monitoring trends through its network of monitoring wells, stream gauges and piezometers. The network should continue to be maintained to further develop seasonal and annual patterns to help facilitate the identification of trends to guide decision making.

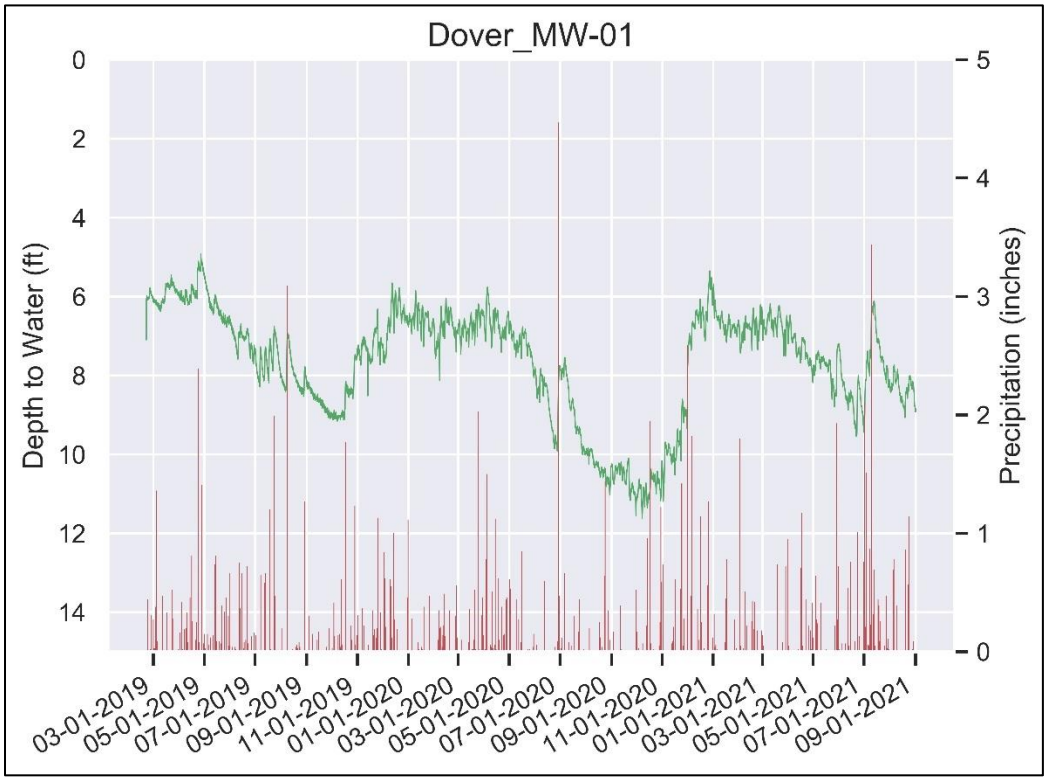
The following recommended next steps are presented for consideration by the Town of Dover:

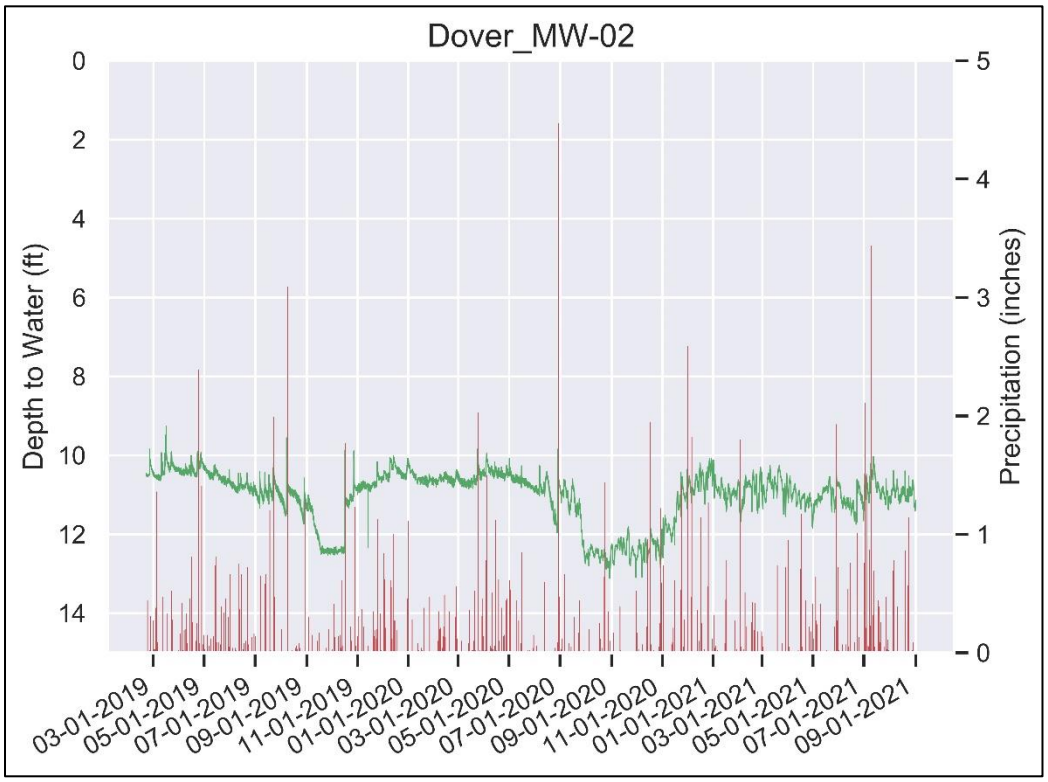
1. **Continue monitoring network data collection**: Dover should continue with annual monitoring to collect data, merge newly-collected data with existing/historic data and analyze trends. Monitoring Wells, stream gauges, and piezometers appear to be in good condition except for stream gauge SG-02. Kleinfelder personnel will download and check data collection for stream gauge SG-02 to confirm proper operation when onsite for the installation of new transducers for MW-18 and 19. Transducer lines should look to be replaced within the third to fifth year of monitoring which would require resetting some initial parameters on the transducers.
    - New monitoring wells MW-18 and MW-19 were recently drilled and should be developed and have transducers installed in the near future. Since these wells are close to existing PWSs, valuable information on their groundwater influence may be seen through their monitoring.
2. **Comparison Study with Public Water Supplier Annual Statistical Reports (ASR)** Continue to refine the seasonal and annual trends for each PWS with issuance of each years updated ASR.
3. **Correlation of daily or monthly pumping records** – Kleinfelder worked with the Town to try and obtain more detailed pumping records from the PWSs, however, all systems only provided their most current ASRs. This may be due to the recent acquisition of the CWC and/or the system simply does not monitor at that frequency. As the improvements to the CWC are made through the

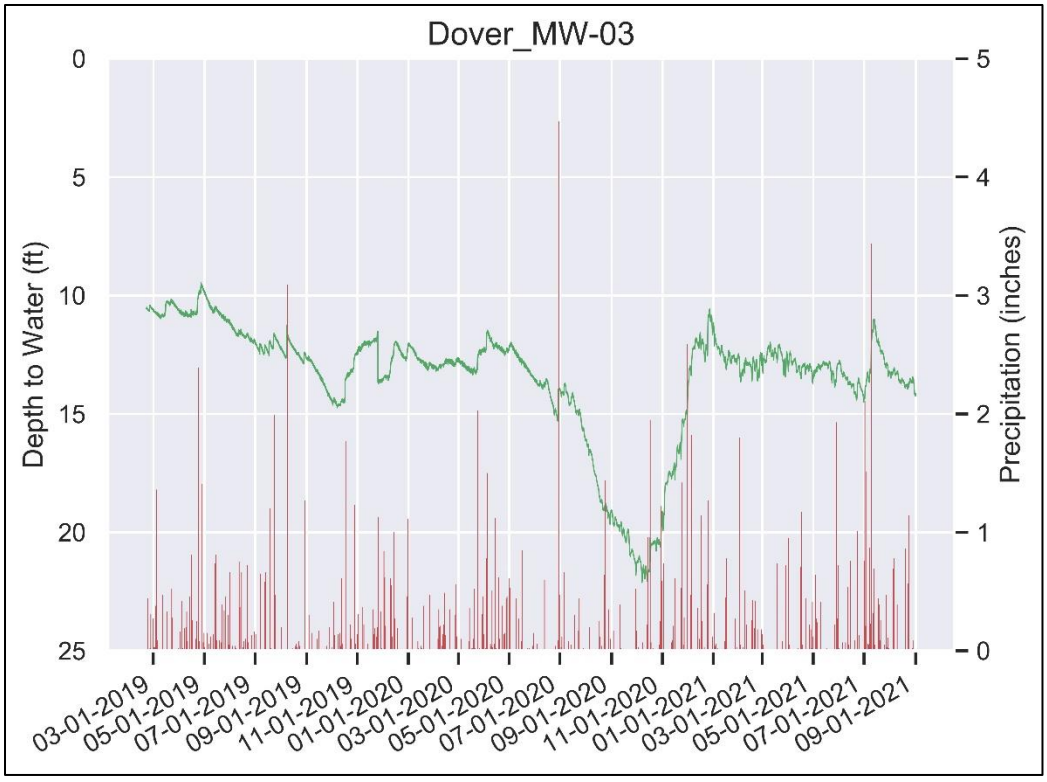
comprehensive assessment, the Town should advocate for installing water level transducers with at least daily readings. The smaller PWSs included in the study reported that they monitor their wells on a monthly basis. With the addition of MW-18 and MW-19 directly adjacent to public water supply wells, the Town should stress that daily pumping and or water level data from the PWS be required. This will make this analysis possible and potentially provide valuable insight into the effects of public/private well pumping on local groundwater levels.

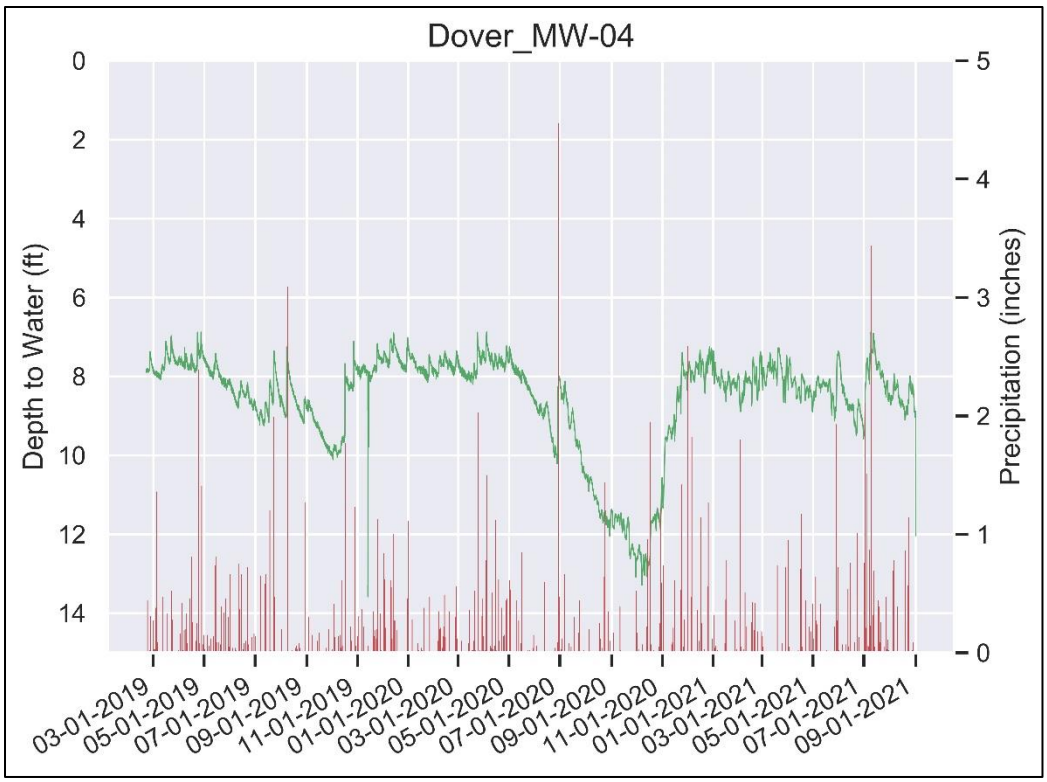
4. **Supplement Monitoring Network Data Gaps:** Supplement monitoring with additional monitoring well installation and water quality testing as follows:
   - With authorization of the Public Water System Sustainability Study and Technical Assistance program, new monitoring wells and/or piezometers and stream gauges may be suggested to aid in providing baseline monitoring to support planning efforts and proposed alternatives.
   - Water quality testing near high density or large community septic systems, either via existing wells, if available for testing, or installation of new monitoring wells.
   - Inclusion of testing of monitoring well network for PFAS contamination monitoring.

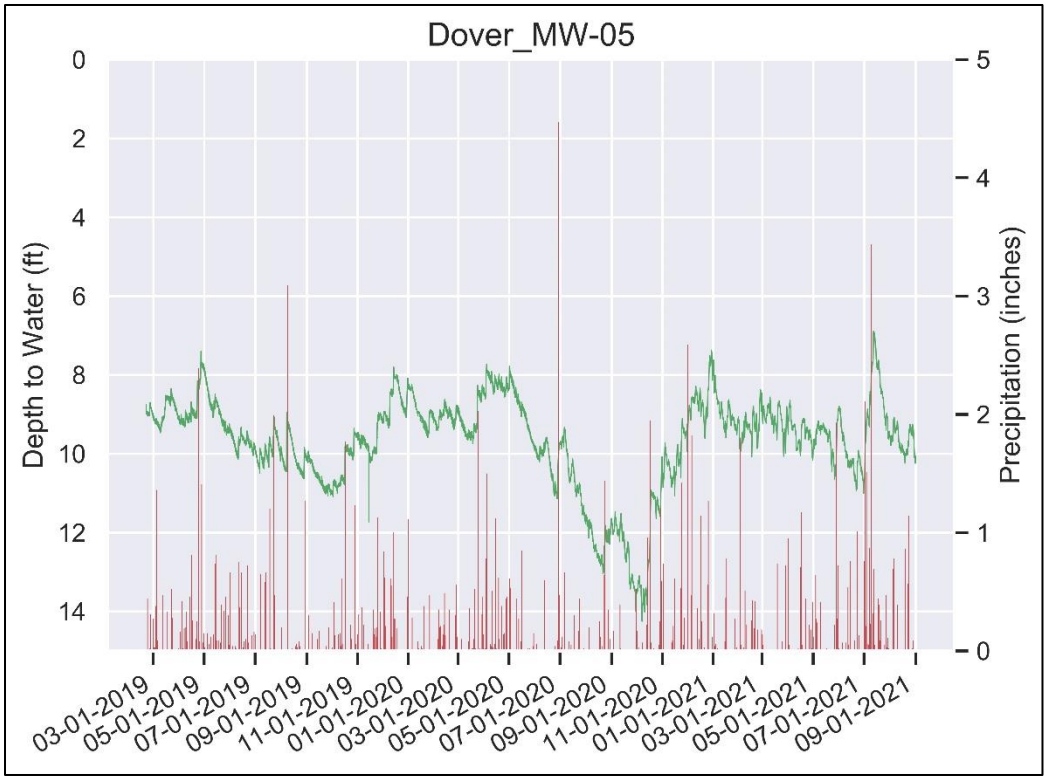
APPENDIX A – MOINTORING WELL GRAPHS

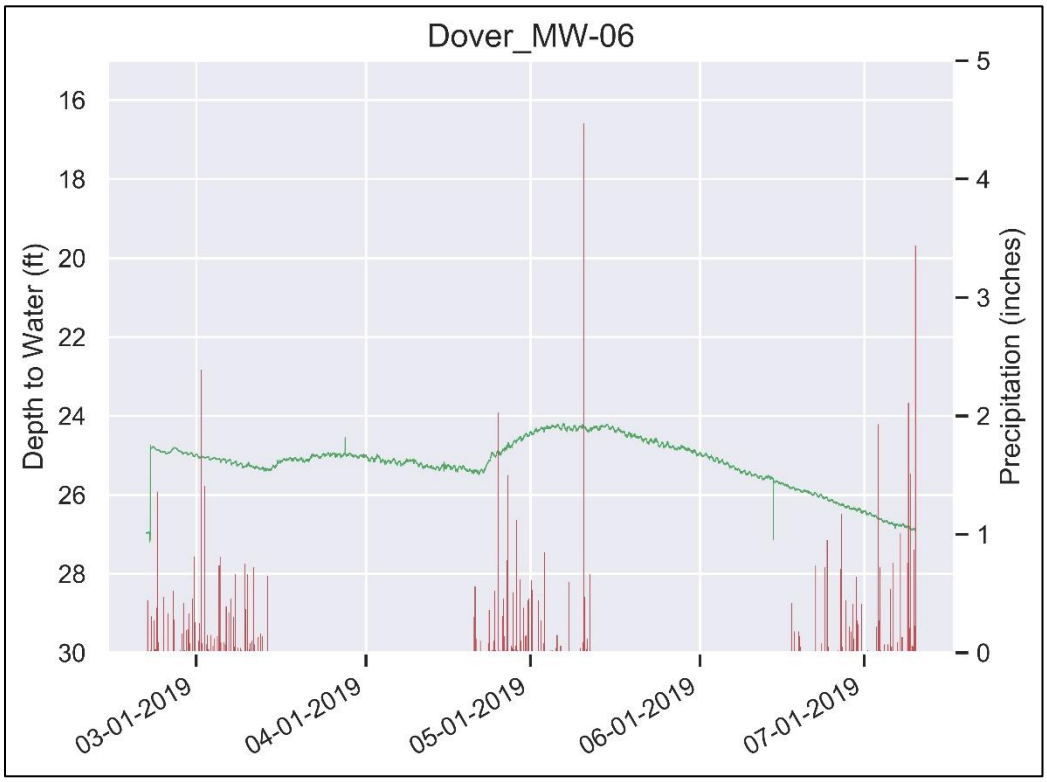


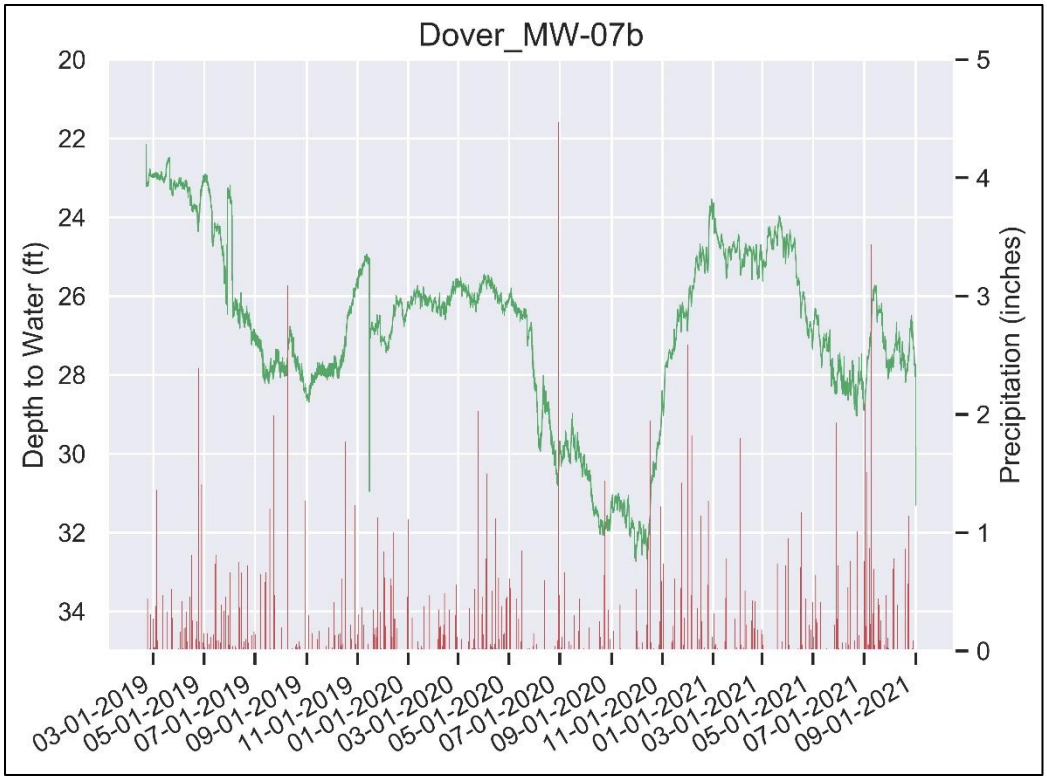


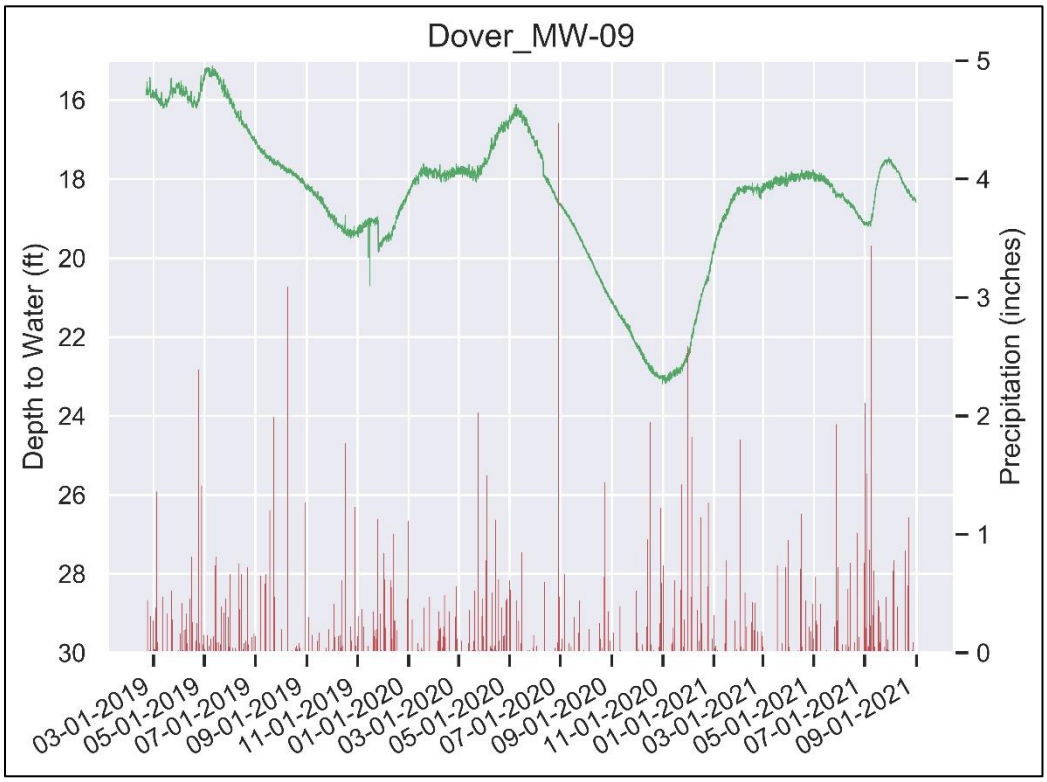


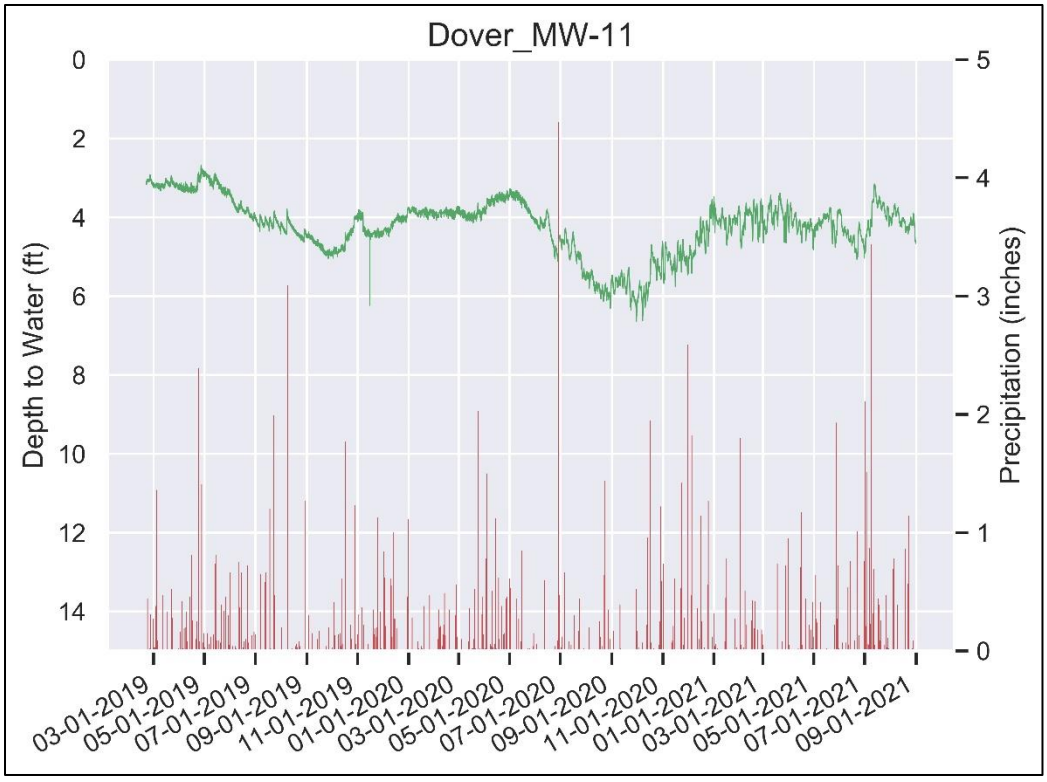


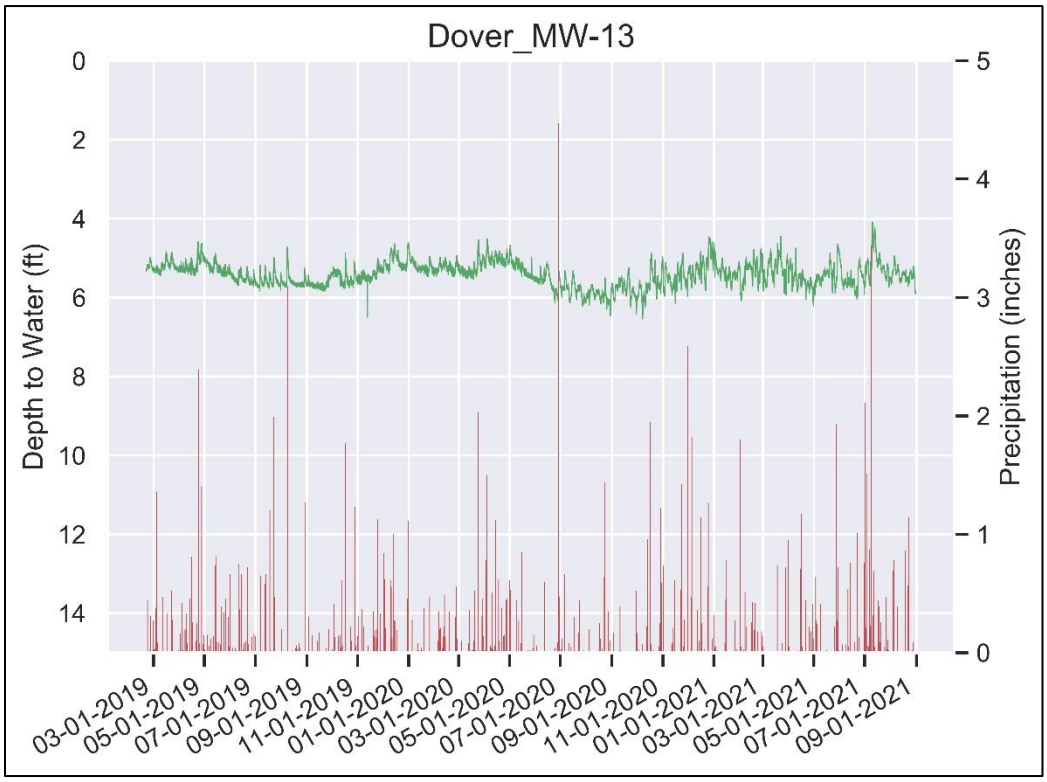


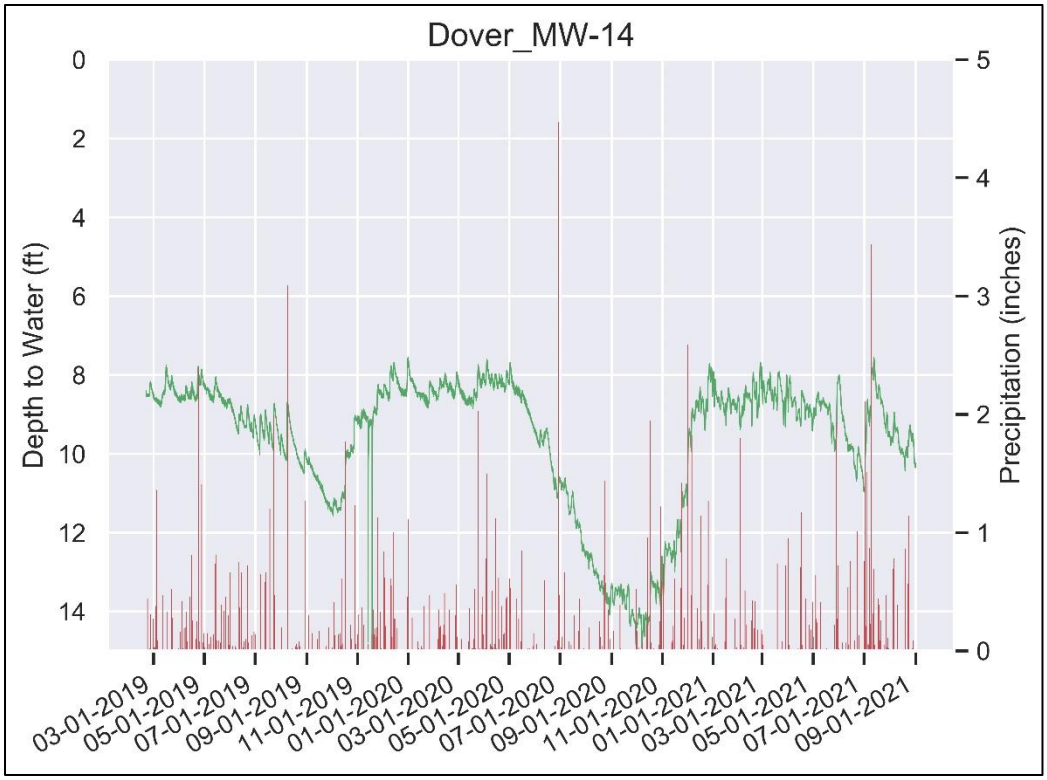


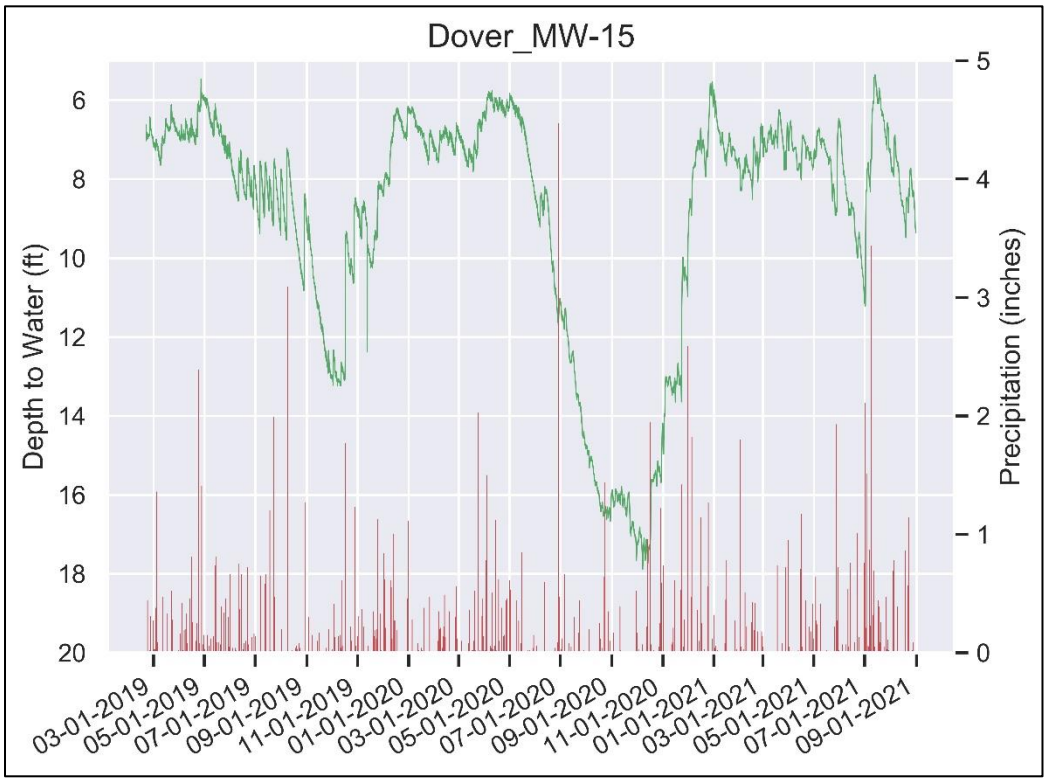


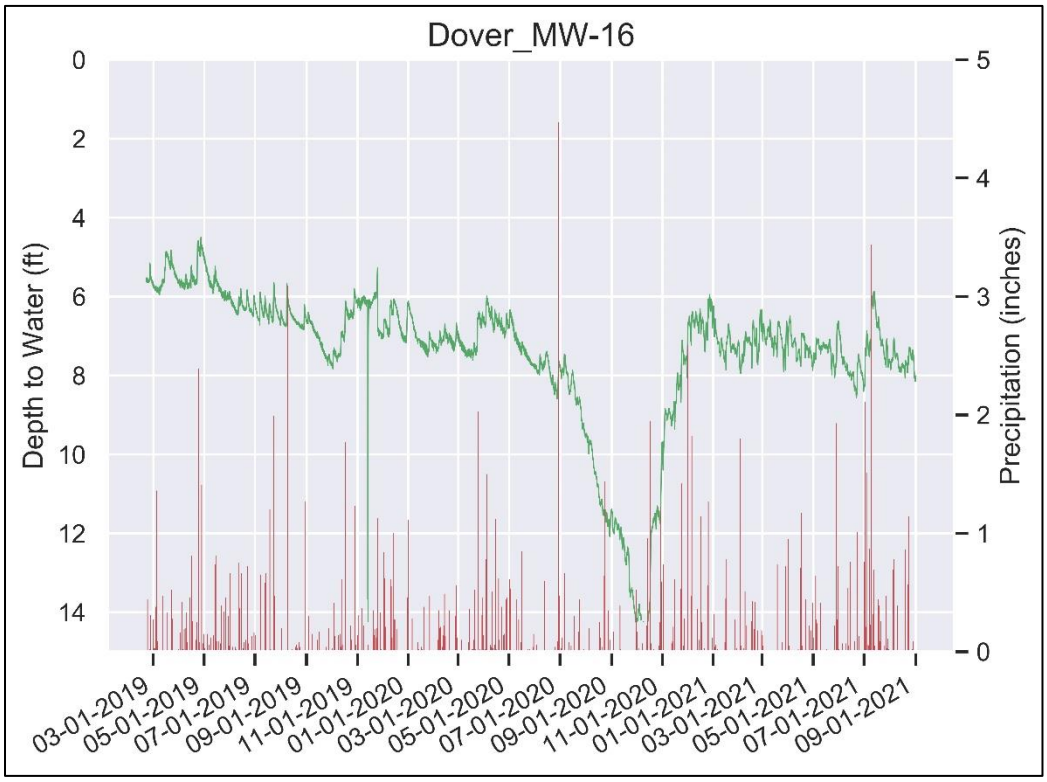


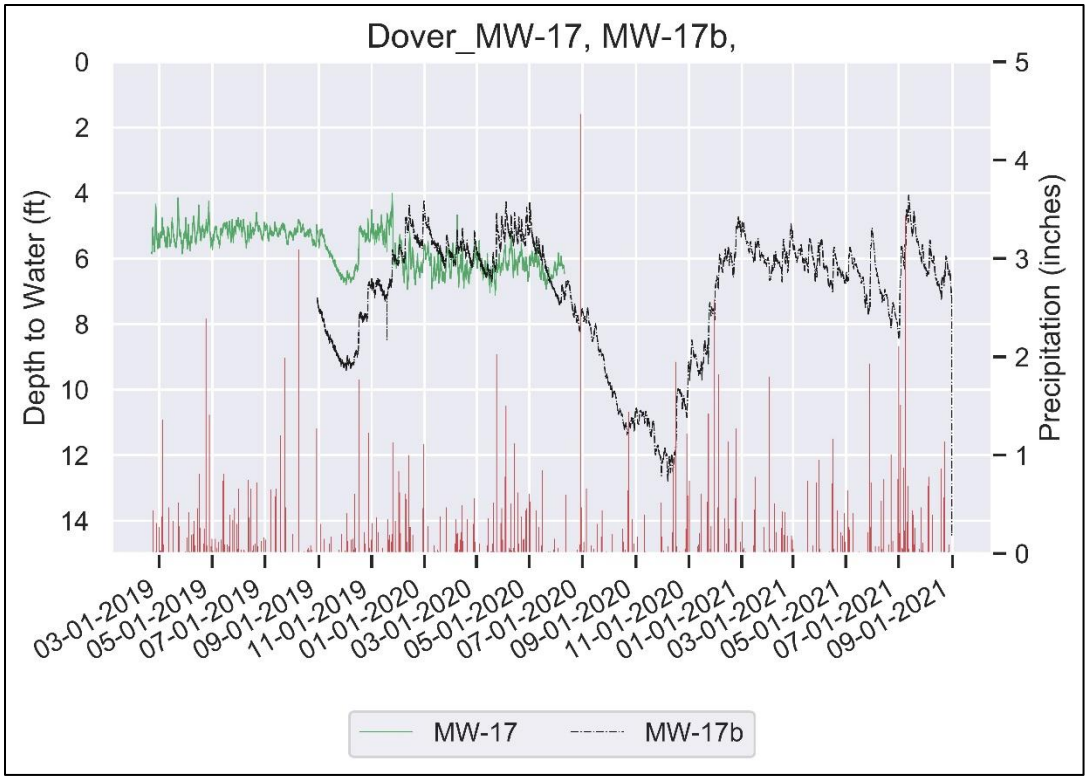




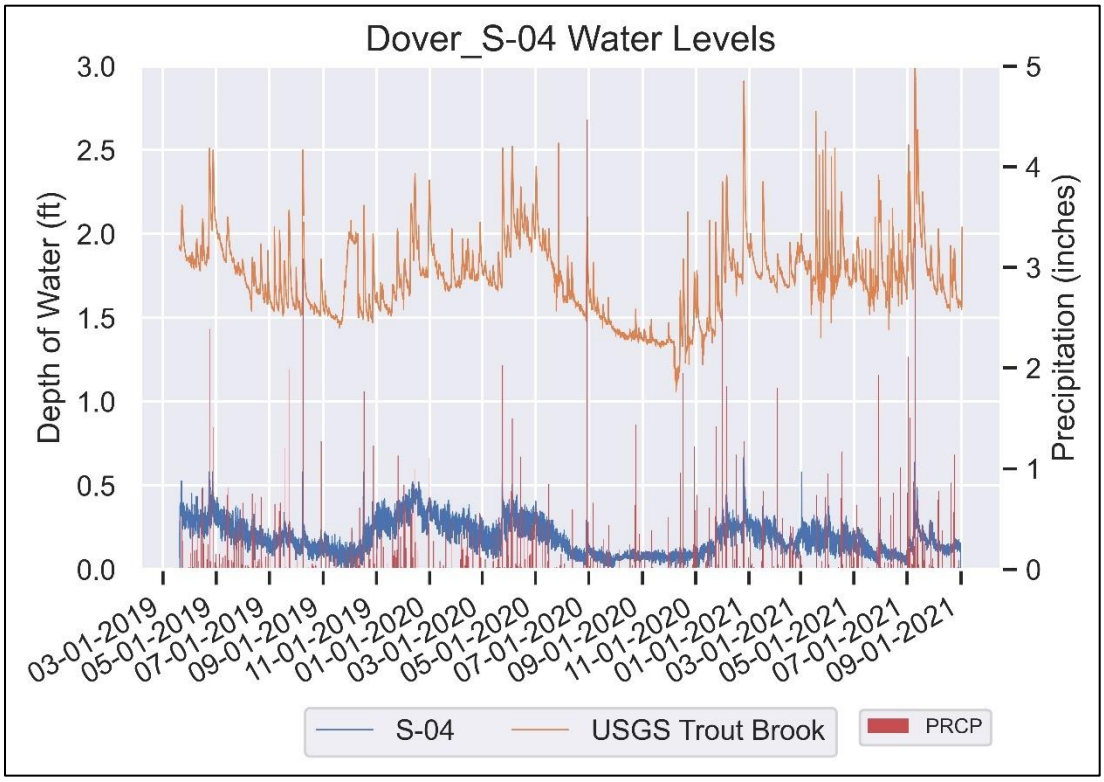


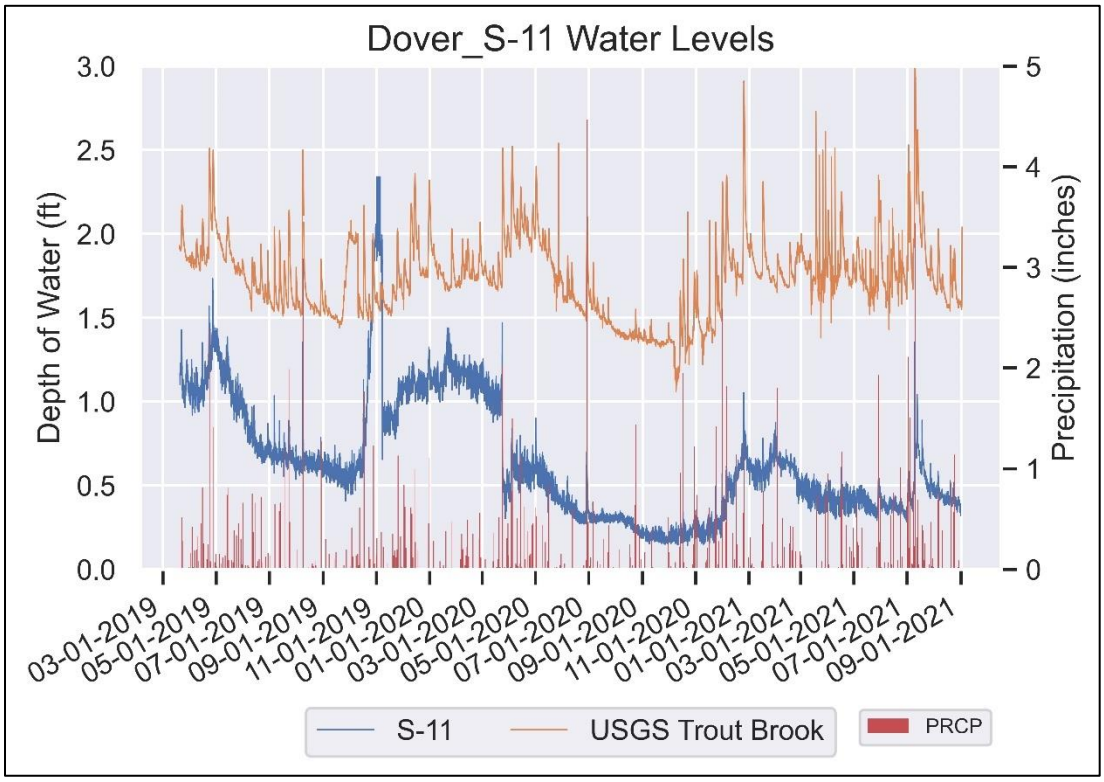


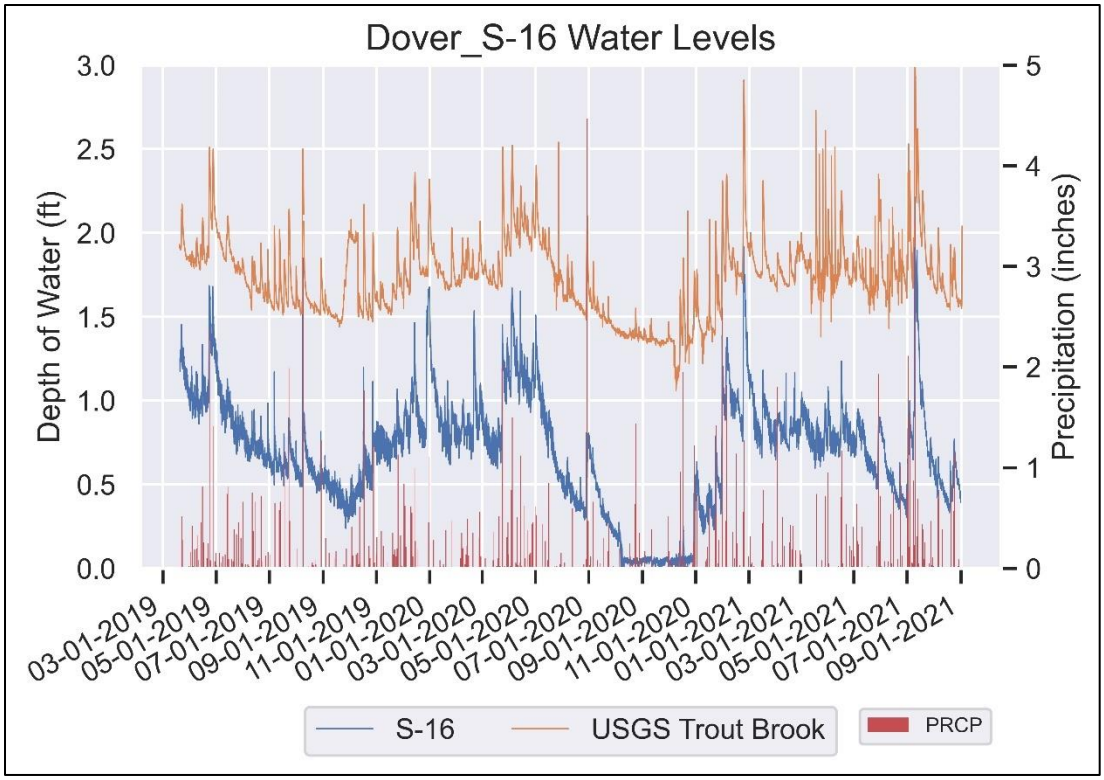


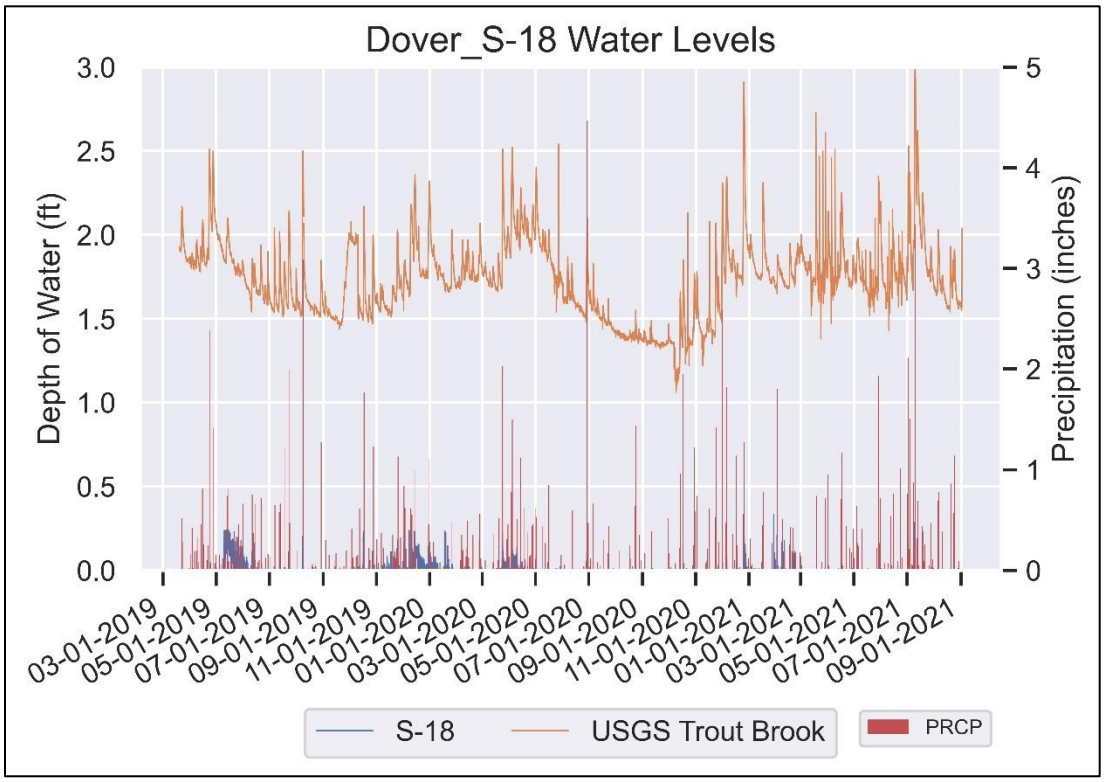


APPENDIX B – STREAM GAUGE GRAPHS









APPENDIX C – LABORAOTRY ANALTICAL REPORTS

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A Pace Analytical® Laboratory

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 8, 2021

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 20221968.019A
Laboratory Work Order Number: 21I0085

Enclosed are results of analyses for samples received by the laboratory on September 1, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 9/8/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20221968.019A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21I0085

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-9	21I0085-01	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-23 4500 H B	
MW-7B	21I0085-02	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-23 4500 H B	
MW-4	21I0085-03	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-23 4500 H B	
MW-3	21I0085-04	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-23 4500 H B	
MW-1	21I0085-05	Ground Water		EPA 200.7	
				EPA 300.0	
				EPA 524.2	
				SM21-23 4500 H B	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA 524.2

Qualifications:

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)
B289479-BS1

2-Hexanone (MBK)
B289479-BS1

4-Methyl-2-pentanone (MIBK)
B289479-BS1

Bromoform
B289479-BS1

tert-Butyl Ethyl Ether (TBEE)
B289479-BS1

Tetrahydrofuran
B289479-BS1

SM21-23 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
21I0085-01[MW-9], 21I0085-02[MW-7B], 21I0085-03[MW-4], 21I0085-04[MW-3], 21I0085-05[MW-1]

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-9 | Sampled: 9/1/2021 09:35

Sample ID: 21I0085-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:18	MJH
Sodium	5.2	2.0	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:18	MJH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-9 | Sampled: 9/1/2021 09:35

Sample ID: 21I0085-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	ND	0.10	mg/L	1		EPA 300.0	9/2/21	9/2/21 20:43	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	9/2/21	9/2/21 20:43	IS
pH @19.1°C	4.9		pH Units	1	H-05	SM21-23 4500 H B	9/1/21	9/1/21 22:45	DJM

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-9 | Sampled: 9/1/2021 09:35

Sample ID: 21I0085-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-9 | Sampled: 9/1/2021 09:35

Sample ID: 21I0085-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/2/21	9/2/21 7:55	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	110	80-120		9/2/21	7:55
1,2-Dichlorobenzene-d4	113	80-120		9/2/21	7:55

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-7B | Sampled: 9/1/2021 11:30

Sample ID: 21I0085-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.033	0.010	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:24	MJH
Sodium	69	2.0	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:24	MJH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-7B | Sampled: 9/1/2021 11:30

Sample ID: 21I0085-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	0.50	0.10	mg/L	1		EPA 300.0	9/2/21	9/2/21 21:28	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	9/2/21	9/2/21 21:28	IS
pH @18.9°C	5.1		pH Units	1	H-05	SM21-23 4500 H B	9/1/21	9/1/21 22:45	DJM

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-7B | Sampled: 9/1/2021 11:30

Sample ID: 21I0085-02

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-7B | Sampled: 9/1/2021 11:30

Sample ID: 21I0085-02

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:22	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	109	80-120		9/2/21	8:22
1,2-Dichlorobenzene-d4	115	80-120		9/2/21	8:22

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-4 | Sampled: 9/1/2021 13:00

Sample ID: 21I0085-03

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.21	0.010	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:30	MJH
Sodium	130	2.0	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:30	MJH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-4 | Sampled: 9/1/2021 13:00

Sample ID: 21I0085-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	0.37	0.10	mg/L	1		EPA 300.0	9/2/21	9/2/21 22:12	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	9/2/21	9/2/21 22:12	IS
pH @18.8°C	5.7		pH Units	1	H-05	SM21-23 4500 H B	9/1/21	9/1/21 22:45	DJM

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-4 | Sampled: 9/1/2021 13:00

Sample ID: 21I0085-03

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-4 | Sampled: 9/1/2021 13:00

Sample ID: 21I0085-03

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/2/21	9/2/21 8:50	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	111	80-120		9/2/21	8:50
1,2-Dichlorobenzene-d4	118	80-120		9/2/21	8:50

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-3 | Sampled: 9/1/2021 14:05

Sample ID: 21I0085-04

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	ND	0.010	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:35	MJH
Sodium	27	2.0	mg/L	1		EPA 200.7	9/3/21	9/5/21 0:35	MJH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-3 | Sampled: 9/1/2021 14:05

Sample ID: 21I0085-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	1.2	0.10	mg/L	1		EPA 300.0	9/2/21	9/2/21 22:57	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	9/2/21	9/2/21 22:57	IS
pH @18.1°C	5.8		pH Units	1	H-05	SM21-23 4500 H B	9/1/21	9/1/21 22:45	DJM

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-3 | Sampled: 9/1/2021 14:05

Sample ID: 21I0085-04

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-3 | Sampled: 9/1/2021 14:05

Sample ID: 21I0085-04

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:17	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	109	80-120		9/2/21	9:17
1,2-Dichlorobenzene-d4	116	80-120		9/2/21	9:17

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-1 | Sampled: 9/1/2021 15:45

Sample ID: 21I0085-05

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.12	0.010	mg/L	1		EPA 200.7	9/3/21	9/4/21 23:33	MJH
Sodium	100	2.0	mg/L	1		EPA 200.7	9/3/21	9/4/21 23:33	MJH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-1 | Sampled: 9/1/2021 15:45

Sample ID: 21I0085-05

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	3.0	0.10	mg/L	1		EPA 300.0	9/3/21	9/3/21 0:26	IS
Nitrite as N	ND	0.100	mg/L	1		EPA 300.0	9/3/21	9/3/21 0:26	IS
pH @18.7°C	5.3		pH Units	1	H-05	SM21-23 4500 H B	9/1/21	9/1/21 22:45	DJM

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-1 | Sampled: 9/1/2021 15:45

Sample ID: 21I0085-05

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0085

Date Received: 9/1/2021

Field Sample #: MW-1 | Sampled: 9/1/2021 15:45

Sample ID: 21I0085-05

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/2/21	9/2/21 9:44	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	110	80-120		9/2/21	9:44
1,2-Dichlorobenzene-d4	115	80-120		9/2/21	9:44

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Sample Extraction Data

Prep Method: EPA 200.7 **Analytical Method: EPA 200.7**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0085-01 [MW-9]	B289587	50.0	50.0	09/03/21
21I0085-02 [MW-7B]	B289587	50.0	50.0	09/03/21
21I0085-03 [MW-4]	B289587	50.0	50.0	09/03/21
21I0085-04 [MW-3]	B289587	50.0	50.0	09/03/21
21I0085-05 [MW-1]	B289587	50.0	50.0	09/03/21

Prep Method: EPA 300.0 **Analytical Method: EPA 300.0**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0085-01 [MW-9]	B289473	10.0	10.0	09/02/21
21I0085-02 [MW-7B]	B289473	10.0	10.0	09/02/21
21I0085-03 [MW-4]	B289473	10.0	10.0	09/02/21
21I0085-04 [MW-3]	B289473	10.0	10.0	09/02/21
21I0085-05 [MW-1]	B289473	10.0	10.0	09/03/21

Prep Method: EPA 524.2 **Analytical Method: EPA 524.2**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0085-01 [MW-9]	B289479	5	5.00	09/02/21
21I0085-02 [MW-7B]	B289479	5	5.00	09/02/21
21I0085-03 [MW-4]	B289479	5	5.00	09/02/21
21I0085-04 [MW-3]	B289479	5	5.00	09/02/21
21I0085-05 [MW-1]	B289479	5	5.00	09/02/21

SM21-23 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
21I0085-01 [MW-9]	B289469	50.0	09/01/21
21I0085-02 [MW-7B]	B289469	50.0	09/01/21
21I0085-03 [MW-4]	B289469	50.0	09/01/21
21I0085-04 [MW-3]	B289469	50.0	09/01/21
21I0085-05 [MW-1]	B289469	50.0	09/01/21

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289587 - EPA 200.7										
Blank (B289587-BLK1)				Prepared: 09/03/21 Analyzed: 09/04/21						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B289587-BS1)				Prepared: 09/03/21 Analyzed: 09/04/21						
Manganese	0.506	0.010	mg/L	0.500		101	85-115			
Sodium	4.19	2.0	mg/L	4.00		105	85-115			
LCS Dup (B289587-BSD1)				Prepared: 09/03/21 Analyzed: 09/04/21						
Manganese	0.505	0.010	mg/L	0.500		101	85-115	0.287	20	
Sodium	4.15	2.0	mg/L	4.00		104	85-115	0.983	20	
Duplicate (B289587-DUP1)	**Source: 21I0085-05**			Prepared: 09/03/21 Analyzed: 09/04/21						
Manganese	0.119	0.010	mg/L		0.118			0.210	20	
Sodium	105	2.0	mg/L		104			0.729	20	
Matrix Spike (B289587-MS1)	**Source: 21I0085-05**			Prepared: 09/03/21 Analyzed: 09/04/21						
Manganese	0.608	0.010	mg/L	0.500	0.118	97.9	70-130			
Sodium	108	2.0	mg/L	4.00	104	86.9	70-130			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289469 - SM21-23 4500 H B										
LCS (B289469-BS1)				Prepared & Analyzed: 09/01/21						
pH	5.96		pH Units	6.00		99.3	90-110			
Batch B289473 - EPA 300.0										
Blank (B289473-BLK1)				Prepared & Analyzed: 09/02/21						
Nitrate as N	ND	0.10	mg/L							
Nitrite as N	ND	0.100	mg/L							
LCS (B289473-BS1)				Prepared & Analyzed: 09/02/21						
Nitrate as N	0.93	0.10	mg/L	1.00		93.0	90-110			
Nitrite as N	0.968	0.100	mg/L	1.00		96.8	90-110			
LCS Dup (B289473-BSD1)				Prepared & Analyzed: 09/02/21						
Nitrate as N	0.93	0.10	mg/L	1.00		92.7	90-110	0.312	20	
Nitrite as N	0.967	0.100	mg/L	1.00		96.7	90-110	0.145	20	

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289479 - EPA 524.2										
Blank (B289479-BLK1)				Prepared & Analyzed: 09/01/21						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	0.50	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	0.50	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B289479 - EPA 524.2											
Blank (B289479-BLK1)				Prepared & Analyzed: 09/01/21							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*27.2*		µg/L	25.0		109		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*28.3*		µg/L	25.0		113		80-120			
LCS (B289479-BS1)				Prepared & Analyzed: 09/01/21							
Acetone	120	10	µg/L	100		118		70-130			
tert-Amyl Methyl Ether (TAME)	12	0.50	µg/L	10.0		124		70-130			
Benzene	11	0.50	µg/L	10.0		114		70-130			
Bromobenzene	11	0.50	µg/L	10.0		112		70-130			
Bromochloromethane	12	0.50	µg/L	10.0		115		70-130			
Bromodichloromethane	11	0.50	µg/L	10.0		114		70-130			
Bromoform	13	0.50	µg/L	10.0		**131**	*	70-130			L-01
Bromomethane	12	0.50	µg/L	10.0		119		70-130			
2-Butanone (MEK)	130	5.0	µg/L	100		**134**	*	70-130			L-01
tert-Butyl Alcohol (TBA)	110	5.0	µg/L	100		113		70-130			
n-Butylbenzene	9.8	0.50	µg/L	10.0		97.8		70-130			
sec-Butylbenzene	10	0.50	µg/L	10.0		102		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		105		70-130			
tert-Butyl Ethyl Ether (TBEE)	15	0.50	µg/L	10.0		**146**	*	70-130			L-01
Carbon Disulfide	110	5.0	µg/L	100		109		70-130			
Carbon Tetrachloride	11	0.50	µg/L	10.0		114		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		110		70-130			
Chloroethane	12	0.50	µg/L	10.0		116		70-130			
Chloroform	11	0.50	µg/L	10.0		112		70-130			
Chloromethane	9.6	0.50	µg/L	10.0		96.0		70-130			
2-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
4-Chlorotoluene	11	0.50	µg/L	10.0		105		70-130			
Dibromochloromethane	12	0.50	µg/L	10.0		119		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	13	2.0	µg/L	10.0		125		70-130			
1,2-Dibromoethane (EDB)	12	0.50	µg/L	10.0		123		70-130			
Dibromomethane	12	0.50	µg/L	10.0		117		70-130			
1,2-Dichlorobenzene	11	0.50	µg/L	10.0		110		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B289479 - EPA 524.2											
LCS (B289479-BS1)				Prepared & Analyzed: 09/01/21							
1,3-Dichlorobenzene	11	0.50	µg/L	10.0		110		70-130			
1,4-Dichlorobenzene	11	0.50	µg/L	10.0		111		70-130			
Dichlorodifluoromethane (Freon 12)	10	0.50	µg/L	10.0		104		70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		112		70-130			
1,2-Dichloroethane	11	0.50	µg/L	10.0		114		70-130			
1,1-Dichloroethylene	11	0.50	µg/L	10.0		109		70-130			
cis-1,2-Dichloroethylene	11	0.50	µg/L	10.0		115		70-130			
trans-1,2-Dichloroethylene	11	0.50	µg/L	10.0		114		70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113		70-130			
1,3-Dichloropropane	12	0.50	µg/L	10.0		118		70-130			
2,2-Dichloropropane	10	0.50	µg/L	10.0		104		70-130			
1,1-Dichloropropene	11	0.50	µg/L	10.0		111		70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		113		70-130			
trans-1,3-Dichloropropene	12	0.50	µg/L	10.0		122		70-130			
Diethyl Ether	12	0.50	µg/L	10.0		117		70-130			
Diisopropyl Ether (DIPE)	11	0.50	µg/L	10.0		113		70-130			
Ethylbenzene	11	0.50	µg/L	10.0		113		70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		102		70-130			
2-Hexanone (MBK)	140	5.0	µg/L	100		**136**	*	70-130			L-01
Isopropylbenzene (Cumene)	11	0.50	µg/L	10.0		105		70-130			
p-Isopropyltoluene (p-Cymene)	10	0.50	µg/L	10.0		104		70-130			
Methyl tert-Butyl Ether (MTBE)	13	0.50	µg/L	10.0		129		70-130			
Methylene Chloride	10	0.50	µg/L	10.0		103		70-130			
4-Methyl-2-pentanone (MIBK)	130	5.0	µg/L	100		**133**	*	70-130			L-01
Naphthalene	9.9	1.0	µg/L	10.0		98.8		70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		104		70-130			
Styrene	11	0.50	µg/L	10.0		112		70-130			
1,1,1,2-Tetrachloroethane	12	0.50	µg/L	10.0		118		70-130			
1,1,2,2-Tetrachloroethane	12	0.50	µg/L	10.0		123		70-130			
Tetrachloroethylene	11	0.50	µg/L	10.0		110		70-130			
Tetrahydrofuran	14	2.0	µg/L	10.0		**137**	*	70-130			L-01
Toluene	11	0.50	µg/L	10.0		113		70-130			
1,2,3-Trichlorobenzene	10	0.50	µg/L	10.0		100		70-130			
1,2,4-Trichlorobenzene	10	0.50	µg/L	10.0		101		70-130			
1,1,1-Trichloroethane	11	0.50	µg/L	10.0		110		70-130			
1,1,2-Trichloroethane	12	0.50	µg/L	10.0		119		70-130			
Trichloroethylene	11	0.50	µg/L	10.0		110		70-130			
Trichlorofluoromethane (Freon 11)	12	0.50	µg/L	10.0		115		70-130			
1,2,3-Trichloropropane	12	0.50	µg/L	10.0		123		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11	0.50	µg/L	10.0		110		70-130			
1,2,4-Trimethylbenzene	11	0.50	µg/L	10.0		110		70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105		70-130			
Vinyl Chloride	7.8	0.50	µg/L	10.0		77.9		70-130			
m&p-Xylene	22	1.0	µg/L	20.0		112		70-130			
o-Xylene	11	0.50	µg/L	10.0		114		70-130			
Surrogate: 4-Bromofluorobenzene	*27.5*		µg/L	25.0		110		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*28.2*		µg/L	25.0		113		80-120			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 300.0 in Water	
Nitrate as N	NC,NY,MA,VA,ME,NH,CT,RI
Nitrite as N	NY,NC,NH,VA,ME,CT,RI
EPA 524.2 in Water	
Acetone	NY,CT,RI
Benzene	NY,CT,RI
Chlorobenzene	NY,CT,RI
Chloroform	NY,CT,RI
1,2-Dichlorobenzene	NY,CT,RI
1,2-Dichloroethane	NY,CT,RI
Methylene Chloride	NY,CT,RI
4-Methyl-2-pentanone (MIBK)	NY,CT,RI
Tetrahydrofuran	NY,CT,RI
Toluene	NY,CT,RI
SM21-23 4500 H B in Water	
pH	CT,MA,RI

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

21I0085

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Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

Doc # 381 Rev 4_01/08/2020

Company Name:	Kleinfelder
Address:	550 West C Street San Diego CA
Phone:	614-831-4600
Project Name:	Dover MA Hydrology Study
Project Location:	Dover MA
Project Number:	20221468.001A
Project Manager:	Kirsten Ryan
Con-Test Quote Name/Number:	2108545
Invoice Recipient:	
Sampled By:	Patrick Monahan

Requested Turnaround Time
7-Day ☐ 10-Day ☒
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☐ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: abbrshop@kleinfelder.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
⊘ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED: PH; VOC's via 524.2; Mangnes, iron and sodium; Nitrate/Nitrite

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1] Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PH	VOC's via 524.2	Mangnes, iron and sodium	Nitrate/Nitrite
1	MW-9	9/1/21	0935	Grab	GW		3		4			X	X	X	X
2	MW-7B	↓	1130	↓	GW		3		4			X	X	X	X
3	MW-4	↓	1300	↓	GW		3		4			X	X	X	X
4	MW-3	↓	1405	↓	GW		3		4			X	X	X	X
5	MW-1	↓	1545	↓	GW		3		4			X	X	X	X

[2] Preservation Code

Total Number Of:
VIALS____
GLASS____
PLASTIC____
BACTERIA____
ENCORE____

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Contest is not responsible for missing samples from prepacked coolers

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished/Received	Date/Time
Relinquished by: (signature) [signature]	Date/Time: 9/1/21 1050
Received by: (signature) Jon Gorbes 4:45	Date/Time: 9.1.21
Relinquished by: (signature) Jon Gorbes 8:45	Date/Time: 9.1.21
Received by: (signature) [signature] 5.1	Date/Time: 9/1/21 2045
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:
Per client state form not needed, total metals need, analyze to DW standards 9/2/21 KF

Detection Limit Requirements
(MA)
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☒ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

Comments:
MA DEP drinking water standards

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Kleinfelder

Received By ZL Date 9/1/21 Time 2045

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 5.1
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? n/a Were Samples Tampered with? n/a
Was COC Relinquished ? T Does Chain Agree With Samples? T
Are there broken/leaking/loose caps on any samples? F
Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T
Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? T Who was notified? David
Is there enough Volume? T
Is there Headspace where applicable? F MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? F On COC? F
Do all samples have the proper pH? Acid T Base n/a

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	15	500 mL Amb.		500 mL Plastic	5	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	15	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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September 10, 2021

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 20221968.091A
Laboratory Work Order Number: 21H1648

Enclosed are results of analyses for samples received by the laboratory on August 31, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 9/10/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20221968.091A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21H1648

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-17b	21H1648-01	Ground Water		EPA 200.7	
				EPA 524.2	
				NECi N07-0003	
				SM21-23 4500 H B	
MW-15	21H1648-02	Ground Water		EPA 200.7	
				EPA 524.2	
				NECi N07-0003	
				SM21-23 4500 H B	
MW-13	21H1648-03	Ground Water		EPA 200.7	
				EPA 524.2	
				NECi N07-0003	
				SM21-23 4500 H B	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA 524.2

Qualifications:

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

2-Butanone (MEK)
B289438-BS1

2-Hexanone (MBK)
B289438-BS1

4-Methyl-2-pentanone (MIBK)
B289438-BS1

Bromoform
B289438-BS1

tert-Butyl Ethyl Ether (TBEE)
B289438-BS1

Tetrahydrofuran
B289438-BS1

NECi N07-0003

Qualifications:

MS-07

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Nitrite as N
21H1648-03[MW-13], B289396-MS2

Z-01

NECI test had a calibration point outside acceptable back calculated recoveries. reanalysis yielded similar nonconformances.

Analyte & Samples(s) Qualified:

Nitrate as N
21H1648-01[MW-17b], 21H1648-02[MW-15], 21H1648-03[MW-13]

SM21-23 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
21H1648-01[MW-17b], 21H1648-02[MW-15], 21H1648-03[MW-13]

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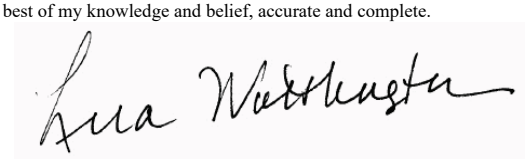
The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-17b | Sampled: 8/31/2021 12:40

Sample ID: 21H1648-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.093	0.010	mg/L	1		EPA 200.7	9/8/21	9/9/21 13:16	MJH
Sodium	49	2.0	mg/L	1		EPA 200.7	9/8/21	9/9/21 13:16	MJH

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-17b | Sampled: 8/31/2021 12:40

Sample ID: 21H1648-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	3.3	0.050	mg/L	1	Z-01	NECi N07-0003	9/1/21	9/1/21 12:37	IS
Nitrite as N	ND	0.0500	mg/L	1		NECi N07-0003	9/1/21	9/1/21 10:52	IS
pH @17.4°C	6.4		pH Units	1	H-05	SM21-23 4500 H B	8/31/21	8/31/21 20:00	CB2

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-17b | Sampled: 8/31/2021 12:40

Sample ID: 21H1648-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-17b | Sampled: 8/31/2021 12:40

Sample ID: 21H1648-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:27	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	108	80-120		9/2/21	4:27
1,2-Dichlorobenzene-d4	115	80-120		9/2/21	4:27

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-15 | Sampled: 8/31/2021 14:30

Sample ID: 21H1648-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.21	0.010	mg/L	1		EPA 200.7	9/8/21	9/9/21 13:38	QNW
Sodium	290	2.0	mg/L	1		EPA 200.7	9/8/21	9/9/21 13:38	QNW

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-15 | Sampled: 8/31/2021 14:30

Sample ID: 21H1648-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	2.5	0.050	mg/L	1	Z-01	NECi N07-0003	9/1/21	9/1/21 12:38	IS
Nitrite as N	ND	0.0500	mg/L	1		NECi N07-0003	9/1/21	9/1/21 10:53	IS
pH @17.1°C	5.4		pH Units	1	H-05	SM21-23 4500 H B	8/31/21	8/31/21 20:00	CB2

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-15 | Sampled: 8/31/2021 14:30

Sample ID: 21H1648-02

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-15 | Sampled: 8/31/2021 14:30

Sample ID: 21H1648-02

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/1/21	9/2/21 4:55	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	109	80-120		9/2/21	4:55
1,2-Dichlorobenzene-d4	114	80-120		9/2/21	4:55

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA
Sample Description:
Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-13
Sampled: 8/31/2021 16:10

Sample ID: 21H1648-03

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Manganese	0.12	0.010	mg/L	1		EPA 200.7	9/8/21	9/9/21 13:43	QNW
Sodium	52	2.0	mg/L	1		EPA 200.7	9/8/21	9/9/21 13:43	QNW

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-13 | Sampled: 8/31/2021 16:10

Sample ID: 21H1648-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Nitrate as N	4.3	0.050	mg/L	1	Z-01	NECi N07-0003	9/1/21	9/1/21 12:40	IS
Nitrite as N	ND	0.0500	mg/L	1	MS-07	NECi N07-0003	9/1/21	9/1/21 10:55	IS
pH @17.1°C	6.2		pH Units	1	H-05	SM21-23 4500 H B	8/31/21	8/31/21 20:00	CB2

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-13 | Sampled: 8/31/2021 16:10

Sample ID: 21H1648-03

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	10	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Benzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Bromobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Bromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Bromodichloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Bromoform	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Bromomethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
2-Butanone (MEK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
n-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
sec-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
tert-Butylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Carbon Disulfide	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Carbon Tetrachloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Chlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Chloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Chloroform	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Chloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
2-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
4-Chlorotoluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Dibromochloromethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2-Dibromoethane (EDB)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Dibromomethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,3-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,4-Dichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2-Dichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
cis-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
trans-1,2-Dichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,3-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
2,2-Dichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
cis-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
trans-1,3-Dichloropropene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,3-Dichloropropene (total)	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Diethyl Ether	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Diisopropyl Ether (DIPE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH

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Project Location: Dover, MA | Sample Description: | Work Order: 21H1648

Date Received: 8/31/2021

Field Sample #: MW-13 | Sampled: 8/31/2021 16:10

Sample ID: 21H1648-03

Sample Matrix: Ground Water

Drinking Water Organics EPA 500 Series Methods

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Hexachlorobutadiene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
2-Hexanone (MBK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Isopropylbenzene (Cumene)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Methylene Chloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Naphthalene	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
n-Propylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Styrene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Tetrachloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Tetrahydrofuran	ND	2.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Toluene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2,3-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2,4-Trichlorobenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1,1-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1,2-Trichloroethane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Trichloroethylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2,3-Trichloropropane	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,2,4-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
1,3,5-Trimethylbenzene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Vinyl Chloride	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
m&p-Xylene	ND	1.0	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
o-Xylene	ND	0.50	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH
Xylenes (total)	ND	1.5	µg/L	1		EPA 524.2	9/1/21	9/2/21 5:22	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
4-Bromofluorobenzene	109	80-120		9/2/21	5:22
1,2-Dichlorobenzene-d4	116	80-120		9/2/21	5:22

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Sample Extraction Data

Prep Method: EPA 200.7 **Analytical Method: EPA 200.7**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21H1648-01 [MW-17b]	B289847	50.0	50.0	09/08/21
21H1648-02 [MW-15]	B289847	50.0	50.0	09/08/21
21H1648-03 [MW-13]	B289847	50.0	50.0	09/08/21

Prep Method: EPA 524.2 **Analytical Method: EPA 524.2**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21H1648-01 [MW-17b]	B289438	5	5.00	09/01/21
21H1648-02 [MW-15]	B289438	5	5.00	09/01/21
21H1648-03 [MW-13]	B289438	5	5.00	09/01/21

NECi N07-0003

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21H1648-01 [MW-17b]	B289394	10.0	10.0	09/01/21
21H1648-02 [MW-15]	B289394	10.0	10.0	09/01/21
21H1648-03 [MW-13]	B289394	10.0	10.0	09/01/21

NECi N07-0003

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21H1648-01 [MW-17b]	B289396	10.0	10.0	09/01/21
21H1648-02 [MW-15]	B289396	10.0	10.0	09/01/21
21H1648-03 [MW-13]	B289396	10.0	10.0	09/01/21

SM21-23 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
21H1648-01 [MW-17b]	B289380	50.0	08/31/21
21H1648-02 [MW-15]	B289380	50.0	08/31/21
21H1648-03 [MW-13]	B289380	50.0	08/31/21

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289847 - EPA 200.7										
Blank (B289847-BLK1)				Prepared: 09/08/21 Analyzed: 09/09/21						
Manganese	ND	0.010	mg/L							
Sodium	ND	2.0	mg/L							
LCS (B289847-BS1)				Prepared: 09/08/21 Analyzed: 09/09/21						
Manganese	0.510	0.010	mg/L	0.500		102	85-115			
Sodium	3.98	2.0	mg/L	4.00		99.5	85-115			
LCS Dup (B289847-BSD1)				Prepared: 09/08/21 Analyzed: 09/09/21						
Manganese	0.504	0.010	mg/L	0.500		101	85-115	1.04	20	
Sodium	3.93	2.0	mg/L	4.00		98.3	85-115	1.27	20	
Duplicate (B289847-DUP1)	**Source: 21H1648-01**			Prepared: 09/08/21 Analyzed: 09/09/21						
Manganese	0.0903	0.010	mg/L		0.0927			2.57	20	
Sodium	48.7	2.0	mg/L		48.8			0.236	20	
Matrix Spike (B289847-MS1)	**Source: 21H1648-01**			Prepared: 09/08/21 Analyzed: 09/09/21						
Manganese	0.586	0.010	mg/L	0.500	0.0927	98.6	70-130			
Sodium	51.9	2.0	mg/L	4.00	48.8	77.1	70-130			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289380 - SM21-23 4500 H B										
LCS (B289380-BS1)				Prepared & Analyzed: 08/31/21						
pH	5.98		pH Units	6.00		99.7	90-110			
Batch B289394 - NECi N07-0003										
Blank (B289394-BLK1)				Prepared & Analyzed: 09/01/21						
Nitrate as N	ND	0.050	mg/L							
LCS (B289394-BS1)				Prepared & Analyzed: 09/01/21						
Nitrate as N	2.6	0.050	mg/L	2.50		105	90-110			
LCS Dup (B289394-BSD1)				Prepared & Analyzed: 09/01/21						
Nitrate as N	2.5	0.050	mg/L	2.50		101	90-110	4.43	20	
Duplicate (B289394-DUP2)	**Source: 21H1648-03**			Prepared & Analyzed: 09/01/21						
Nitrate as N	4.3	0.050	mg/L		4.3			0.601	20	
Matrix Spike (B289394-MS2)	**Source: 21H1648-03**			Prepared & Analyzed: 09/01/21						
Nitrate as N	16	0.25	mg/L	12.5	4.3	96.8	90-110			
Batch B289396 - NECi N07-0003										
Blank (B289396-BLK1)				Prepared & Analyzed: 09/01/21						
Nitrite as N	ND	0.0500	mg/L							
LCS (B289396-BS1)				Prepared & Analyzed: 09/01/21						
Nitrite as N	0.260	0.0500	mg/L	0.250		104	90-110			
LCS Dup (B289396-BSD1)				Prepared & Analyzed: 09/01/21						
Nitrite as N	0.266	0.0500	mg/L	0.250		106	90-110	2.28	20	
Duplicate (B289396-DUP2)	**Source: 21H1648-03**			Prepared & Analyzed: 09/01/21						
Nitrite as N	ND	0.0500	mg/L		ND			NC	20	
Matrix Spike (B289396-MS2)	**Source: 21H1648-03**			Prepared & Analyzed: 09/01/21						
Nitrite as N	ND	0.250	mg/L	0.250	ND	*	90-110			MS-07

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289438 - EPA 524.2										
Blank (B289438-BLK1)				Prepared & Analyzed: 09/01/21						
Acetone	ND	10	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	0.50	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
tert-Butyl Ethyl Ether (TBEE)	ND	0.50	µg/L							
Carbon Disulfide	ND	5.0	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	0.50	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
Dibromochloromethane	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	2.0	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
Dibromomethane	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diethyl Ether	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Hexachlorobutadiene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	0.50	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	1.0	µg/L							

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B289438 - EPA 524.2											
Blank (B289438-BLK1)				Prepared & Analyzed: 09/01/21							
n-Propylbenzene	ND	0.50	µg/L								
Styrene	ND	0.50	µg/L								
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L								
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L								
Tetrachloroethylene	ND	0.50	µg/L								
Tetrahydrofuran	ND	2.0	µg/L								
Toluene	ND	0.50	µg/L								
1,2,3-Trichlorobenzene	ND	0.50	µg/L								
1,2,4-Trichlorobenzene	ND	0.50	µg/L								
1,1,1-Trichloroethane	ND	0.50	µg/L								
1,1,2-Trichloroethane	ND	0.50	µg/L								
Trichloroethylene	ND	0.50	µg/L								
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L								
1,2,3-Trichloropropane	ND	0.50	µg/L								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.50	µg/L								
1,2,4-Trimethylbenzene	ND	0.50	µg/L								
1,3,5-Trimethylbenzene	ND	0.50	µg/L								
Vinyl Chloride	ND	0.50	µg/L								
m&p-Xylene	ND	1.0	µg/L								
o-Xylene	ND	0.50	µg/L								
Xylenes (total)	ND	1.5	µg/L								
Surrogate: 4-Bromofluorobenzene	*27.2*		µg/L	25.0		109		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*28.3*		µg/L	25.0		113		80-120			
LCS (B289438-BS1)				Prepared & Analyzed: 09/01/21							
Acetone	120	10	µg/L	100		118		70-130			
tert-Amyl Methyl Ether (TAME)	12	0.50	µg/L	10.0		124		70-130			
Benzene	11	0.50	µg/L	10.0		114		70-130			
Bromobenzene	11	0.50	µg/L	10.0		112		70-130			
Bromochloromethane	12	0.50	µg/L	10.0		115		70-130			
Bromodichloromethane	11	0.50	µg/L	10.0		114		70-130			
Bromoform	13	0.50	µg/L	10.0		**131**	*	70-130			L-01
Bromomethane	12	0.50	µg/L	10.0		119		70-130			
2-Butanone (MEK)	130	5.0	µg/L	100		**134**	*	70-130			L-01
tert-Butyl Alcohol (TBA)	110	5.0	µg/L	100		113		70-130			
n-Butylbenzene	9.8	0.50	µg/L	10.0		97.8		70-130			
sec-Butylbenzene	10	0.50	µg/L	10.0		102		70-130			
tert-Butylbenzene	10	0.50	µg/L	10.0		105		70-130			
tert-Butyl Ethyl Ether (TBEE)	15	0.50	µg/L	10.0		**146**	*	70-130			L-01
Carbon Disulfide	110	5.0	µg/L	100		109		70-130			
Carbon Tetrachloride	11	0.50	µg/L	10.0		114		70-130			
Chlorobenzene	11	0.50	µg/L	10.0		110		70-130			
Chloroethane	12	0.50	µg/L	10.0		116		70-130			
Chloroform	11	0.50	µg/L	10.0		112		70-130			
Chloromethane	9.6	0.50	µg/L	10.0		96.0		70-130			
2-Chlorotoluene	10	0.50	µg/L	10.0		100		70-130			
4-Chlorotoluene	11	0.50	µg/L	10.0		105		70-130			
Dibromochloromethane	12	0.50	µg/L	10.0		119		70-130			
1,2-Dibromo-3-chloropropane (DBCP)	13	2.0	µg/L	10.0		125		70-130			
1,2-Dibromoethane (EDB)	12	0.50	µg/L	10.0		123		70-130			
Dibromomethane	12	0.50	µg/L	10.0		117		70-130			
1,2-Dichlorobenzene	11	0.50	µg/L	10.0		110		70-130			

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QUALITY CONTROL

Drinking Water Organics EPA 500 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B289438 - EPA 524.2											
LCS (B289438-BS1)				Prepared & Analyzed: 09/01/21							
1,3-Dichlorobenzene	11	0.50	µg/L	10.0		110		70-130			
1,4-Dichlorobenzene	11	0.50	µg/L	10.0		111		70-130			
Dichlorodifluoromethane (Freon 12)	10	0.50	µg/L	10.0		104		70-130			
1,1-Dichloroethane	11	0.50	µg/L	10.0		112		70-130			
1,2-Dichloroethane	11	0.50	µg/L	10.0		114		70-130			
1,1-Dichloroethylene	11	0.50	µg/L	10.0		109		70-130			
cis-1,2-Dichloroethylene	11	0.50	µg/L	10.0		115		70-130			
trans-1,2-Dichloroethylene	11	0.50	µg/L	10.0		114		70-130			
1,2-Dichloropropane	11	0.50	µg/L	10.0		113		70-130			
1,3-Dichloropropane	12	0.50	µg/L	10.0		118		70-130			
2,2-Dichloropropane	10	0.50	µg/L	10.0		104		70-130			
1,1-Dichloropropene	11	0.50	µg/L	10.0		111		70-130			
cis-1,3-Dichloropropene	11	0.50	µg/L	10.0		113		70-130			
trans-1,3-Dichloropropene	12	0.50	µg/L	10.0		122		70-130			
Diethyl Ether	12	0.50	µg/L	10.0		117		70-130			
Diisopropyl Ether (DIPE)	11	0.50	µg/L	10.0		113		70-130			
Ethylbenzene	11	0.50	µg/L	10.0		113		70-130			
Hexachlorobutadiene	10	0.50	µg/L	10.0		102		70-130			
2-Hexanone (MBK)	140	5.0	µg/L	100		**136**	*	70-130			L-01
Isopropylbenzene (Cumene)	11	0.50	µg/L	10.0		105		70-130			
p-Isopropyltoluene (p-Cymene)	10	0.50	µg/L	10.0		104		70-130			
Methyl tert-Butyl Ether (MTBE)	13	0.50	µg/L	10.0		129		70-130			
Methylene Chloride	10	0.50	µg/L	10.0		103		70-130			
4-Methyl-2-pentanone (MIBK)	130	5.0	µg/L	100		**133**	*	70-130			L-01
Naphthalene	9.9	1.0	µg/L	10.0		98.8		70-130			
n-Propylbenzene	10	0.50	µg/L	10.0		104		70-130			
Styrene	11	0.50	µg/L	10.0		112		70-130			
1,1,1,2-Tetrachloroethane	12	0.50	µg/L	10.0		118		70-130			
1,1,2,2-Tetrachloroethane	12	0.50	µg/L	10.0		123		70-130			
Tetrachloroethylene	11	0.50	µg/L	10.0		110		70-130			
Tetrahydrofuran	14	2.0	µg/L	10.0		**137**	*	70-130			L-01
Toluene	11	0.50	µg/L	10.0		113		70-130			
1,2,3-Trichlorobenzene	10	0.50	µg/L	10.0		100		70-130			
1,2,4-Trichlorobenzene	10	0.50	µg/L	10.0		101		70-130			
1,1,1-Trichloroethane	11	0.50	µg/L	10.0		110		70-130			
1,1,2-Trichloroethane	12	0.50	µg/L	10.0		119		70-130			
Trichloroethylene	11	0.50	µg/L	10.0		110		70-130			
Trichlorofluoromethane (Freon 11)	12	0.50	µg/L	10.0		115		70-130			
1,2,3-Trichloropropane	12	0.50	µg/L	10.0		123		70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11	0.50	µg/L	10.0		110		70-130			
1,2,4-Trimethylbenzene	11	0.50	µg/L	10.0		110		70-130			
1,3,5-Trimethylbenzene	11	0.50	µg/L	10.0		105		70-130			
Vinyl Chloride	7.8	0.50	µg/L	10.0		77.9		70-130			
m&p-Xylene	22	1.0	µg/L	20.0		112		70-130			
o-Xylene	11	0.50	µg/L	10.0		114		70-130			
Surrogate: 4-Bromofluorobenzene	*27.5*		µg/L	25.0		110		80-120			
Surrogate: 1,2-Dichlorobenzene-d4	*28.2*		µg/L	25.0		113		80-120			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
Z-01	NECI test had a calibration point outside acceptable back calculated recoveries. reanalysis yielded similar nonconformances.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Manganese	CT,MA,NH,NY,RI,NC,ME,VA
Sodium	CT,MA,NH,NY,RI,NC,ME,VA
EPA 524.2 in Drinking Water	
Benzene	CT,MA,NH,NY,RI,ME,VA,VT-DW
Bromobenzene	CT,MA,NH,NY,RI,VT-DW
Bromochloromethane	CT,MA,NH,NY,RI,VT-DW
Bromodichloromethane	MA,NH,NY,RI,ME,VA,VT-DW
Bromoform	CT,MA,NH,NY,RI,ME,VT-DW
Bromomethane	CT,MA,NH,NY,RI,VT-DW
n-Butylbenzene	CT,MA,NH,NY,RI,VT-DW
sec-Butylbenzene	CT,MA,NH,NY,RI,VT-DW
tert-Butylbenzene	CT,MA,NH,NY,RI,VT-DW
Carbon Tetrachloride	CT,MA,NH,NY,RI,ME,VA,VT-DW
Chlorobenzene	CT,MA,NH,NY,RI,ME,VA,VT-DW
Chloroethane	CT,MA,NH,NY,RI,VT-DW
Chloroform	MA,NH,NY,RI,ME,VA,VT-DW
Chloromethane	CT,MA,NH,NY,RI,VT-DW
2-Chlorotoluene	CT,MA,NH,NY,RI,VT-DW
4-Chlorotoluene	CT,MA,NH,NY,RI,VT-DW
Dibromochloromethane	MA,NH,NY,RI,ME,VA,VT-DW
Dibromomethane	CT,MA,NH,NY,RI,VT-DW
1,2-Dichlorobenzene	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,3-Dichlorobenzene	CT,MA,NH,NY,RI,VT-DW
1,4-Dichlorobenzene	CT,MA,NH,NY,RI,ME,VA,VT-DW
Dichlorodifluoromethane (Freon 12)	CT,MA,NH,NY,RI,VT-DW
1,1-Dichloroethane	CT,MA,NH,NY,RI,VT-DW
1,2-Dichloroethane	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,1-Dichloroethylene	CT,MA,NH,NY,RI,ME,VA,VT-DW
cis-1,2-Dichloroethylene	CT,MA,NH,NY,RI,ME,VA,VT-DW
trans-1,2-Dichloroethylene	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,2-Dichloropropane	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,3-Dichloropropane	CT,MA,NH,NY,RI,VT-DW
2,2-Dichloropropane	CT,MA,NH,NY,RI,VT-DW
1,1-Dichloropropene	CT,MA,NH,NY,RI,VT-DW
cis-1,3-Dichloropropene	CT,MA,NH,NY,RI,VT-DW
trans-1,3-Dichloropropene	CT,MA,NH,NY,RI,VT-DW
1,3-Dichloropropene (total)	CT,MA
Ethylbenzene	CT,MA,NH,NY,RI,ME,VA,VT-DW
Hexachlorobutadiene	CT,MA,NH,NY,RI,VT-DW
Isopropylbenzene (Cumene)	CT,MA,NH,NY,RI,VT-DW
p-Isopropyltoluene (p-Cymene)	CT,MA,NH,NY,RI,VT-DW
Methyl tert-Butyl Ether (MTBE)	CT,MA,NH,NY,RI,ME,VT-DW
Methylene Chloride	CT,MA,NH,NY,RI,ME,VA,VT-DW
Naphthalene	NY
n-Propylbenzene	NY,VT-DW
Styrene	CT,MA,NH,NY,RI,ME,VA,VT-DW

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 524.2 in Drinking Water	
1,1,1,2-Tetrachloroethane	CT,MA,NH,NY,RI,VT-DW
1,1,2,2-Tetrachloroethane	CT,MA,NH,NY,RI,VT-DW
Tetrachloroethylene	CT,MA,NH,NY,RI,ME,VA,VT-DW
Toluene	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,2,3-Trichlorobenzene	CT,MA,NH,NY,RI,VT-DW
1,2,4-Trichlorobenzene	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,1,1-Trichloroethane	CT,MA,NH,NY,RI,ME,VA,VT-DW
1,1,2-Trichloroethane	CT,MA,NH,NY,RI,ME,VA,VT-DW
Trichloroethylene	CT,MA,NH,NY,RI,ME,VA,VT-DW
Trichlorofluoromethane (Freon 11)	CT,MA,NH,NY,RI,VT-DW
1,2,3-Trichloropropane	CT,MA,NH,NY,RI,VT-DW
1,2,4-Trimethylbenzene	CT,MA,NH,NY,RI,VT-DW
1,3,5-Trimethylbenzene	CT,MA,NH,NY,RI,VT-DW
Vinyl Chloride	CT,MA,NH,NY,RI,ME,VA,VT-DW
m&p-Xylene	VA
o-Xylene	VA
Xylenes (total)	CT,MA,NH,NY,RI,ME,VA,VT-DW
NECi N07-0003 in Water	
Nitrate as N	NC,NY,MA,NH,RI,ME,VA
Nitrite as N	NC,NY,RI,NH,ME,VA
SM21-23 4500 H B in Water	
pH	CT,MA,RI

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

21H 1648

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Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 4_01/08/2020

Page 1 of 1

Company Name: Klein Felder
Address: 550 West C Street Unit 1209
Phone: 619-871-4600
Project Name: Dover MA Hydrology Study
Project Location: Dover MA.
Project Number: 2022164B8.00 1A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number: 2108545
Invoice Recipient:
Sampled By: Patrick Monahan

Requested Turnaround Time
7-Day ☐ 10-Day ☒
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: abbishop@kleinfelder.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
☒ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	HCl	524.2	Methanol preserved	Nitric Acid/Nitrate
1	MW-17b	8/31/21	1240	Grab	GW		3		4			X	X	X	X
2	MW-15	8/31/21	1430	Grab	GW		3		4			X	X	X	X
3	MW-13	8/31/21	1610	Grab	GW		3		4			X	X	X	X

[2] Preservation Code

Total Number Of:
VIALS 9
GLASS
PLASTIC 12
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Contest is not responsible for missing samples from prepacked coolers

Relinquished by: (signature) — Date/Time: 8/31/21 1645
Received by: (signature) — Date/Time: 8/31/21 1645
Relinquished by: (signature) — Date/Time: 8/31/21 1830
Received by: (signature) — Date/Time: 8/31/21 1830
Relinquished by: (signature) — Date/Time:
Received by: (signature) — Date/Time:
Relinquished by: (signature) — Date/Time:
Received by: (signature) — Date/Time:

Client Comments: Per client no state form needed, report total metals, analyze to DW standards 9/1/21

Detection Limit Requirements
MA DW Reg
CT
Other
PWSID #

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☑ MA State DW Required

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Comments: Analyze to MADEP Drinking Water Standards

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Kleinfelder

Received By CC Date 5/31/21 Time 1930

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.5 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? F

Did COC include all pertinent Information? Client T Project F Analysis T ID's T Sampler Name T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? T Who was notified? Cassie

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid T Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	9	500 mL Amb.		500 mL Plastic	3	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	9	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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September 21, 2021

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 20221968.019A
Laboratory Work Order Number: 21I0591

Enclosed are results of analyses for samples received by the laboratory on September 13, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

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Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 9/21/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20221968.019A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21I0591

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-9	21I0591-01	Ground Water		EPA 300.0	
MW-7B	21I0591-02	Ground Water		EPA 300.0	
MW-4	21I0591-03	Ground Water		EPA 300.0	
MW-3	21I0591-04	Ground Water		EPA 300.0	
MW-1	21I0591-05	Ground Water		EPA 300.0	

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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

EPA 300.0

Qualifications:

MS-07

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Chloride

21I0591-04[MW-3], B290503-MS2

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0591

Date Received: 9/13/2021

Field Sample #: MW-9 | Sampled: 9/1/2021 09:35

Sample ID: 21I0591-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	4.0	1.0	mg/L	1		EPA 300.0	9/18/21	9/18/21 16:03	IS

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0591

Date Received: 9/13/2021

Field Sample #: MW-7B | Sampled: 9/1/2021 11:30

Sample ID: 21I0591-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	110	5.0	mg/L	5		EPA 300.0	9/20/21	9/20/21 17:17	IS

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0591

Date Received: 9/13/2021

Field Sample #: MW-4 | Sampled: 9/1/2021 13:00

Sample ID: 21I0591-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	180	5.0	mg/L	5		EPA 300.0	9/20/21	9/20/21 17:40	IS

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0591

Date Received: 9/13/2021

Field Sample #: MW-3 | Sampled: 9/1/2021 14:05

Sample ID: 21I0591-04

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	37	1.0	mg/L	1	MS-07	EPA 300.0	9/20/21	9/20/21 18:02	IS

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0591

Date Received: 9/13/2021

Field Sample #: MW-1 | Sampled: 9/1/2021 15:45

Sample ID: 21I0591-05

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	180	5.0	mg/L	5		EPA 300.0	9/20/21	9/20/21 22:17	IS

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Sample Extraction Data

Prep Method: EPA 300.0 **Analytical Method: EPA 300.0**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0591-01 [MW-9]	B290488	10.0	10.0	09/18/21

Prep Method: EPA 300.0 **Analytical Method: EPA 300.0**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0591-02 [MW-7B]	B290503	10.0	10.0	09/20/21
21I0591-03 [MW-4]	B290503	10.0	10.0	09/20/21
21I0591-04 [MW-3]	B290503	10.0	10.0	09/20/21
21I0591-05 [MW-1]	B290503	10.0	10.0	09/20/21

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B290488 - EPA 300.0											
Blank (B290488-BLK1)				Prepared & Analyzed: 09/17/21							
Chloride	ND	1.0	mg/L								
LCS (B290488-BS1)				Prepared & Analyzed: 09/17/21							
Chloride	10	1.0	mg/L	10.0		102		90-110			
LCS Dup (B290488-BSD1)				Prepared & Analyzed: 09/17/21							
Chloride	10	1.0	mg/L	10.0		102		90-110	0.00787	20	
Batch B290503 - EPA 300.0											
Blank (B290503-BLK1)				Prepared & Analyzed: 09/20/21							
Chloride	ND	1.0	mg/L								
LCS (B290503-BS1)				Prepared & Analyzed: 09/20/21							
Chloride	9.8	1.0	mg/L	10.0		97.8		90-110			
LCS Dup (B290503-BSD1)				Prepared & Analyzed: 09/20/21							
Chloride	9.8	1.0	mg/L	10.0		98.0		90-110	0.226	20	
Duplicate (B290503-DUP2)	**Source: 21I0591-04**			Prepared & Analyzed: 09/20/21							
Chloride	37	1.0	mg/L		37				0.985	20	
Matrix Spike (B290503-MS2)	**Source: 21I0591-04**			Prepared & Analyzed: 09/20/21							
Chloride	44	1.0	mg/L	10.0	37	**62.4**	*	80-120			MS-07

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

21I0591

21I0085

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Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

Doc # 381 Rev 4_01/08/2020

Page 1 of 1

Company Name:	Kleinfelder
Address:	550 West C Street San Diego CA
Phone:	614-831-4600
Project Name:	Dover MA Hydrology Study
Project Location:	Dover MA
Project Number:	20221468.001A
Project Manager:	Kirsten Ryan
Con-Test Quote Name/Number:	2108545
Invoice Recipient:	
Sampled By:	Patrick Monahan

Requested Turnaround Time
7-Day ☐ 10-Day ☒
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☐ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: abbrshop@kleinfelder.com
Fax To #:

Dissolved Metals Samples
○ Field Filtered
⊘ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED: pH; VOCs via 524.2; Mg/Mn/Al and sulfate; Nitrate/Nitrite

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code[1]	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	pH	VOCs via 524.2	Mg/Mn/Al and sulfate	Nitrate/Nitrite
1	MW-4	9/1/21	0935	Grab	GW		3		4			X	X	X	X
2	MW-7B	↓	1130	↓	GW		3		4			X	X	X	X
3	MW-4		1300		GW		3		4			X	X	X	X
4	MW-3		1425		GW		3		4			X	X	X	X
5	MW-1		1545		GW		3		4			X	X	X	X

Signature	Date/Time
Relinquished by: (signature) [signature]	9/1/21 1050
Received by: (signature) Jon Gorres 4:45	9-1-21
Relinquished by: (signature) Jon Gorres 8:45	9-1-21
Received by: (signature) [signature] 5.1	9/1/21 2045
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Client Comments:

Per client state form not needed, total metals need, analyze to DW standards 9/2/21 KF

Detection Limit Requirements
MA (circled)
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☒ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

[2] Preservation Code

Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N

*Contest is not responsible for missing samples from prepacked coolers

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Comments:

MA DEP drinking water standards

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Activate all samples for chloride per client request 9/21/21 KF

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Kleinfelder

Received By ZL Date 9/1/21 Time 2045

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 3 Actual Temp - 5.1
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? n/a Were Samples Tampered with? n/a
Was COC Relinquished ? T Does Chain Agree With Samples? T
Are there broken/leaking/loose caps on any samples? F
Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T
Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? T Who was notified? David
Is there enough Volume? T
Is there Headspace where applicable? F MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? F On COC? F
Do all samples have the proper pH? Acid T Base n/a

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	15	500 mL Amb.		500 mL Plastic	5	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	15	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

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September 21, 2021

Kristen Ryan
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: Dover, MA
Client Job Number:
Project Number: 20221968.091A
Laboratory Work Order Number: 21I0589

Enclosed are results of analyses for samples received by the laboratory on September 13, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Kristen Ryan

REPORT DATE: 9/21/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20221968.091A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21I0589

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Dover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-17b	21I0589-01	Ground Water		EPA 300.0	
MW-15	21I0589-02	Ground Water		EPA 300.0	
MW-13	21I0589-03	Ground Water		EPA 300.0	

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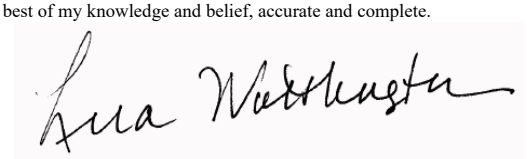
CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Technical Representative

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0589

Date Received: 9/13/2021

Field Sample #: MW-17b | Sampled: 8/31/2021 12:40

Sample ID: 21I0589-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	63	5.0	mg/L	5		EPA 300.0	9/20/21	9/20/21 16:10	IS

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Project Location: Dover, MA | Sample Description: | Work Order: 21I0589

Date Received: 9/13/2021

Field Sample #: MW-15 | Sampled: 8/31/2021 14:30

Sample ID: 21I0589-02

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	450	10	mg/L	10		EPA 300.0	9/20/21	9/20/21 16:32	IS

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Project Location: Dover, MA
Sample Description:
Work Order: 21I0589

Date Received: 9/13/2021

Field Sample #: MW-13
Sampled: 8/31/2021 16:10

Sample ID: 21I0589-03

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	95	5.0	mg/L	5		EPA 300.0	9/20/21	9/20/21 16:55	IS

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Sample Extraction Data

Prep Method: EPA 300.0 **Analytical Method: EPA 300.0**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0589-01 [MW-17b]	B290503	10.0	10.0	09/20/21
21I0589-02 [MW-15]	B290503	10.0	10.0	09/20/21
21I0589-03 [MW-13]	B290503	10.0	10.0	09/20/21

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B290503 - EPA 300.0										
Blank (B290503-BLK1)				Prepared & Analyzed: 09/20/21						
Chloride	ND	1.0	mg/L							
LCS (B290503-BS1)				Prepared & Analyzed: 09/20/21						
Chloride	9.8	1.0	mg/L	10.0		97.8	90-110			
LCS Dup (B290503-BSD1)				Prepared & Analyzed: 09/20/21						
Chloride	9.8	1.0	mg/L	10.0		98.0	90-110	0.226	20	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

21H1648

21I0589

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Email: info@contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 4_01/08/2020

Page 1 of 1

Company Name: Kleinfelder
Address: 550 West C Street unit 1200
Phone: 619-831-4600
Project Name: Dover MA Hydrology Study
Project Location: Dover M.A.
Project Number: 20221648.001A
Project Manager: Kirsten Ryan
Con-Test Quote Name/Number: 2108545
Invoice Recipient:
Sampled By: Patrick Monahan

Requested Turnaround Time
7-Day ☐ 10-Day ☒
PFAS 10-Day (std) ☐ Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Dissolved Metals Samples
○ Field Filtered
☒ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Data Delivery
Format: PDF ☑ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: abbashope@kleinfelder.com
Fax To #:

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code[1]	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	pH	VOC's 524.2	Manganese and Sodium	N Nitrate/Nitrite
1	MW-17b	8/31/21	1240	Grab	GW		3		4			X	X	X	X
2	MW-15	8/31/21	1430	Grab	GW		3		4			X	X	X	X
3	MW-13	8/31/21	1610	Grab	GW		3		4			X	X	X	X

[2] Preservation Code

Total Number Of:
VIALS 9
GLASS
PLASTIC 12
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N

*Contest is not responsible for missing samples from prepacked coolers

[1] **Matrix Codes:**
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] **Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time:
Relinquished by: (signature) [signature]	8/31/21 1645
Received by: (signature) [signature]	8/31/21 1645
Relinquished by: (signature) [signature]	8/31/21 1830
Received by: (signature) [signature] 2.5	8/31/21 1830
Relinquished by: (signature)	
Received by: (signature)	
Relinquished by: (signature)	
Received by: (signature)	

Client Comments: Per client no state form needed, report total metals, analyze to DW standards 9/1/21

Detection Limit Requirements
MA: DW Reg
CT:
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☑ MA State DW Required
PWSID #

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

Comments:
analyze to MA DEP Drinking Water Standards

tivate all samples for chloride per client request 9/21/21 KF

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Kleinfelder

Received By CC Date 5/31/21 Time 1930

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____ Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 2.5 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? F

Did COC include all pertinent Information? Client T Project F Analysis T ID's T Sampler Name T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? T Who was notified? Cassie

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid T Base _____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-	9	500 mL Amb.		500 mL Plastic	3	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	9	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

PLATES

1- Hydrogeology Map
2- Hydrography and Environmental Map
3- Hydrology Study Monitoring Network (Updated)


CONCORD RIVER BASIN
CHARLES RIVER BASIN
BOSTON HARBOR
FISK POND
DUG POND
SABRINA LAKE
LITTLE FARM POND
FARM POND
LYMANS POND
CHANNINGS POND
HALES POND
RESERVE POND
CHICKERING LAKE
ECHO LAKE
NEEDHAM RESERVOIR
POWISSETT POND
NOANNET POND
LEE POND
STEVENS POND
LYMANS POND
FISHER MEADOW
BUCKMASTER POND
Charles River
MW-01
MW-02
MW-03
MW-04
MW-05
MW-06
MW-07B
MW-09
MW-11
MW-13
MW-14
MW-15
MW-16
MW-17
MW-18
MW-19
LEGEND
Private Wells from EEA Database
Work Performed
Decommission
Deepen
Hydrofracture
All Other Work
Public Water Supplies
Community Groundwater Source
Surface Water Intake
Non-Community Groundwater Source
Emergency Surface Water
Town of Dover Monitoring Wells
Town of Dover Monitoring Wells
USGS Stream Gaging Stations
USGS Stream Gaging Stations
USGS Data Collection Stations
USGS Data Collection Stations
Dover Boundary
Dover Boundary
Major Subbasins
Major Subbasins
Rivers and Streams
Perennial Stream
Intermittent Stream
Lakes, Ponds and Wetlands
Lake or Pond
Wetland
Shallow Bedrock
Abundant Outcrop and Shallow Bedrock
Postglacial Deposits
Artificial Fill
Postglacial Deposits
Type
Floodplain Alluvium
Swamp and marsh deposits
Glacial Stratified Deposits
Coarse
Glaciolacustrine Fine
Thick Till and Moraine
Thick Till
Bedrock Outcrops and Thin Till
Bedrock Outcrop
Thin Till
0 0.125 0.25 0.5
Miles
N

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PLATE 1
Hydrogeology Map

Dover, MA

FIGURE

1

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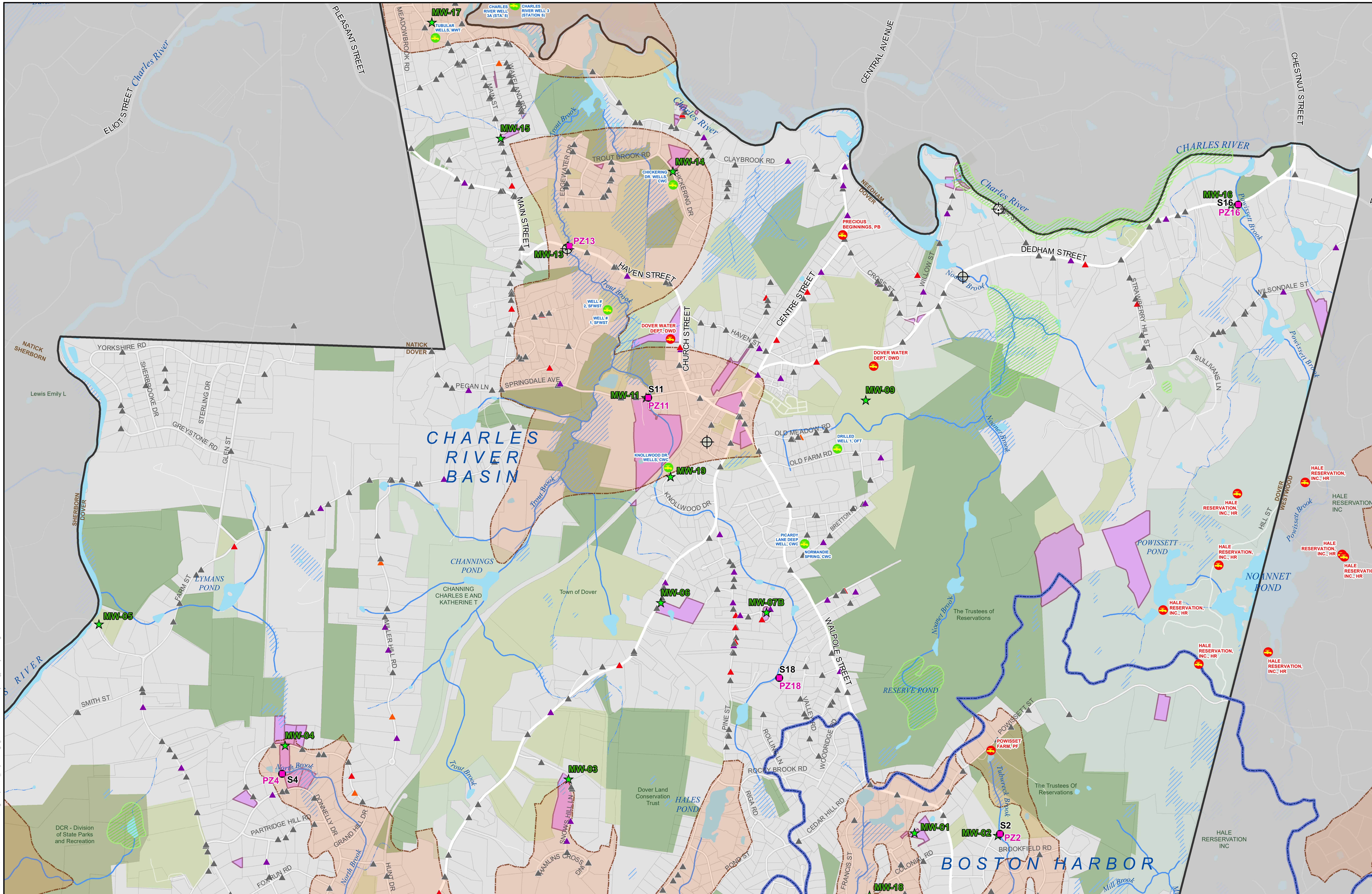
PLATE 2
Hydrography and Environmental Map

Dover, MA

FIGURE

2



LEGEND

Town of Dover Piezometer
- Town of Dover Piezometer

Town of Dover Stream Gauge
- Town of Dover Stream Gauge

Town of Dover Monitoring Well
- Town of Dover Monitoring Well

USGS Stream-Gaging Stations
- USGS Stream-Gaging Stations

USGS Data Collection Stations
- USGS Data Collection Stations

Public Water Supplies
- Community Groundwater Source
- Non-Community Groundwater Source

Private Wells from EEA Database
Work Performed
- Decommission
- Deepen
- Hydrofracture
- All Other Work

MassDEP Zone II Protection Areas
- MassDEP Zone II Protection Areas

Rivers and Streams
- Perennial Stream
- Intermittent Stream

Major Subbasins
- Major Subbasins

Water Bodies
- Pond, Lake, Ocean
- Reservoir
- Wetlands

Town Owned Parcels
- Town Owned Parcels

Open Space
Protected Open Space by Owner
- Municipal
- Federal
- State
- Land Trust
- Priv. Nonprofit
- Private

Tax Parcels (2018, MassGIS)
- Tax Parcels (2018, MassGIS)

Dover Boundary
- Dover Boundary

0 0.1 0.2 0.4 Miles

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PLATE 3
Hydrology Study Monitoring Network

Dover, MA

FIGURE
3