



Phase V Status & Remedial Monitoring Report

Former Bird Machine Company Site
100 Neponset Street
Walpole, Massachusetts
RTN 4-3024222

Prepared for:

Baker Hughes

Sugar Land, Texas 77478

February 17, 2022



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Prepared by:

Wood Massachusetts, Inc.
271 Mill Road
3rd Floor
Chelmsford, MA 01824
USA
T: 978-692-9090

February 17, 2022

Prepared by:

Samantha Mizusawa
Geologist

Reviewed by:

Kim Henry, LSP
Program Manager

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Executive summary

On behalf of Baker Hughes, Wood Massachusetts, Inc. (Wood MA), completed this Phase V Status and Remedial Monitoring Report (RMR) for the former Bird Machine Company (BMC) Site located in Walpole, Massachusetts. Baker Hughes is submitting this RMR pursuant to 310 CMR 40.0890 of the Massachusetts Contingency Plan (MCP). This RMR documents the operation of a Comprehensive Remedial Action that is expected to be a Permanent Solution for the Site, and that was installed as described in the Phase IV Final Inspection Report (FIR; AMEC 2012). A Permanent Solution will achieve a condition of No Significant Risk (NSR) for current and reasonably foreseeable site uses. As documented in the Class C-2 Response Action Outcome (RAO) Statement submitted to the Massachusetts Department of Environmental Protection (MassDEP) on December 16, 2011, the Site already achieves the requirements of a Temporary Solution (AMEC 2011a).

Release Abatement Measures (RAMs) have been conducted at several locations between 2005 and 2011 to reduce the mass and concentrations of contaminants at the Site. The Phase II Comprehensive Site Assessment (CSA) reports (AMEC 2011b, AMEC 2011c) indicate that a condition of NSR exists for all areas of the Site except groundwater, where some monitoring well concentrations exceed drinking water criteria (Massachusetts Maximum Contaminant Levels or MMCLs). It is unlikely that groundwater at the Site will be used for drinking water, but the Site is within a Potential Drinking Water Source Area designated by the Town of Walpole (Walpole 2007). Considering this designation, groundwater at the Site is categorized as GW-1 under the MCP. The CSA reports found no current pathway between Site contaminants and the Town's water supply wells to the northeast, but the potential for contaminant movement from a portion of the Site warrants further monitoring.

Areas of groundwater contamination exceeding MMCLs were identified for arsenic, chlorinated Volatile Organic Compounds (cVOCs), and 1,4-dichlorobenzene (DCB). A Monitored Natural Attenuation (MNA) remedy consisting of active monitoring of natural processes was selected to achieve clean up goals and was installed in accordance with Phase IV of the MCP. MNA is considered an Active Remedial Monitoring Program under the MCP and has been designed and constructed to provide a Permanent Solution that achieves a condition of NSR, as described in the FIR (AMEC 2012).

The August 2013 Phase V Status and Remedial Monitoring Report (RMR; AMEC 2013a) coincided with one year of initial process monitoring as described in the FIR. At that time, it was determined that initial process monitoring had confirmed that key MNA processes were underway and a transition to long-term performance monitoring was appropriate. Long-term monitoring is designed to confirm that site conditions remain suitable for MNA, and that overall contaminant concentrations and mass are decreasing within a reasonable timeframe.

The long-term monitoring program performed until 2018 included quarterly sampling at six locations within the plumes that have had significant fluctuations in recent contaminant concentrations above the MMCLs, semi-annual sampling at nine other wells within the horizontal



and vertical extent of the plume areas where previous quarterly sampling shows little variation in concentrations, and annual sampling at 23 wells along the plume lateral or vertical edges where concentrations are below MMCLs. The results over the first five years of monitoring showed consistent results with concentrations at many wells below $\frac{1}{2}$ the MMCL, which is the selected remedial goal for the Site. As a result, some monitoring wells were selected for reduced sampling frequency, or removal from the long-term monitoring program. These changes were implemented beginning in the third quarter of 2018. The current Operation, Maintenance, and Monitoring (OMM) program is summarized in **Table 1** and includes performance of long-term monitoring in March (quarterly), June (quarterly, semi-annual, and annual), September (quarterly), and December (quarterly and semi-annual). Analytes for long-term monitoring consist of the contaminants exceeding MMCLs and their primary breakdown products.

Groundwater sampling results from the September 2021 and December 2021 rounds indicate that MNA processes continue to reduce the overall mass and concentrations of contaminants at the Site. Concentrations within the DCB plume have continued to decline steadily, and the remedial goals have now been achieved for all wells within the plume. While some wells in the interior of the cVOC plume continue to show fluctuating concentrations above the MMCL, the plume is stable or contracting as evidenced by the overall decreasing contaminant trends. Recent arsenic results indicate that the overall plume is stable (i.e. not expanding), however they also show that concentrations within the plume interior can vary significantly. No significant changes to the Conceptual Site Model (CSM) are warranted based on the latest measurements.



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List of Acronyms

bgs	Below ground surface
BMC	Bird Machine Company
BWSC	Bureau of Waste Site Cleanup
cfs	Cubic feet per second
cis-1,2-DCE	cis-1,2-dichloroethene
CMR	Code of Massachusetts Regulations
COC	Contaminants of Concern
CSA	Comprehensive Site Assessment
cVOC	Chlorinated Volatile Organic Compounds
DCB	1,4-dichlorobenzene
DDA	Demolition Debris Area
DO	Dissolved Oxygen
EPH	Extractable Petroleum Hydrocarbons
FIR	Final Inspection Report (310 CMR 40.0878)
ft	Feet
HASP	Health and Safety Plan
LRA3	Lead Release Area 3
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MBA	Manufacturing Building Area
MCP	Massachusetts Contingency Plan
mg/L	Milligrams per liter
MMCL	Massachusetts Maximum Contaminant Level for drinking water
MNA	Monitored Natural Attenuation



mV	Millivolts
NAPL	Non-aqueous phase liquid
ND	Not Detected by laboratory analysis
NSR	No Significant Risk
OHM	Oil or Hazardous Material
OMM	Operation, Maintenance, and Monitoring
ORP	Oxidation-Reduction Potential
PCE	Tetrachloroethylene
ppb	Parts per billion (for groundwater, micrograms per liter)
RAM	Release Abatement Measure
RAP	Remedial Action Plan
RC	Reportable Concentration
RMR	Remedial Monitoring Report
ROS	Remedy Operation Status
RTN	Release Tracking Number
SRS	South Rail Spur
SVOC	Semivolatile Organic Compound
TCB	1,2,4-Trichlorobenzene
TCE	Trichloroethene
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VC	Vinyl Chloride
VOC	Volatile Organic Compounds



1.0 Site Background

On behalf of Baker Hughes, Wood Massachusetts, Inc. (Wood MA) completed this Phase V Status Report & Remedial Monitoring Report (RMR) for the former Bird Machine Company (BMC) Site located in Walpole, Massachusetts. This document is submitted pursuant to 310 CMR 40.0892 of the Massachusetts Contingency Plan (MCP). This Report documents operation of Monitored Natural Attenuation (MNA), an Active Remedial Monitoring Program, which is the selected remedy to achieve a Permanent Solution for the Site. The Site location is indicated in **Figure 1** and the following is general information pertaining to the MCP status.

Release Tracking Number (RTN): RTN 4-3024222

Tier Classification: Tier IB

Site Address: 100 Neponset Street
Walpole, Massachusetts 02071-1037

Person Undertaking Response Actions: Baker Hughes
12645 West Airport Boulevard
Sugar Land, Texas 77478
Contact: Mr. Chris Clodfelter
Phone: (832) 668-0112

Licensed Site Professional (LSP): Kim M. Henry (License #7122)
Wood Massachusetts, Inc.
271 Mill Road
Chelmsford, Massachusetts 01824
Phone: (978) 692-9090

A Tier 1B Permit Application was submitted to the Massachusetts Department of Environmental Protection (MassDEP) on January 10, 2008, including a revised Tier Classification and updated Phase I information combining several linked sites under the subject RTN. Tier 1B permit #W204776 for this RTN was effective on February 28, 2008 and expired on February 28, 2013. Because Remedy Operation Status (ROS; AMEC, 2013b) was achieved and a ROS Opinion filed with the MassDEP on February 13, 2013, renewal of the permit was not required under the MCP.

This RMR is organized as follows:

- ▶ Section 1 – Site Background
- ▶ Section 2 – Operation, Maintenance, and Monitoring
- ▶ Section 3 – OMM Modifications Since the Preceding Report
- ▶ Section 4 – Evaluation of Effectiveness

- ▶ Section 5 – Recommendations and CSM
- ▶ Section 6 – References

1.1 Disposal Site Description

The Site, defined in the MCP as the area where the release "has come to be located," is in the central portion of the 108-acre Property. The approximate universal transverse mercator coordinates for the Site are 4,664,600 North and 312,700 East (World Geodetic System 1984/North American Datum 1983), based on the United States Geological Survey (USGS) Franklin Quadrangle Map, 1987. The Site Location Map, **Figure 1**, shows the regional location of the Site and positions of the nearest municipal water supply wells. Access to the property and Site is obtained via Neponset Street; this road and other Site features are depicted on an aerial photo in **Figure 2**. The Neponset River flows around the Site from the south to the northeast. Ruckaduck Pond is located to the west and was formerly used for water power, with dams maintaining an elevation several feet above the downstream river. An outlet from Ruckaduck Pond (formerly used to power a turbine) channels water through the Site via an underground pipe, discharging to the river on the east side.

As documented in the Phase II CSA, historical maps [including Sanborn Library, LLC Fire Insurance (Sanborn) Maps] were reviewed to determine the previous owner/operators of the property and the operations history. The Property appears to have been developed by 1832 with a "shingle mill" and two houses south of the Site, and a small pond in the present location of Ruckaduck Pond. A map dated 1852 indicates "Smith's Mill" and three houses in the same area. A map dated 1888 indicates the Walpole Emery Mill in the same area, and Old Colony Railroad in its present location along the western edge of the Site. Sanborn maps from 1918 indicate that a railroad spur and three "factory" buildings had been constructed, and an open channel or "tailrace" had been constructed downstream of one of the factory buildings to convey water used for powering machinery back to the Neponset River. The BMC reportedly started operations at the property in 1919.

The 1927 and 1944 Sanborn Fire Insurance Maps indicate larger industrial buildings at the property, including a machine shop, casting shed, lumber shed, assembling, welding shop, and office. A 1940 USGS Topographic Map which contains more detailed topography in the vicinity of the Site, indicates the boundary of the Cedar Swamp, and shows Cedar Swamp Brook. Historical aerial photographs and facility plans from 1931 to 1978 indicate that the Neponset River was rerouted at different times to facilitate the expansion of buildings and the addition of new structures. The open tailrace channel was filled in and replaced with a buried 24-inch concrete pipe in 1966. The industrial buildings on the Property were expanded several times in the 1960s and 1970s.

BMC primarily manufactured and repaired industrial centrifuges on the Property. Baker Hughes Incorporated acquired BMC in 1989. BMC became an operating unit within Baker Process, Inc., a wholly owned subsidiary of Baker Hughes Incorporated. Baker Hughes is the present owner of the Property.

Manufacturing operations at the Property were discontinued in 2004, and most buildings associated with the former BMC were demolished by 2008, except for a fire pump house (building no. 9), garage (19), and guard shack (21) (**Figure 3**). The garage (19) was demolished in 2016 during RAM activities for construction of a solar photovoltaic array farm. Other site features which remain included floors and frost walls of demolished buildings 1, 3, 5, 19, 20, 22, and 23; frost walls of demolished buildings 4, 4A, 6A, 7A, 8, 8A, 12, and 15; and pavement around the former buildings except where it was removed for RAM excavations. **Figure 3** also shows remaining subsurface drains that lead to outfalls in the Neponset River. These drains were connected to the former buildings (roof drains or sanitary lines) or to surface catch basins, a few of which still remain as indicated in the figure. Note that the drain line connecting the pond and the river was installed within a former masonry-lined tail race; the masonry was observed in place near the southeast wall of former building 1 during building demolition and may still exist on either side of the drain in other areas. **Figure 3** shows several subsurface structures which were left in place following building demolition: a 10,000-gallon concrete wastewater sump that was cleaned and filled with sand; several sections of Transite pipe encased in concrete; a 5,000-gallon steel wastewater tank that was closed in place near former building 4 by filling with concrete; and a reinforced-concrete base for a wastewater pump station adjacent to the 5,000-gallon tank. The RAM excavation areas in **Figure 3**, and the areas above the structures left in place, have been filled to grade with sandy soil.

The Property is zoned Limited Manufacturing, which allows a wide range of commercial, institutional, and residential uses. The Property is also grandfathered for industrial use. Beginning in 2016 a portion of the site was leased to Bird Machine Solar Farm, LLC (BMSF) for re-development as a solar photovoltaic array farm. Construction activities were conducted as a RAM because disturbance of soil within the Disposal Site boundary was required to install support pilings and subsurface utilities. Construction activities were completed in late 2016 and included surrounding the entire solar farm with a chain link fence. Current human receptors at the Site are limited to occasional trespassers and utility workers periodically inspecting or working on the solar panels.

The area surrounding the property has a mixture of residential and recreational (undeveloped forests and wetlands) uses. In 2005 there were 273 residences with an estimated 743 residents located within ½-mile of the Site (Weston, 2005). There are no inhabited houses or private water supply wells within 500 feet (ft.) of the Site. There are no schools, day care centers, playgrounds, or parks within 500 ft. of the Site. The 1987 USGS Franklin quadrangle map depicts the Boyden School located approximately 0.35 mile southeast of the Property, and 0.5 miles southeast of the Site. The nearest public water supply wells are slightly over one-mile northeast of the Site as indicated in **Figure 1**.

1.2 Release History and Response Actions

The Site includes multiple RTNs due to the discovery of various releases at the property during past investigations. Timing of releases is not well known, and the Site was used for manufacturing from at least 1832 to 2004. The RTNs were linked together to facilitate administrative compliance

with MCP requirements. Three exposure areas were identified and evaluated in the October 2011 Phase II CSA Report (AMEC 2011b): the Manufacturing Building Area (MBA), the Lead Release Area 3 (LRA3), and the South Rail Spur (SRS). A separate exposure area was addressed in the December 2011 Phase II CSA Addendum (AMEC 2011c); the Demolition Debris Area (DDA). All four areas are shown on **Figure 2**. Release Abatement Measures were conducted at several locations within the DDA, MBA, and LRA3 to reduce the mass and concentrations of contaminants at the Site. The CSAs indicate that a condition of No Significant Risk exists for all areas of the Site except groundwater within the MBA, where some monitoring well concentrations exceed drinking water criteria.

The remaining contamination at the MBA includes metals (primarily antimony, barium, lead, nickel, and zinc) and Extractable Petroleum Hydrocarbon (EPH) compounds in soil. The concentrations of metals and Semivolatile Organic Compounds (SVOCs) have been reduced significantly by soil excavation RAMs. The remaining elevated concentrations in soil are under and around the former locations of manufacturing buildings. These soil concentrations were found to pose No Significant Risk for current and future foreseeable uses of the Site.

Groundwater sampling indicates that elevated concentrations of arsenic and cVOCs are present in the area adjoining the river downgradient of the manufacturing buildings. Groundwater concentrations in these areas exceed drinking water criteria. Historically, chlorobenzenes have been elevated in two wells located in the north parking area; however, for the past several years, concentrations have remained below the MMCL. The updated extent of these exceedances is provided in Section 4 based on the results of recent monitoring. It is unlikely that groundwater at the Site will be used for drinking water, but the Site is within a Potential Drinking Water Source Area designated by the Town of Walpole (Walpole 2007). Considering this designation, groundwater at the Site is categorized as GW-1 under the MCP.

1.3 Hydrogeological Characteristics

The southeastern portion of the Site includes sand and gravel fill up to 10 feet thick; the fill is generally thickest where the Neponset River was rerouted. Beneath the fill layer, a 5-foot to 10-foot thick silty sand layer is present, which thins to a few feet in the west where bedrock is at a depth of 10 feet or less. The bedrock surface slopes downward to the east and is typically 20 to 30 feet deep near the river. Where bedrock deepens, the silty sand is underlain by a coarser silty sand and gravel in thicknesses of up to 20 feet. Cross sections including the latest contaminant findings are presented in Section 4.

Most borings at the Site were not cored into rock, and drilling refusals are generally interpreted as the bedrock surface unless inconsistent with borings that were cored or hammered to confirm rock. A bedrock low of about 45 ft. below ground surface (bgs) occurs in the east-central portion of the Site near monitoring well MW-708. Bedrock cored during the FIR monitoring well installations consisted of two distinct rock types, conglomerate and shale. The interpreted bedrock surface map is provided in **Figure 4**.

Bedrock at MW-702 to the northwest and MW-710 to the east consisted of alternating layers of consolidated to unconsolidated conglomerate containing a mixture of angular to rounded boulders and sand. The layers consisted of approximately 5-foot thick consolidated rock alternating with approximately 3-foot thick unconsolidated boulders and sand. These alternating layers are consistent with highly fractured and weathered conglomerate material having been repeatedly faulted and folded. Bedrock at MW-708, a few hundred feet west of MW-710, consisted of slightly weathered shale in approximately 2-centimeter thick bedding layers. These layers were oriented vertically, suggesting previous faulting and folding in the area.

The water table beneath the Site occurs approximately 1 to 5 ft. bgs in either fill or sand. Bedrock is believed to impede vertical flow as it is generally less transmissive than the shallow sand aquifer, depending on competency. Groundwater in the sand aquifer appears to be discharging to the Neponset River or its associated wetlands during much of the year. The water table in the areas adjacent to the river is typically less than 1-foot bgs. The horizontal direction of groundwater flow is toward the river from both sides. The vertical direction of flow is upward, discharging to the river. Vertical flow near Ruckaduck Pond is expected to be downward since the dam impounds surface water at an elevation above the water table. Mapped shallow and deep piezometric surfaces for the recent monitoring events are presented in Section 4.

Groundwater flow directions in specific areas of the MBA vary depending on water table conditions. Groundwater elevations were mapped for monitoring events in October 2006, July 2008, and April 2009 in the Remedial Action Plan (RAP; AMEC 2011d) and, based on river flow records, these three times appear to represent a range of typical median, low, and high-water tables, respectively. Significant changes in the water table surface are apparent between the three events, particularly in the southeast portion of the Site. Aside from precipitation and river flow, another difference between the events was that in 2006 the MBA buildings and pavement were still intact; while in 2007 the buildings were demolished and some pavement removed. Removal of the impervious structures may have affected infiltration patterns. Lateral groundwater seepage velocities in the sandy soils are estimated to range between 0.1 and 0.9 feet per day in the MBA, based on these three mapped events.

2.0 Operation, Maintenance, and Monitoring [310 CMR 40.0892(2)(A)]

The MNA remedy consists of an Active Remedial Monitoring Program as defined at 310 CMR 40.0006.

Initial process monitoring was conducted in the first year of OMM (August 2012 – August 2013) through quarterly sampling and measurements of water levels in the monitoring wells and river. Following the first year of initial process monitoring, it was determined that key MNA processes were underway and a transition to long-term performance monitoring was appropriate. Long-term monitoring is designed to confirm that site conditions remain suitable for MNA, and that overall contaminant concentrations and mass are decreasing within a reasonable timeframe.

Analytes for long-term monitoring consist of the contaminants exceeding MMCLs and their primary breakdown products. Analytes for the current reporting period are summarized in **Table 2** and include arsenic and volatile organic compounds (VOCs). The long-term monitoring program initially included continued quarterly sampling at 6 locations within the plumes that have had significant fluctuations in recent contaminant concentrations above the MMCLs, semiannual sampling at 9 other wells within the horizontal and vertical extent of the plume areas where previous quarterly sampling shows little variation in concentrations, and annual sampling at 23 wells along the plume lateral or vertical edges where concentrations are below MMCLs. The results over the first five years of monitoring showed consistent results with concentrations at many wells below $\frac{1}{2}$ the MMCL, which is the selected remedial goal for the Site. As a result, some monitoring wells were selected for reduced sampling frequency, or removal from the long-term monitoring program. Five of the seven wells in the DCB plume were removed from sampling; four of these wells are consistently non-detect (MW-700S, MW-701S, NP-MW-602, and NP-MW-603), and the fifth well (MW-702D) is consistently detected at a concentration below $\frac{1}{2}$ the MMCL. Seven of the 25 wells in the VOC plume were removed from the sampling program due to non-detect concentrations, including LR-MW-124, LR-MW-129, MW-710D, MW-708S, MW-708D, MW-711S, and MW-712S. Four additional wells (MW-707D, MW-709D, MW-710S, and MW-711D) were removed from semi-annual sampling to annual sampling due to consistently low concentrations detected. Due to the fluctuating concentrations, no modifications were made to monitoring wells in the arsenic plume. These changes were implemented beginning in the third quarter of 2018.

The type and frequency of current OMM under this program are summarized in the following sub-sections.

2.1 Current Monitoring Network Design and Operation

Long-term performance monitoring is currently performed at 4 monitoring wells on a quarterly basis (March, June, September, and December), 5 monitoring wells on a semi-annual basis (June and December), and 17 monitoring wells on an annual basis (June). The current OMM sampling plan for long-term performance monitoring is provided in **Table 1**. Prior to sample collection, synoptic groundwater measurements are obtained from 59 monitoring wells. The locations of monitoring wells are indicated in **Figure 5**.

Groundwater sampling is performed with low-flow sampling techniques using a peristaltic pump. Each monitoring well is equipped with dedicated polyethylene tubing, with the intake at the approximate center of the saturated screen section and at least two feet above the bottom of the well to prevent the disturbance of any sediment which may be present. The water level is measured and recorded before starting the pump. Sampling records from previously sampled wells are reviewed to determine initial flow rates, or purging will be started at flow rates of approximately 0.2 to 0.5 liters per minute. The flow rate is adjusted to ensure that little or no drawdown (less than 0.3 feet) occurs in the well. If this level of drawdown cannot be sustained, the pumping rate is reduced to the minimum capabilities of the pump to avoid pumping the well dry. The level of the water is not allowed to drop below the intake on the pump to avoid the possible entrainment of air into the sample. If the recharge rate is very low, sampling commences after the well has

been purged and groundwater has recharged to a sufficient level to purge one system volume (volume of tubing) and then the appropriate volume of sample is collected.

During the purging of the well, the field parameters (pH, temperature, conductivity, dissolved oxygen, and redox potential) are monitored every 5 minutes, or as appropriate, using a flow-through cell, until the parameters stabilize. Turbidity is monitored at the same time intervals as the other field parameters, but the sample is collected through a tee valve prior to the flow-through cell. Field parameters are considered stabilized when, for three consecutive readings, the temperature is within $\pm 3\%$, pH is within ± 0.1 , dissolved oxygen is within $\pm 10\%$ or changes less than 0.3 milligrams per liter (mg/L), redox potential is within ± 10 millivolts (mV), conductivity is within $\pm 3\%$, and turbidity is within $\pm 10\%$. An attempt is made to purge the well until turbidity of the purged water is less than 5 nephelometric turbidity units (ntu).

After purging is completed, the discharge tubing is disconnected from the flow through cell and groundwater is pumped directly into the proper sample containers. All sample containers are filled by allowing the water to flow gently down the inside of the container with minimal turbulence. Samples requiring dissolved constituent analysis are collected by pumping water through a new 0.45 μm filter into the appropriate sample container using a peristaltic pump and new silicone tubing. Sample containers, preservatives, volumes, hold times, and shipping requirements are summarized in **Table 2**. Each sample is labeled and placed into a cooler with ice for shipment to the laboratory. Sampling activities are documented using pre-printed field data sheets to record well purging and any field screening results.

2.2 Control of OHM Spills and Accidents

Site activities consist of groundwater sampling and analysis and water table measurements. Limited amounts of Oil or Hazardous Material (OHM) are associated with these activities, mainly consisting of petroleum or lubricants in vehicles or generators. Equipment containing OHM is operated in paved areas to the extent possible. Safe engineering and construction practices are implemented during all phases of work, as described in the Health and Safety Plan in the FIR.

Spills of OHM will be reported and addressed in accordance with the MCP. Any impacted material resulting from a spill of machine oil or other hazardous substances will be placed in 55-gallon waste disposal drums or other approved containers for waste characterization, off-site transportation, and disposal. Equipment that comes in contact with contaminant residuals in soil or groundwater will be decontaminated before leaving the Site. Any wash water used will be managed as described in Section 2.3. No spills of OHM occurred during the current reporting period.

2.3 Waste Management

OMM field activities at the site typically do not generate decontamination water in quantities requiring disposal. Excess groundwater collected during OMM sampling is poured back into the boring or well from which it was obtained as required by MassDEP. Development water that



cannot be returned to the boring or well, and all excess decontamination water and spill wastes are containerized and characterized for disposal at a licensed offsite waste facility. If contaminant concentrations in development water are below reportable concentrations (RC), then the water can be discharged to the pervious land surface near the well. When waste is generated from site activities, characterization and disposal are conducted within 120-days of generation.

2.4 Measures to Avoid Adverse Impacts

Field crews periodically traverse and work within wooded and wetland areas east of the Neponset River to gauge and sample several monitoring well locations. The well locations are accessed on foot to minimize adverse impacts to these sensitive areas.

2.5 Permits, Licenses and Approvals

No federal permits or approvals are required to implement OMM activities. The work is conducted under the direction of a Licensed Site Professional under the MCP as indicated in Section 1 and is subject to the Public Involvement requirements of the MCP. The public notification letter for this report is provided in **Appendix A**. The Bureau of Waste Site Cleanup (BWSC) Transmittal Form required under the MCP will be provided in **Appendix B** in the paper copy of this RMR, following final eDEP submittal.

Monitoring well installations within 100-foot wetland buffers and 200-foot Riverfront Area buffers were subject to the wetland protection requirements of the Walpole Conservation Commission and complied with their Order of Conditions. Ongoing site activities, which consist only of monitoring well sampling and gauging, are not subject to Conservation Commission requirements. All waste materials generated during response actions that cannot be reused are transported to appropriately licensed disposal facilities, in accordance with state and federal regulations.

3.0 OMM Modifications Since the Preceding Report [310 CMR 40.0892(3)(B)]

OMM activities are performed consistent with the current OMM schedule and will include performance of long-term monitoring in March (quarterly), June (quarterly, semi-annual, and annual), September (quarterly), and December (quarterly and semi-annual). Results discussed in this report include wells sampled in September and December 2021.

4.0 Evaluations of Effectiveness [310 CMR 40.0892(2)(B)]

MNA is expected to reduce concentrations of contaminants to below drinking water standards in the shallow sand aquifer at the Site, and to achieve or approach background levels. For the purpose of Presumptive Certainty in achieving or approaching background, in accordance with MassDEP Policy WSC-04-160, it is assumed that the background level of arsenic is approached at a level of 5 parts per billion (ppb) which is one-half of the MMCL criterion for this contaminant. Similarly, for cVOCs and chlorobenzenes, background would be approached at one-half of the



MMCL standards: 35 ppb for 1,2,4-Trichlorobenzene (TCB); 2.5 ppb for tetrachloroethylene (PCE), trichloroethene (TCE), or DCB; and 1 ppb for vinyl chloride (VC).

The principal MNA processes are expected to include desorption, dilution, and biodegradation, considering site conditions described in the CSA (AMEC 2011c). The Site has relatively high groundwater flow rates with seepage velocities estimated in the range of 37 to 330 ft./yr. through sandy material. Neponset River flow is estimated at 200 to 400 times greater than the groundwater discharge, based on estimates in the CSA. Anaerobic conditions and dechlorination products are observed in wells having organic contaminants. Because releases are believed to be at least decades old, plumes of contaminants likely have achieved steady state or declining concentrations. However, source removals in portions of the vadose and saturated zones during 2005 to 2008 may have affected hydrogeology and plume stability in some areas. Therefore, in the absence of any continuing sources, contaminants sorbed to the aquifer matrix are expected to continue desorbing to groundwater, biodegrading (for organics) in the aquifer, and discharging to the river. Plumes appear to be relatively dilute based on low ratios of contaminant maximum concentrations to solubilities (<0.08%), and plume widths are generally less than 200 feet.

MNA effectiveness will be demonstrated through declining contaminant concentrations and reduced plume size within a reasonable timeframe, and persistence of site conditions favorable to MNA processes. Data analysis includes graphic or tabular displays of the following measurements for contaminants of concern (COCs) and geochemical indicators:

- ▶ groundwater flow directions
- ▶ groundwater and surface water flow rates
- ▶ plume extent (horizontal & vertical)
- ▶ concentrations versus time

Data analysis includes evaluation of plume stability and loss of contaminant mass, and where possible estimates of remediation times. Evaluation of progress in achieving cleanup goals can be difficult due to subsurface and/or measurement variability, and seasonal or storm-related variations in groundwater movement. Therefore, multiple lines of evidence will be used to reduce uncertainty in evaluating the overall effectiveness. Following the evaluations in this section, the CSM will be updated as needed to ensure that it considers all data collected to date.

4.1 Flow Rates

Water level measurements were collected at shallow and deep (above bedrock) wells at the beginning of each monitoring event, on September 20, 2021 and December 1, 2021. Shallow and deep-water table contours were prepared and are provided in **Figures 6 and 7**. Neponset River flows at the nearest stream gauge in Norwood MA (USGS, 2019) are indicated on **Figure 8**.

During the September 20, 2021 synoptic water level round, discharge rates in the Neponset River averaged 38 cubic feet per second (cfs), which is approximately 25 cfs above long-term median

values for that date (13 cfs). During the December 1, 2021 water level round, discharge rates in the Neponset River averaged 45 cfs, which is approximately equal to the long-term median values for that date (45 cfs). The discharge rate for the September round was above the long-term trend. The relative flow rate for the September synoptic gauging event corresponds to above-average precipitation leading up to the gauging event; 6.14 inches of rain were recorded between September 1 and September 20, 2021 where the long-term trend for the same period is 3.40 inches. The discharge rate for the December round was similar to the long-term trend. Although there was below-average precipitation leading up to the gauging event on December 1, 2021, above-average precipitation was recorded in July, September, late October, and November 2021.

The long-term median data illustrated in **Figure 8** suggest that typical river flow is at the annual high in late March to early April, then steadily declines through mid-July when flows reach the annual low. The low-water conditions persist through the summer months, until late September when river elevations begin to slowly increase. This increasing trend continues through the fall and winter months, until the maximum flow rate is again reached in late March. Quarterly sampling is conducted during periods of high flow in March, moderate to low flow in June, low flow in September, and moderate flow conditions in December. In general, during the current reporting period, the shallow water table measurements in September were similar in elevation compared to December. Typically, the September shallow water table measurements would be lower in elevation compared to December. However, due to high precipitation recorded in July, September, late October, and November 2021, the shallow water table measurements were similar between the two rounds.

Water table contours generated from the September 20, 2021 gauging results show shallow groundwater flow in an easterly direction with pronounced mounding of the water table in the area between the Neponset River and monitoring wells MW-706S, MW-365, and MW-712S (**Figure 6a**). There were very minor weather events during the preceding week with rain on September 15th that totaled 0.06 inches of precipitation, rain on September 16th that totaled 0.30 inches of precipitation, rain on September 17th that totaled 0.01 inches of precipitation, and rain on September 19th that totaled 0.34 inches of precipitation. However, it should be noted that there was a significant weather event on September 2nd that totaled 4.23 inches of precipitation. The December 2021 results show shallow groundwater flow in an easterly direction (**Figure 6b**), with pronounced mounding of the water table in the area between MW-706S and MW-365. There was one very minor weather event that occurred during the preceding week with rain on November 27th that totaled 0.04 inches of precipitation. In general, hydraulic gradients are steepest near Ruckaduck Pond to the west and become flatter near the Neponset River to the east. The water table is flattest in the southeast portion of the site, which may reflect varying degrees of infiltration through surficial fill due to heterogeneities in fill material and compaction, or greater infiltration in low areas where runoff ponds. The steep hydraulic gradients observed in the western portion of the site are caused by artificial retention of surface water in Ruckaduck Pond, which provides a source for groundwater recharge.

Lateral hydraulic gradients were calculated for the area between MW-711 and MW-709, which is near the center of the cVOC plume where it discharges to the river. Lateral gradients for shallow

wells across the top of the aquifer were 0.004 ft./ft. in December. Lateral gradients for deep wells across the bottom of the aquifer were 0.003 ft./ft. in December.

The lateral seepage velocity was calculated for the bottom of the aquifer at MW-711D and MW-709D, located near the center of the cVOC plume. This location is where most contaminants are present, both horizontally and vertically. The bottom of the aquifer in this area consists of silty sand and gravel, which is comparable to the aquifer material at DD-MW-201 where hydraulic conductivity was measured during the DDA Phase II investigations (Weston 2007a). Based on the above lateral gradient, and the measured hydraulic conductivity of 13 ft./day for silty sand & gravel at DD-MW-201, and assuming an effective porosity of 0.23, the lateral seepage velocity at the bottom of the aquifer in this area is calculated to be 0.17 ft./day in December.

Where shallow and deep well couplets are present, the difference in piezometric surfaces have been historically calculated to determine the vertical component of flow between the shallow and deep aquifers. After several years of monitoring, it became evident that the vertical flow directions can be variable between monitoring rounds. These variations are likely attributable to the amount, and timing of precipitation leading up to the synoptic gauging events. In general, the following vertical flow directions are typically observed:

- ▶ Neutral flow in the northern part of the site where the aquifer is thinner;
- ▶ Upward flow at MW-709 and MW-710 where the cVOC plume discharges to the River;
- ▶ Slightly downward flow at LR-MW-122 at the downgradient edge of the arsenic plume;
- ▶ Slightly downward flow in the central area, except at MW-714 and MW-713; and
- ▶ Variable vertical flow in the central portion of the site where infiltration of precipitation affects hydrogeologic conditions.

4.2 Contaminant Extent

This section of the RMR documents the latest findings regarding the extent of groundwater contamination. Sampling logs are provided in **Appendix C**, and complete laboratory results (including detection limits for compounds not detected) are provided in **Appendix D**. Summaries of detections are provided for COCs in **Table 3**. Table 3 includes recent historic results for comparison to the latest results; results from the current reporting period are shown in black font, while older results are shown in grey. Horizontal extents are illustrated in **Figure 9**, and vertical extents are shown in **Figures 10 to 13**.

Evaluations of contaminant concentration trends over time are discussed in Section 4.3. The concentrations listed parenthetically in the following text are for the most recent (December 2021) sampling round unless otherwise specified.



4.2.1 Horizontal Extent of Contamination

Wells sampled during the current reporting period included wells sampled on a quarterly (September and December) and semi-annual basis (December). Wells sampled during the previous reporting period included those sampled on a quarterly basis (March and June), on a semi-annual basis (June), and on an annual basis (June). Sampling and analysis of chlorobenzenes, arsenic and cVOCs was conducted in June, September, and December from the wells shown on **Table 1**.

Chlorobenzene Results

Sampling for DCB and TCB was conducted in June from the wells shown on **Table 1**. Sampling for DCB and TCB was not conducted during the current reporting period (September and December). DCB and TCB detections for June 2021 are summarized below relative to their respective MMCLs of 5 ppb and 70 ppb.

- ▶ MW-702B: In June, DCB was below the 5 ppb MMCL (1 ppb) and TCB was below the 70 ppb MMCL (14 ppb).
- ▶ NP-MW-601: In June, DCB was non-detect and TCB was below the 70 ppb MMCL (5.6 ppb).

The DCB plume is centered around well NP-MW-601 and MW-702B. The DCB plume boundary on **Figure 9** is illustrated as a dashed line to represent chlorobenzene concentrations below the MMCL at NP-MW-601 and MW-702B in June 2021. Temporal trends of chlorobenzene concentrations are discussed in detail in Section 4.3.

Arsenic Results

Sampling and analysis of arsenic was conducted in September and December from the wells shown on **Table 1**. Arsenic detections are summarized below relative to the 10 ppb MMCL.

- ▶ LR-MW-122: Sampled in December only. Arsenic was above the 10 ppb MMCL (15 ppb).
- ▶ MW-706S: Arsenic was above the MMCL in the primary sample (17.2 ppb) and in the field duplicate sample (18.2 ppb) during the September sampling round. In December, arsenic was below the MMCL in the primary sample (4.5 ppb) and in the field duplicate sample (4.7 ppb).

The arsenic plume encompasses LR-MW-122, MB-MW-371, MW-703, and MW-706. The plume is illustrated as dashed and solid on **Figure 9** to show the concentrations above the MMCL at LR-MW-122 (solid line) and below the MMCL at MW-706S (dashed line) noted during the December 2021 sampling round. The line is dashed adjacent to MB-MW-371 and MW-703 as they were not sampled during the current reporting period, but were non-detect during the previous reporting period in June 2021.

Arsenic concentrations observed during the current reporting period were typical of recent trends. Temporal trends of arsenic concentrations are discussed in detail in Section 4.3.

cVOC Results

Sampling and analysis of cVOCs was conducted in September and December from the wells shown on **Table 1**. cVOC detections are summarized below relative to the 5 ppb MMCL for PCE and TCE, and the 2 ppb MMCL for VC. Unless noted, only results for the primary samples are discussed below; refer to **Table 3** for field duplicate results.

- ▶ MB-MW-374: Concentrations of PCE (17, 19 ppb) were above the MMCL in the September and December sampling rounds, respectively. TCE (4 ppb) was below the MMCL in the September sampling round. However, TCE (5.1 ppb) was above the MMCL in the December sampling round. VC was non-detect for both the September and December sampling rounds.
- ▶ MW-709S: The concentrations of PCE (46, 48 ppb), TCE (22, 52 ppb), and VC (4.5, 4.2 ppb) were above the MMCLs in the September and December sampling rounds, respectively.
- ▶ MW-713D: Concentrations of PCE (16 ppb) and TCE (5.7 ppb) were above the MMCL during the December sampling round. VC was non-detect.
- ▶ MW-714S: PCE was non-detect during the September sampling round. The concentration of PCE (1.2 ppb) in December was detected, but below the MMCL. TCE was non-detect during the September sampling round. The concentration of TCE (8.3 ppb) was above the MMCL in December. Concentrations of VC (1.5, 1.2 ppb) were below the MMCL in the September and December sampling rounds, respectively.

Samples collected from MB-MW-362, MW-704S, and MW-710M had one or more compounds detected; however, there were no MMCL exceedances.

There are two cVOC plumes as depicted on **Figure 9**; a smaller plume centered on MW-707, and a larger plume centered around MW-704, MW-709, MW-710, MW-713, MW-714, and MW-374. The smaller cVOC plume is surrounded by a dashed boundary line to represent the PCE below the MMCL at MW-707. This well has remained below the MMCL since December 2015. The larger plume is surrounded by a boundary line that is dashed where cVOCs are present below the MMCL and solid where cVOCs exceed the MMCL.

Concentrations of cVOCs observed during the current reporting period were consistent with long-term trends. Temporal trends of cVOCs concentrations are discussed in detail in Section 4.3.

4.2.2 Vertical Extent of Contamination

DCB results suggest that chlorobenzene contamination is historically present within the relatively thin (12-foot thick) overburden sandy aquifer at monitoring well NP-MW-601, and shallow bedrock well MW-702B. The DCB concentrations at NP-MW-601 and MW-702B have been below

the MMCL since 2016. Therefore, the vertical extent of chlorobenzenes above the MMCL during the current reporting period is not shown on **Figure 10**.

The vertical extents of PCE and other cVOCs are indicated in **Figures 11 to 13**. The extent of contamination is drawn to include wells where samples had cVOC concentrations exceeding the MMCLs from the most recent sampling round in December 2021. On **Figure 11**, the estimated area of cVOCs lies within the deep overburden aquifer at MB-MW-374 and in the shallow overburden aquifer at MW-714, due to the exceedances during the December 2021 sampling round. The estimated area of cVOCs depicted on **Figures 12 and 13** was unchanged compared to the previous RMR, and is contained within the shallow overburden aquifer at MW-709, and the deep overburden aquifer at MW-713. Note the horizontal scales differ on these cross-sections but the vertical scales are the same. Compared to the depiction in the FIR, the vertical extent is similar in terms of most of the contamination above MMCLs occurring 10 or more feet below the water table within the site and surfacing along the eastern edge of the river.

The water table elevations in **Figures 10 to 13** have been updated to represent conditions observed during the latest (December 2021) synoptic gauging round.

4.3 Concentrations Over Time

Plots of contaminant concentrations over time at monitoring wells with current or historic MMCL exceedances are presented in **Figures 14 and 15** for DCB/TCB; **Figures 16 and 17** for arsenic; and **Figures 18 to 28** for cVOCs. Results are discussed by contaminant type in the following paragraphs.

DCB/TCB measurements are available since June 2006 at NP-MW-601 (**Figure 14**). In general concentrations of DCB and TCB at this well have fluctuated seasonally with a consistent declining trend observed since 2012. At NP-MW-601 concentrations of TCB and DCB have not exceeded their respective MMCLs since December 2015 and have remained below their remedial goals since March 2018.

Concentrations of DCB/TCB have been monitored at MW-702B since June 2012 (**Figure 15**). Over time, chlorobenzenes have shown an overall decrease in concentration, from a high of 72 ppb for TCB in February 2013 to a range of 27 to 53 ppb from September 2017 to June 2018, and 2.2 to 7.0 ppb for DCB from 2012 to June 2018. Concentrations remain stable below the MMCL, with the last exceedance for TCB occurring in September 2013 and the last exceedance for DCB occurring in December 2014. DCB and TCB are currently below their respective remedial goals.

Arsenic results are available since June 2006 at LR-MW-122 (**Figure 16**). Generally, arsenic concentrations at LR-MW-122 (sampled semi-annually) show seasonal fluctuations with lower concentrations observed during the winter months and higher concentrations observed during the summer months. The maximum arsenic concentration at this well (75 ppb) was observed in July 2010. Immediately following the July 2010 round, concentrations dropped to near the MMCL. Over the past ten years, arsenic has fluctuated above and below the MMCL with concentrations

ranging from 0.9 ppb to 45.4 ppb. The arsenic concentration at this location was above the MMCL in December 2021 (15 ppb).

Arsenic results are available since June 2012 at MW-706S, and temporally illustrated on **Figure 17**. During the first several years of monitoring, arsenic was typically detected between 2.4 ppb and 21.2 with occasional elevated concentrations in the 40.8 to 86.6 ppb range. During the December 2015 sampling round, arsenic concentrations at MW-706S significantly increased to 165.7 ppb. Although arsenic results decreased in September 2016 to 18.3 ppb, concentrations spiked to an all-time high of 182 ppb during the December 2016 round. During the four subsequent rounds, concentrations fluctuated from a low of 8.1 ppb (below the MMCL) to 156.2. Since March 2018, arsenic concentrations have been consistent with concentrations observed during the first several years of monitoring. During the most recent sampling rounds, arsenic was detected at 11.4 ppb in March 2021 and 96 ppb in June 2021. In general, concentrations fluctuate seasonally with highest concentrations in the winter, next highest concentrations in the spring and fall, and lowest concentrations in the summer. Since 2017, arsenic has showed an overall declining trend; although the seasonal trend observed previously was opposite during the winter 2020 and spring 2021 events. During summer and winter 2021 events, arsenic results returned to a more overall declining trend.

cVOC measurements are available since June 2007 for LR-MW-129, since July 2008 for MB-MW-362, and since April 2009 for MB-MW-374. Trends of individual cVOC analytes (PCE, TCE, and VC) were generally consistent at each well, and are plotted on **Figures 18 to 20**.

- ▶ Concentrations of cVOCs in LR-MW-129 declined rapidly over the initial year (2007-2008); and all analytes have been below the laboratory detection limit for the past several years. This monitoring well is no longer included in the sampling plan.
- ▶ Concentrations at MB-MW-362 show a sharp increase between late 2009 and mid-2010, and then have declined steadily each year. Prior to the December 2017 sampling round, all cVOCs were non-detect for the previous four sampling rounds. In December 2017, TCE was detected above the MMCL (6.1 ppb). In June 2017, vinyl chloride was non-detect; however, TCE (11 ppb) and PCE (6.3 ppb) were detected at concentrations above MMCLs. The TCE and PCE concentrations in September 2018 were also above the MMCLs with VC not detected. The December 2019 sampling had no exceedances of the MMCLs with detections of TCE at 4.2 ppb and PCE 2.6 ppb and VC was not detected. The October 2020 and December 2020 sampling rounds had no exceedances of the MMCLs with detections of TCE (3.1, 4.3 ppb) and PCE (1.2, 1.6 ppb), respectively. VC was not detected in October and December 2020. PCE and VC were non-detect during the June 2021 sampling round. TCE was detected at 3.5 ppb, however, June 2021 had no exceedances of the MMCLs. During the December 2021 sampling round, PCE and VC were non-detect. TCE was detected at 1.3 ppb, but below the MMCL. PCE, TCE, and VC were below the remedial goal during the December 2021 sampling round.
- ▶ Concentrations at MB-MW-374 were near MMCL criteria until mid-2010, then generally increased between mid-2010 and December 2012. Since 2012, detected

concentrations of PCE have fluctuated between 2.4 ppb and 72 ppb, TCE between 1.3 ppb and 36 ppb, and VC between non-detect and 12 ppb. Through 2017, trends show decreasing concentrations of parent cVOC compounds, and increasing concentrations of the daughter products, indicating reductive dechlorination is occurring. Since 2017, PCE, TCE, and VC have been generally stable with seasonally varying concentrations.

Concentrations of cVOCs at the newer wells with MMCL exceedances generally showed the following trends over approximately seven years of measurements to date, as indicated in **Figures 21 to 28**:

- ▶ Slightly decreasing with concentrations below MMCL criteria at MW-704S. PCE, the only contaminant with historic concentrations above the MMCL, fell below the MMCL for the first time during the June 2014 monitoring round, and has remained below the MMCL during all subsequent rounds, including during the current monitoring period. VC has not been detected in sampling conducted since June 2012. cVOC Concentrations have remained at, or below the remedial goals since December 2016.
- ▶ Fluctuating concentrations above MMCL criteria at MW-709S. Concentrations of PCE, TCE, and VC increased over the first year and a half of monitoring, and an overall declining trend has been observed since 2013.
- ▶ Flat with concentrations near MMCL criteria at MW-709D. The last MMCL exceedance at this well occurred in June 2015, and concentrations have remained below the remedial goal since June 2017 and have been non-detect since 2019.
- ▶ VC has been non-detect for six consecutive sampling rounds at MW-710S. PCE and TCE concentrations continue to decline and have remained below the remedial goals since June 2018, with non-detect concentrations in 2020 and 2021.
- ▶ Overall decreasing concentrations for PCE, TCE, and VC, with recent concentrations below the MMCL criteria at MW-710M. PCE and TCE were below the MMCL, and VC was non-detect during the last sampling round in December 2021. (VC has been non-detect since December 2014). cVOCs have remained at or below the remedial goal during the last two sampling rounds in June and December 2021.
- ▶ Steadily decreasing trends since 2013 at MW-711D. All cVOCs have remained below their respective MMCLs since June 2015 and have achieved their remedial goals.
- ▶ Increasing trends of PCE and TCE from 2015 to 2017 at MW-713D were followed by flat, then decreasing trends over the past several years. PCE and TCE concentrations remain above MMCL criteria. In general, VC concentrations have shown an increasing trend as PCE and TCE concentrations decreased, suggesting reductive dechlorination may be occurring. However, VC was non-detect during the December 2021 sampling round.
- ▶ Sharply fluctuating concentrations of PCE and TCE at MW-714S. Higher concentrations of PCE and TCE have typically been observed in March, with lower concentrations in June, September, and December. In 2012 and 2013 PCE concentrations exceeded TCE concentrations; however, in 2014 the PCE and TCE peaks coincided. Since 2015 TCE



concentrations have exceeded PCE concentrations, suggesting reductive dechlorination may be occurring. VC continues to fluctuate seasonally with the highest concentrations observed in December, and the lowest in September, with mid-range concentrations observed in March and June.

4.4 Estimates of Mass Loss & Plume Stability

MNA is expected to reduce concentrations of contaminants at this site principally by the processes of desorption, dilution, and biodegradation. These processes are expected to be interrelated, for example increased precipitation may speed both desorption of contaminants from the aquifer matrix to groundwater, and dilution due to greater groundwater discharge to the river and increased surface water flow. Note that an increase in the rate of desorption of contaminants may increase groundwater concentrations in some areas in the short term, as greater mass is being removed from the solid aquifer matrix. Fluctuations in desorption may result from changes in water table elevation or gradient, including preferential flow paths along infrastructure or geologic anomalies below the water table.

Evaluation of contaminant mass loss and plume stability considers the above evaluations of COC extent in Section 4.2 and changes in concentrations over time discussed in Section 4.3. These evaluations also consider the groundwater flow conditions described in Section 4.1 and are presented below by analyte type. Any changes to the CSM and MNA program based on this evaluation are indicated below and are summarized in Section 6.

The DCB/TCB plume at NP-MW-601 and MW-702B shows evidence of mass loss based on the overall decreasing trends observed since 2012 and the presence of daughter products. DCB is an anaerobic degradation intermediate of TCB, and the maxima for both compounds have coincided in time. Dissolved Oxygen (DO) and Oxidation Reduction Potential (ORP) results have historically been low at these two wells, indicating anaerobic conditions. Concentrations of parent and daughter COCs are decreasing, suggesting dilution and degradation processes are continuing to reduce the overall mass of contaminants at these locations. Plume shape appears to be stable or contracting and is oriented around two wells about 60 feet apart, in line with groundwater flow. A downward trend is apparent for both DCB and TCB at MW-702B and NP-MW-601, and TCB and DCB have achieved background at both locations. It is expected that TCB and DCB will remain below background on a consistent basis during future monitoring rounds.

The arsenic plume is centered on two wells, upgradient well MW-706S and downgradient well LR-MW-122, where concentrations have historically been above the MMCL. Groundwater data used to evaluate the arsenic plume are available beginning in 2006 at LR-MW-122, and 2012 at MW-706S. Trends at the two wells show seasonal fluctuations, with concentrations ranging from background to 80 ppb and concentrations below background prior to 2015. Several concentrations spikes (up to 182 ppb) were observed in the fall and winter months at MW-706S between 2015 and 2017, with lower concentrations observed during the spring and summer months. Since 2018, arsenic concentrations at MW-706S have returned to more typical concentrations and are similar to pre-2015 concentrations. Since the initial concentration spike in

2015, concentrations have shown an overall decreasing trend. LR-MW-122, which is downgradient from MW-706S did not experience a similar concentration spike between 2015 and 2017. The maximum arsenic concentration at this well (75 ppb) was observed in July 2010. Concentrations during the subsequent sampling event were near the MMCL and have slowly increased over the past ten years. It is presumed that a small, localized source of arsenic is located in the unsaturated fill near MW-706S, and that precipitation infiltrating the fill periodically leaches arsenic to MW-706S, causing increases in groundwater concentrations. These spikes are typically followed by periods of low precipitation and therefore low concentrations. Downgradient, at LR-MW-122, seasonal variations are also observed, but are less pronounced compared to MW-706S, presumably because LR-MW-122 is further from the suspected source area. These patterns are expected to continue in the future until the source material is depleted. These recent trends have made it difficult to estimate mass loss within the arsenic plume. An evaluation was performed to understand the cause of the fluctuating concentrations, and to assess the remediation timeframe previously estimated. Results were presented in the 2018 Q3/Q4 RMR. Arsenic concentrations at wells surrounding MW-706S and LR-MW-122 have remained low to non-detect, indicating that the plume is stable.

The overall cVOC plume shape is unchanged from the previous reporting period. Several sections of the plume boundary are illustrated as dashed lines on **Figure 9** to represent current cVOC concentrations below the MMCL. In general, average concentrations of PCE and daughter products have declined at the lateral edges of the plume (i.e. MB-MW-362, LR-MW-129, and MW-711D). At interior location MW-709S a period of increasing concentrations was observed for several years; however, since 2014 overall trends for PCE and TCE show slightly declining concentrations with fluctuations attributed to seasonal variability. At monitoring well MB-MW-374, concentrations of daughter compounds (cis-1,2-DCE and VC) showed an increasing trend from 2013 to 2017 as the parent compound (PCE) has decreased. Since 2017, PCE, TCE, and VC have been declining. Overall, these patterns suggest that dilution and degradation are occurring. Trends at upgradient well MW-714S have shown significantly fluctuating concentrations since 2012; however since 2014 TCE concentrations generally exceed PCE concentrations indicating degradation is occurring.

Additional mass loss is expected as groundwater in the plume area discharges into surface waters of the Neponset River and associated wetlands. Although the site has been developed into a solar photovoltaic array farm, groundwater flow conditions remain similar to historical conditions.

5.0 Recommendations and CSM [310 CMR 40.0892(2)(D)]

5.1 Conceptual Site Model

Groundwater data collected during the current reporting period are generally consistent with historic conditions, and do not warrant changes to the Conceptual Site Model. The current CSM for the site is discussed below.

The estimated areas of groundwater contamination exceeding MMCLs are indicated in **Figures 9** through **13**. Arsenic contamination is observed at the water table, DCB contamination is near the bottom of a thin (12-foot thick) sand aquifer and in the underlying shallow bedrock, and PCE contamination is in the deepest part of the sand aquifer (up to 35 ft. bgs). The Neponset River appears to be a groundwater discharge area based on measured horizontal and vertical gradients around the Site. PCE has been identified at one monitoring location east of the river (MW-704S), at higher concentrations in the shallow compared to the deep screen and appears to be discharging to surface water in this area. The PCE concentrations have remained below the MMCL since June 2014 at this location and achieved background concentrations in December 2016 (and have remained consistent with background). Sediment and surface water concentrations in the river suggest that the contaminant discharge from groundwater to the river has not resulted in measurable concentrations of contaminants in the river. A CSA completed for the river where it borders the Site found a condition of No Significant Risk for river receptors (Weston 2007b).

The CSAs for the Site (AMEC 2011b, AMEC 2011c) found no current pathway between Site contaminants and the Town's water supply wells located 1.2 miles to the northeast (**Figure 1**), but the potential for movement in this direction warrants monitoring. The town supply wells draw water from surficial sands and gravel above bedrock, in the High Yield (>300 gpm) aquifer mapped by USGS northeast of the Site. The bedrock surface in the supply well area is 62 to 80 feet bgs, compared to 10 to 40 feet bgs at the Site; bedrock slopes downward to the northeast along the river valley. The potential for contaminant migration to the Town's supply wells would appear to be greatest for chlorinated organic compounds in the form of non-aqueous phase liquid (NAPL) which is denser than water; however, NAPL has not been observed at the Site. The chlorinated organic compounds encountered at the BMC site are present in the dissolved phase rather than as NAPL. In this dissolved form the density contrast has no effect on migration, compared to advection, dispersion, and other processes. Dissolved phase concentrations at the BMC site do not suggest the presence of NAPL.

No significant sources of groundwater contaminants are known to remain at the Site. Source control has occurred through soil excavation RAMs in the areas in and upgradient from arsenic and some cVOC groundwater contamination. The RAM around Building 6/6A, upgradient from arsenic detected in LR-MW-122, included the removal of soil having arsenic above background levels. Fluctuating concentrations at MW-706S suggest that a localized source of arsenic may exist in the unsaturated fill; although a soil investigation conducted in 2018 was unsuccessful in identifying a source of arsenic in the fill. The RAM around Building 7A/7C and LRA 2, upgradient from cVOCs detected in LR-MW-129, included removing soil with metals and oily contamination that was not known to contain cVOCs. Above-ground structures and below-ground tanks associated with former manufacturing operations have been removed as of early 2008, and it is possible that these structures included source materials. Removal of these structures and soil during RAM activities has eliminated known sources of VOCs to groundwater.

The installed well network and sampling procedures described in this report meet the design requirements identified in the FIR. Monitoring wells are focused along plume centerlines and

discharge areas. Monitoring locations include shallow, deep, and bedrock screens as appropriate to measure changes in nature and extent of contaminants.

5.2 OMM Revisions or Corrective Measures

MNA will be continued as a Permanent Solution if evaluations of site data demonstrate that natural attenuation is occurring at rates that will achieve drinking water standards and approach background levels in a reasonable timeframe. In the RAP, this timeframe was identified as up to 10 years for MNA. Determination of satisfactory reductions in concentrations considers multiple lines of evidence including temporal trends in individual wells, estimates of mass reduction, and distribution of contaminants and geochemical conditions. The data presented in this report indicate that natural attenuation is occurring in the areas of MMCL exceedances. No significant changes in the CSM are warranted at this time based on the latest measurements, and the estimated remediation timeframe of 10 years from 2012 is assumed to be the same for most of the monitoring wells. However, while MNA is effectively reducing the mass and concentrations overall, it is evident that some areas will not achieve the remedial goals by 2022.

The effectiveness of the OMM program is continually evaluated to ensure contaminants are not posing an unacceptable risk to receptors and that the Site is progressing towards a Permanent Solution. Many of the monitoring wells currently in the OMM program have years of MNA data showing consistently declining contaminant trends, some of which have achieved the stated remedial objectives (i.e. ½ the MMCL).

If MNA measurements suggest that some portions of the Site will not achieve a Permanent Solution, then supplemental MCP documents for design and construction of contingent remedies will be prepared. The following types of measurements will be considered as evidence of the need for contingent remedies:

- ▶ Contaminant concentrations exhibit an increasing trend not expected based on monitoring to date,
- ▶ Near-source wells exhibit large concentration increases indicative of a new or renewed release,
- ▶ Contaminants are identified in monitoring wells located outside the original plume boundary or other specified compliance boundary,
- ▶ Contaminant concentrations are not decreasing at a rate necessary to meet the remediation objectives,
- ▶ Changes in land and/or groundwater use could adversely affect the protectiveness of the MNA remedy, and
- ▶ Contaminants are identified in locations posing unacceptable risk to human or ecological receptors.



Multiple lines of evidence will be used to determine the need for contingent remedies, to account for the uncertainty associated with variability in subsurface conditions. The evaluations of these types of measurements will be conducted in accordance with United States Environmental Protection Agency (USEPA) guidance for performance monitoring of MNA (EPA 2004).

5.3 Remedy Operation Status

Remedy Operation Status was achieved in February 2013. Based on the data presented in this RMR and the conclusions summarized in Sections 6.1 and 6.2, MNA is still considered a viable approach to achieve a Permanent Solution, and therefore the Site meets the requirements for Remedy Operation Status.

6.0 References

- AMEC 2011a. Response Action Outcome Statement for RTN 4-3024222, Former Bird Machine Company Site. Prepared by AMEC Earth & Environmental Inc. for Baker Hughes Inc. Final, December 2011.
- AMEC 2011b. Phase II Comprehensive Site Assessment Report for RTN 4-3024222, Former Bird Machine Company Site. Prepared by AMEC Earth & Environmental Inc. for Baker Hughes Inc. Final, October 2011.
- AMEC 2011c. Phase II Comprehensive Site Assessment Addendum for RTN 4-3024222, Former Bird Machine Company Site. Prepared by AMEC Earth & Environmental Inc. for Baker Hughes Inc. Final, December 2011.
- AMEC 2011d. Phase III Remedial Action Plan for RTN 4-3024222, Former Bird Machine Company Site. Prepared by AMEC Earth & Environmental Inc. for Baker Hughes Inc. Final, December 2011.
- AMEC 2012. Phase IV Final Inspection Report, Former Bird Machine Company Site. Prepared by AMEC Earth & Environmental Inc. for Baker Hughes Inc. Final, August 2012.
- AMEC 2013a. Phase V Status and Remedial Monitoring Report, Prepared by AMEC Environment & Infrastructure, Inc. for Baker Hughes Inc. Final, August 2013.
- AMEC 2013b. Remedy Operation Status Opinion, Former Bird Machine Company Site. Prepared by AMEC Environment & Infrastructure, Inc. for Baker Hughes Inc. Final, February 13, 2013.
- EPA 2004. Pope, D. et al. Performance Monitoring of MNA Remedies for VOCs in Ground Water. National Risk Management Research Laboratory Office of Research and Development, US Environmental Protection Agency, Cincinnati OH. April 2004.



USGS 2020. Gauging Data at USGS Station 01105000, Neponset River at Norwood, MA. National Water Information System. <http://nwis.waterdata.usgs.gov>. January 2020.

Walpole 2007. Letter from John Spillane, Chairman, Town of Walpole Board of Water & Sewer Commissioners, to Dina Kuykendall, Baker Hughes a GE Company. October 25, 2007.

Weston 2005. Phase I Initial Site Investigation Report for RTN 3-0024222, Bird Machine Company Manufacturing Building Area. Prepared by Weston Solutions Inc. for Baker Process Inc. September 14, 2005.

Weston 2007a. Phase II Comprehensive Site Assessment for Demolition Debris Area, RTN 4-3024105. Prepared by Weston Solutions Inc. for Baker Process Inc. July 30, 2007.

Weston 2007b. Phase II Comprehensive Site Assessment for Release of Hydrocarbons to the Neponset River Site, RTN 4-3023575. Prepared by Weston Solutions Inc. for Baker Process Inc. January 25, 2007.



wood.

Figures



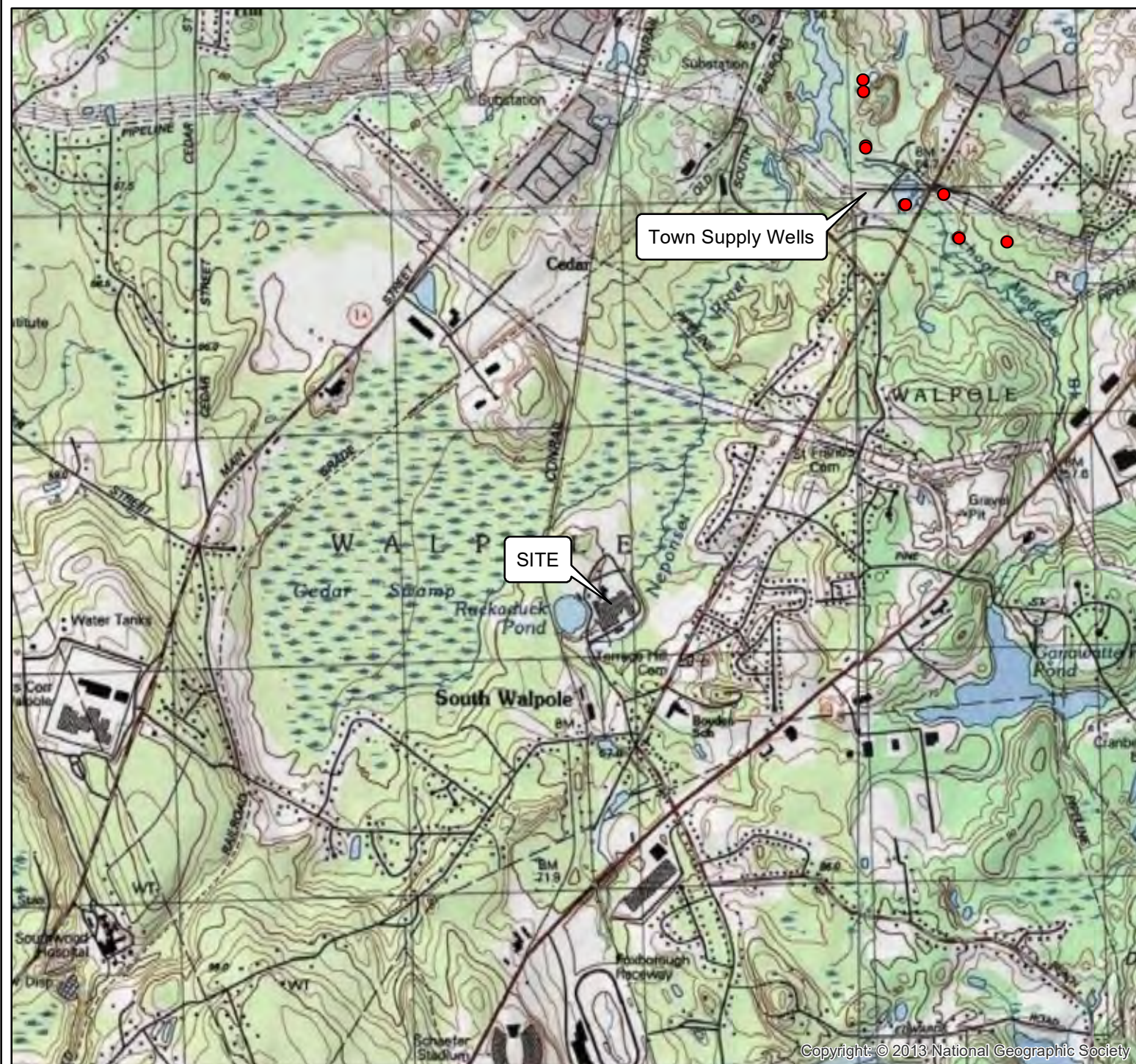


FIGURE 1
SITE LOCATION MAP
 Former Bird Machine Company
 100 Neponset Street
 Walpole, MA



Source: Topo quad provided by National Geographic TOPOI Series: 2008
 Town Supply Wells by MassGIS, 2012.



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 Wood Massachusetts, Inc.
 271 Mill Road
 Chelmsford, MA 01824
 (978) 692-9090

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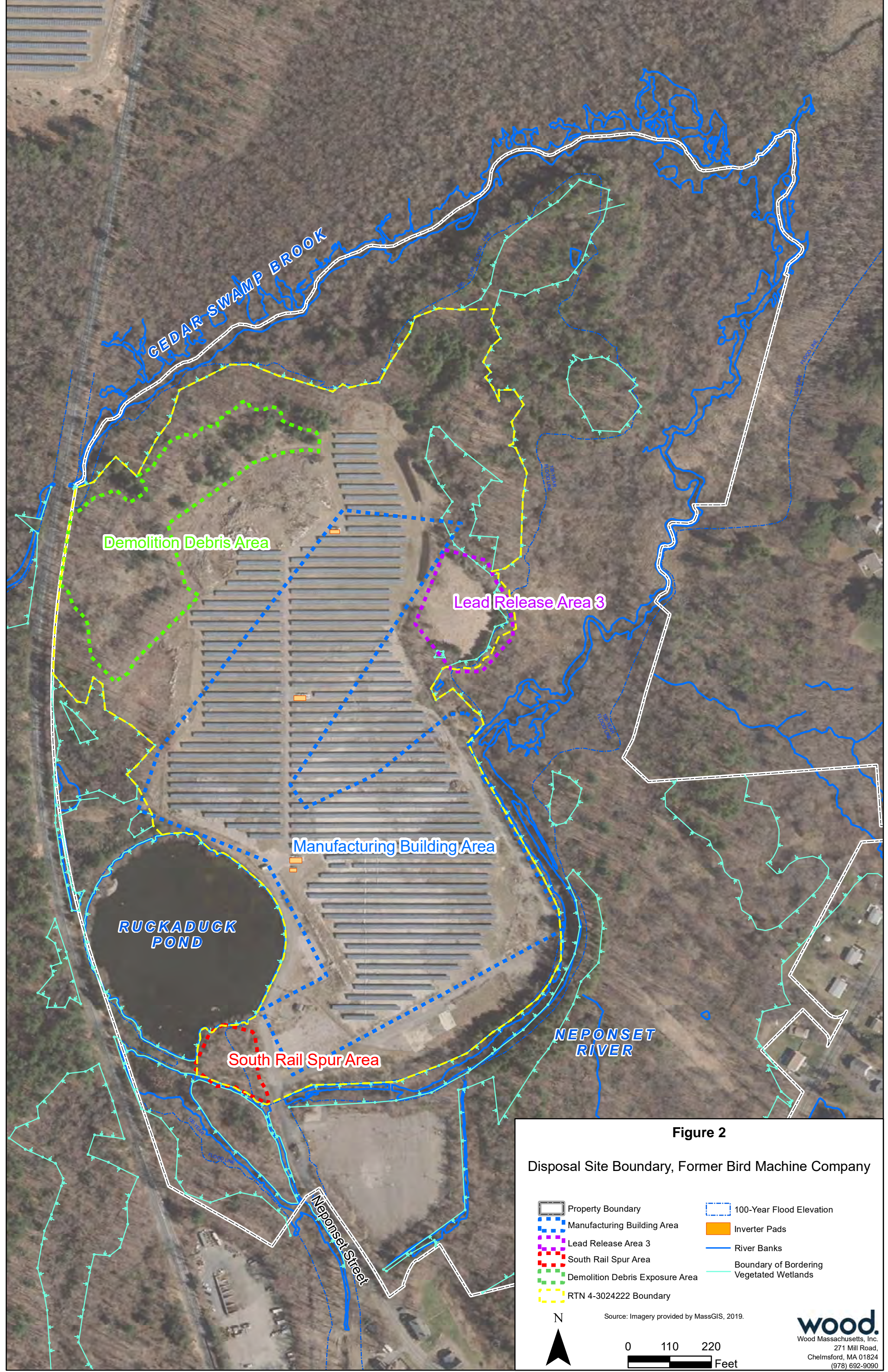


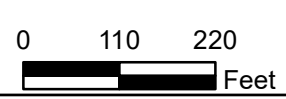
Figure 2

Disposal Site Boundary, Former Bird Machine Company

- | | |
|---------------------------------|--|
| Property Boundary | 100-Year Flood Elevation |
| Manufacturing Building Area | Inverter Pads |
| Lead Release Area 3 | River Banks |
| South Rail Spur Area | Boundary of Bordering Vegetated Wetlands |
| Demolition Debris Exposure Area | |
| RTN 4-3024222 Boundary | |



Source: Imagery provided by MassGIS, 2019.



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BUILDING #	BUILDING USE
1	OFFICE
3	BOILER HOUSE
4	LABORATORY
4A	DEVELOPMENT CENTER
5	STORES
6	MANUFACTURING OFFICE/LATHE
6A	BORING MILL
6B	BORING MILL
6C	BORING MILL
6D	MILLS & DRILLS INSPECTION
7	SHEET METAL
7A	FABRICATION
7B	WELDING
7C	WELDING
7D	WELDING
7E	MATERIAL STORAGE
8	ASSEMBLY
8A	ASSEMBLY
9	FIRE PUMP HOUSE
12	RESEARCH & DEVELOPMENT
15	HOUSE
19	GARAGE
20	MICREX BUILDING
22	INDUSTRIAL WASTE & RECLAMATION CENTER
21	GUARD SHACK
23	METAL WAREHOUSE



Figure 3
Current Site Features

- Catch Basin Location
- 100-Year Flood Elevation
- River Banks
- Storm Drain and Outfalls
- Property Boundary
- Historic Building Frost Walls Remain
- Historic Building Frost Walls and Floors Remain
- RAM Excavation Fill Area

Source: Imagery provided by MassGIS, 2019.

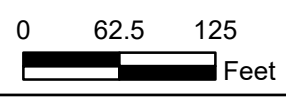
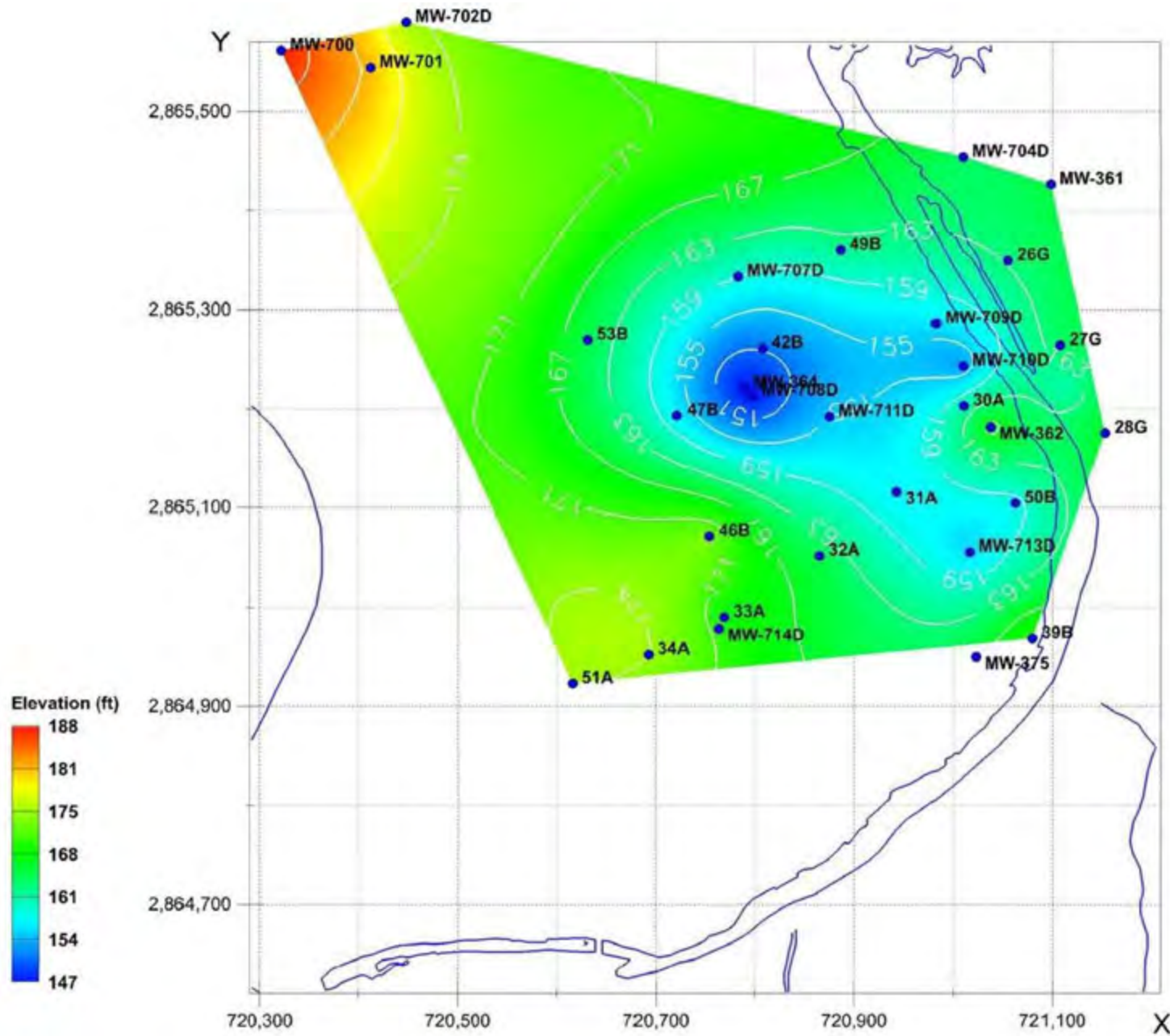


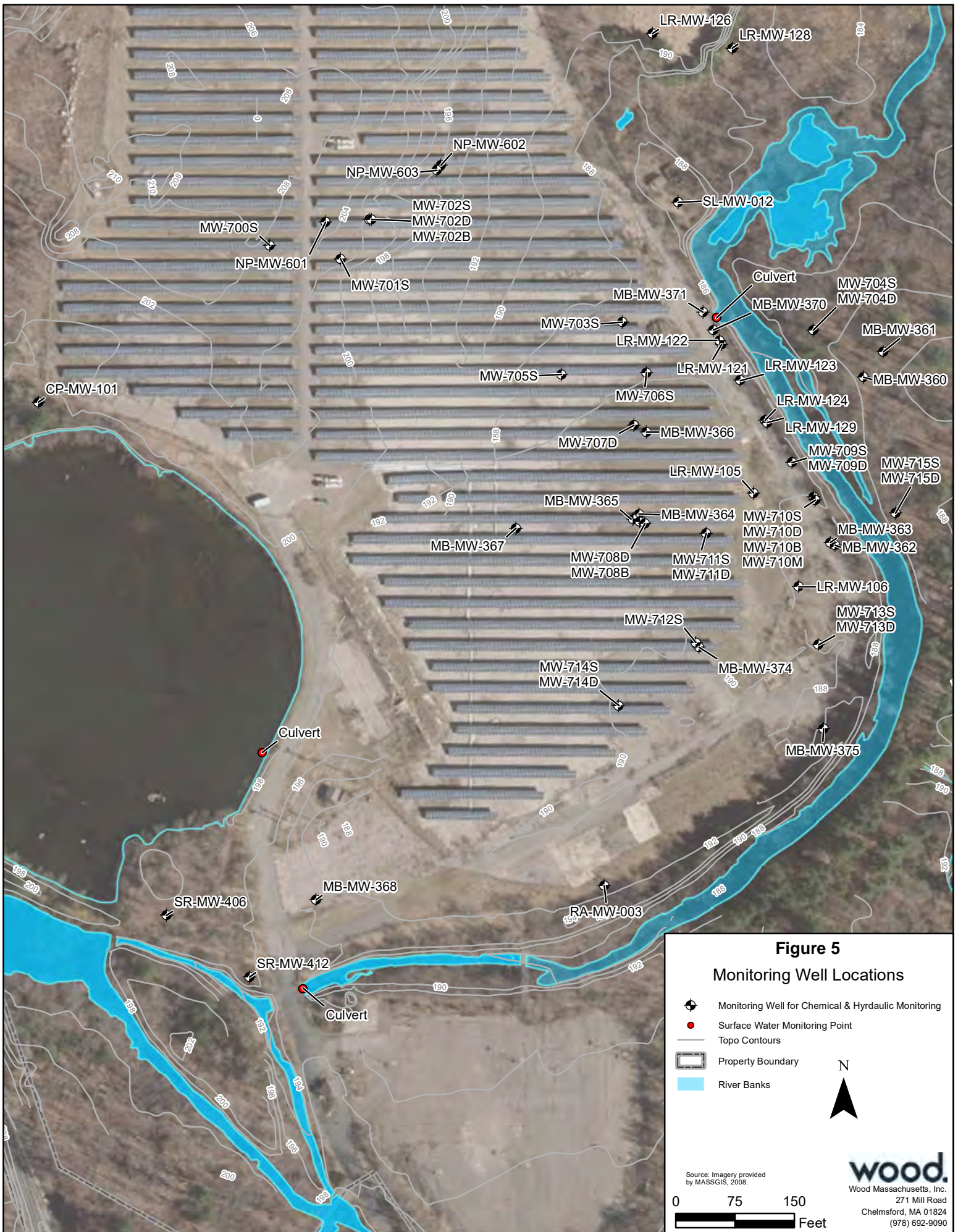
FIGURE 4
BEDROCK ELEVATIONS
FROM DRILLING
 Former Bird Machine
 Company
 100 Neponset Street
 Walpole, MA



Source: MassGIS, 2001.

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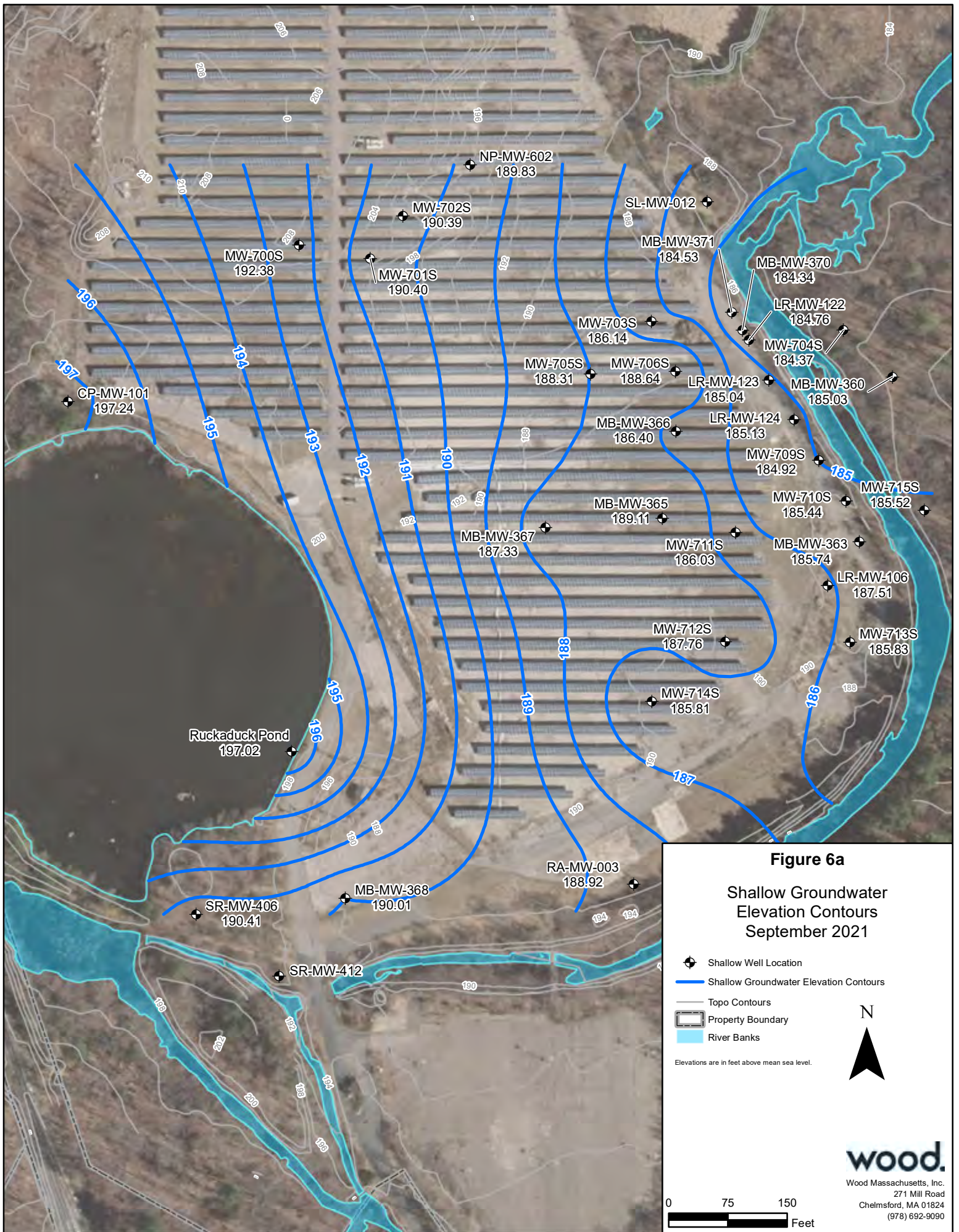


Figure 6a

**Shallow Groundwater
Elevation Contours
September 2021**

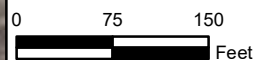
- ◆ Shallow Well Location
- Shallow Groundwater Elevation Contours
- Topo Contours
- ▭ Property Boundary
- ▭ River Banks

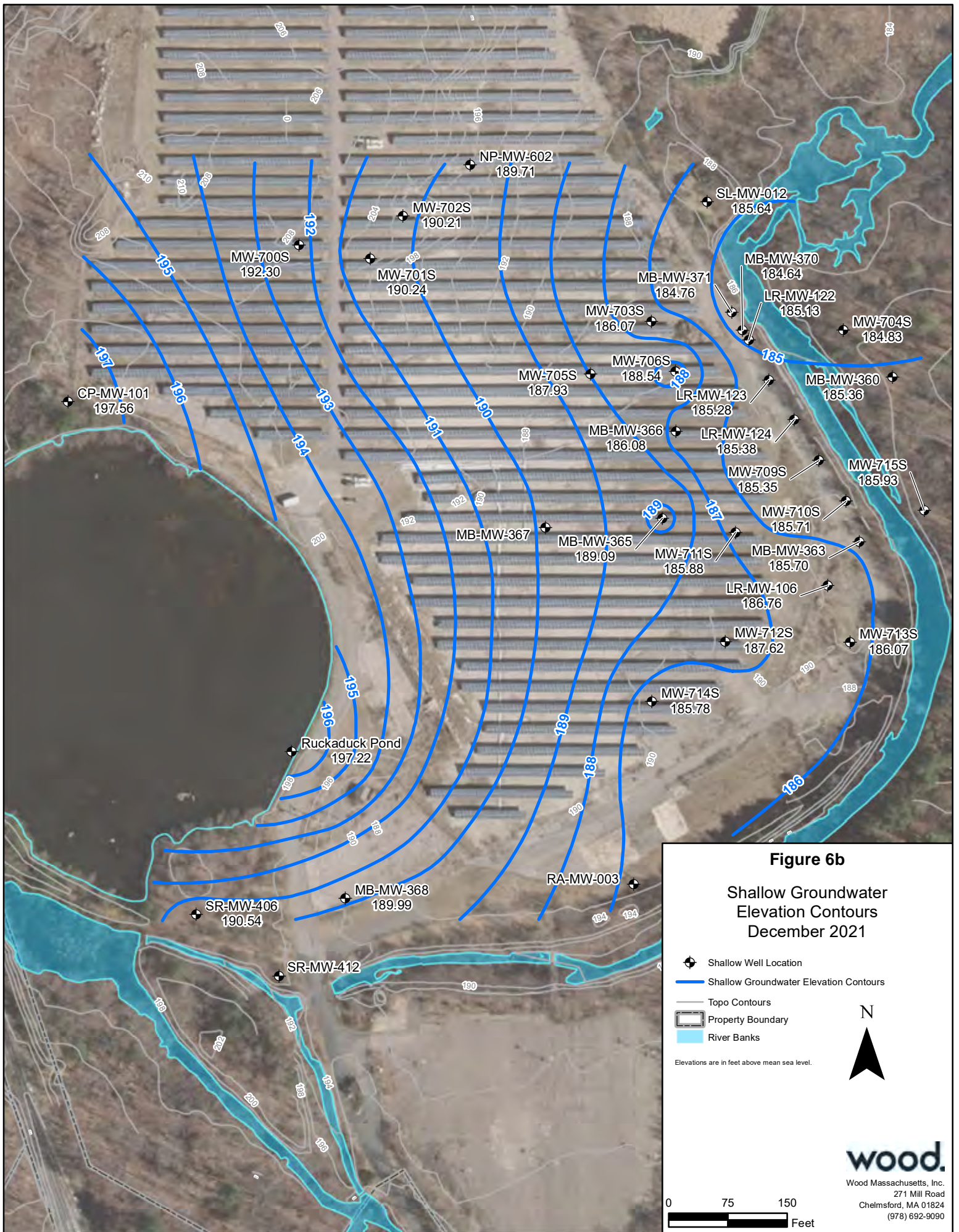
Elevations are in feet above mean sea level.

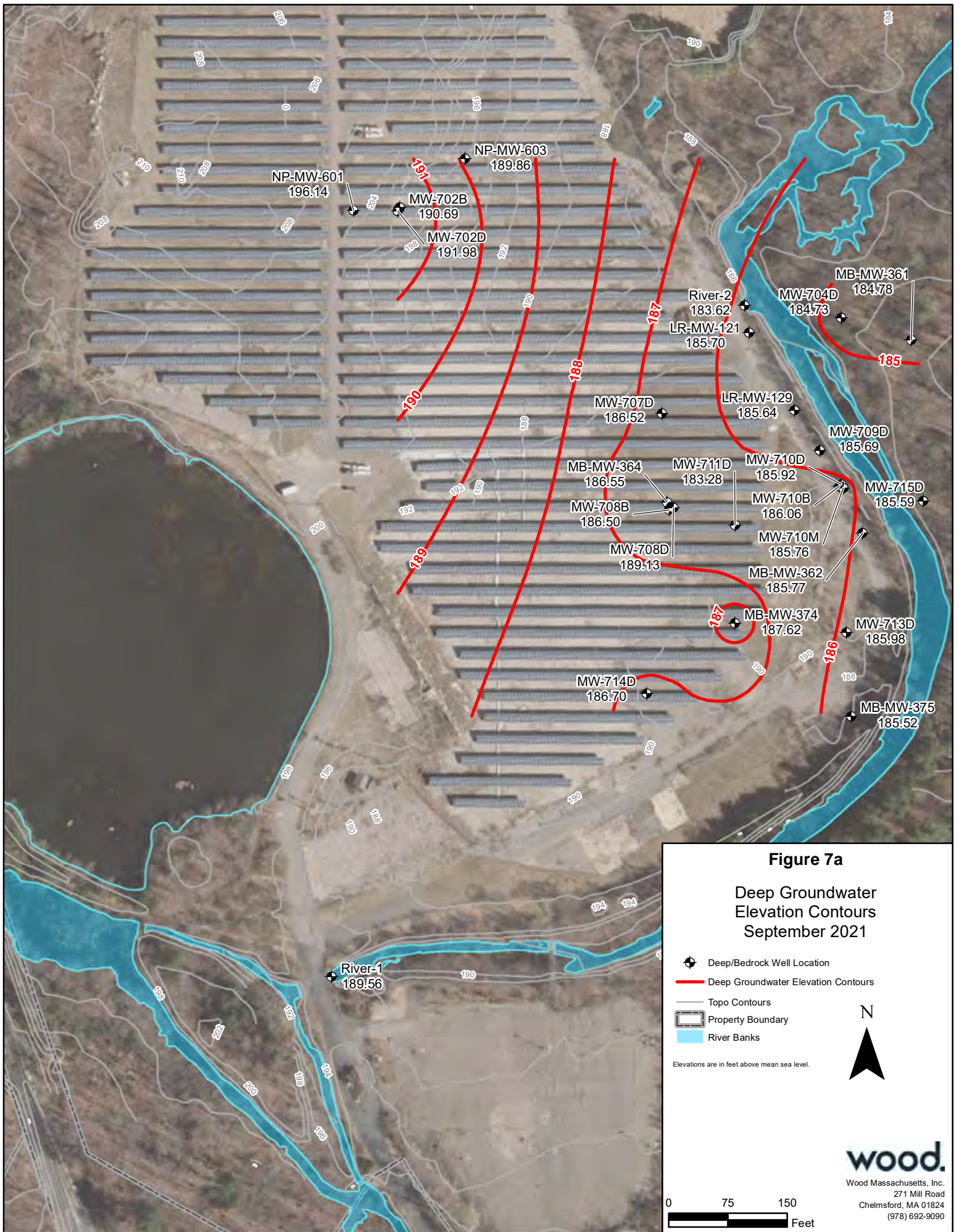


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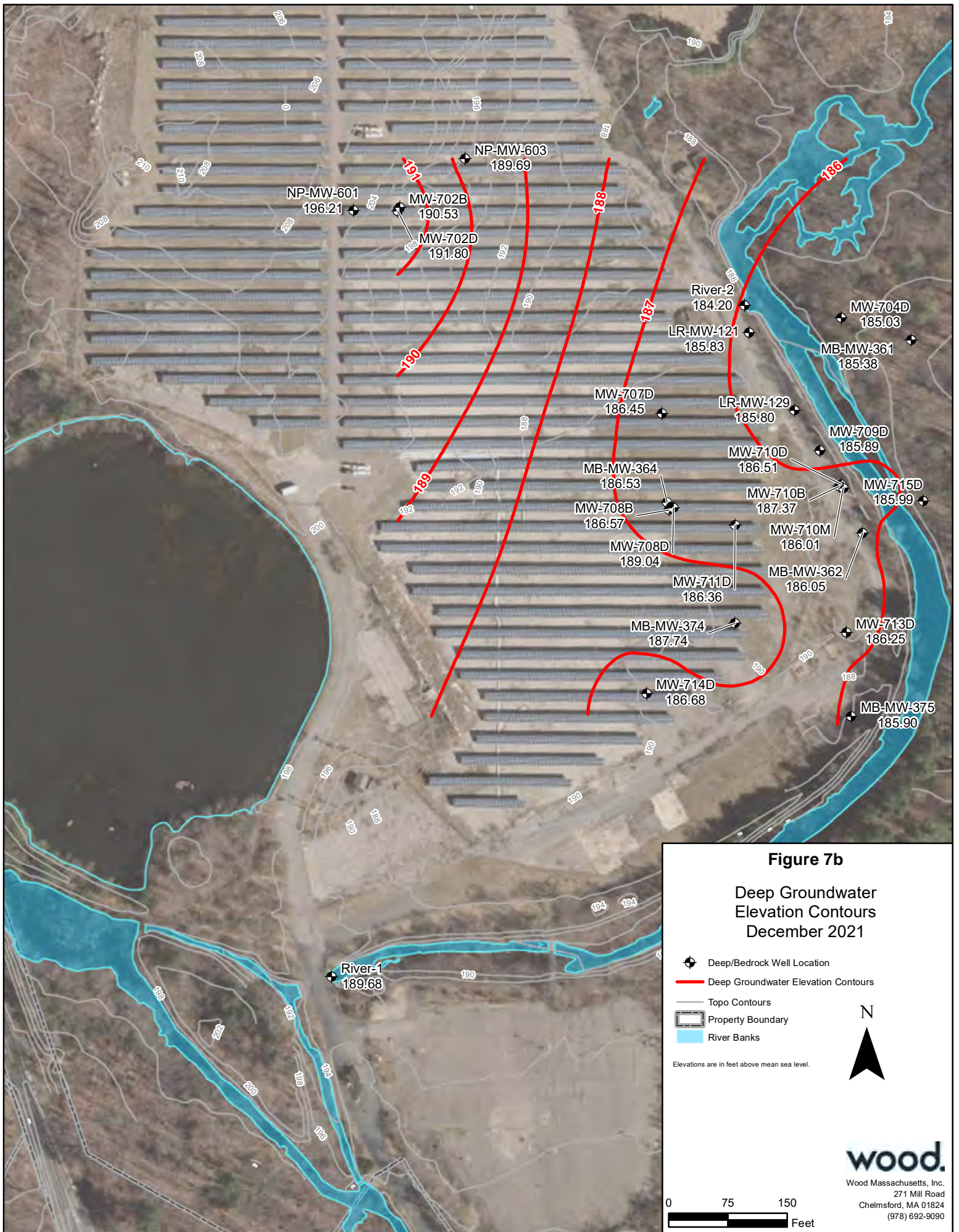
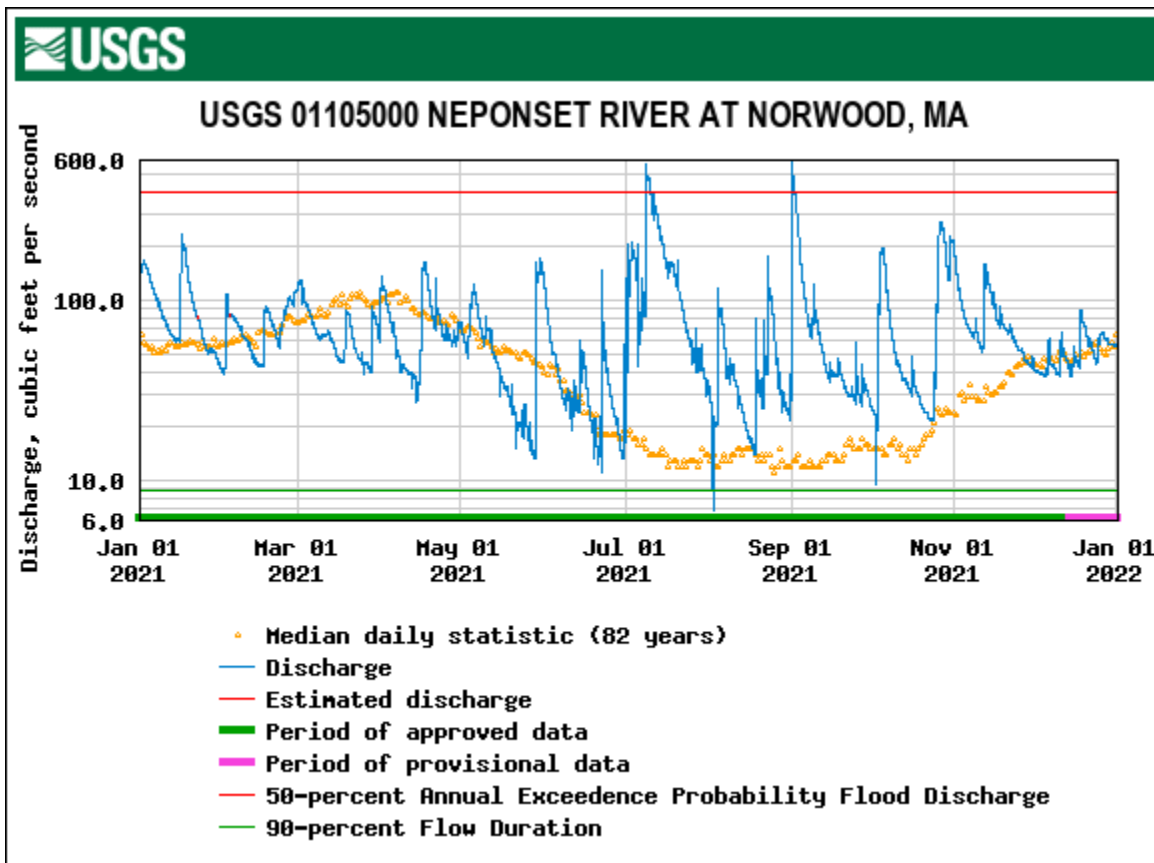
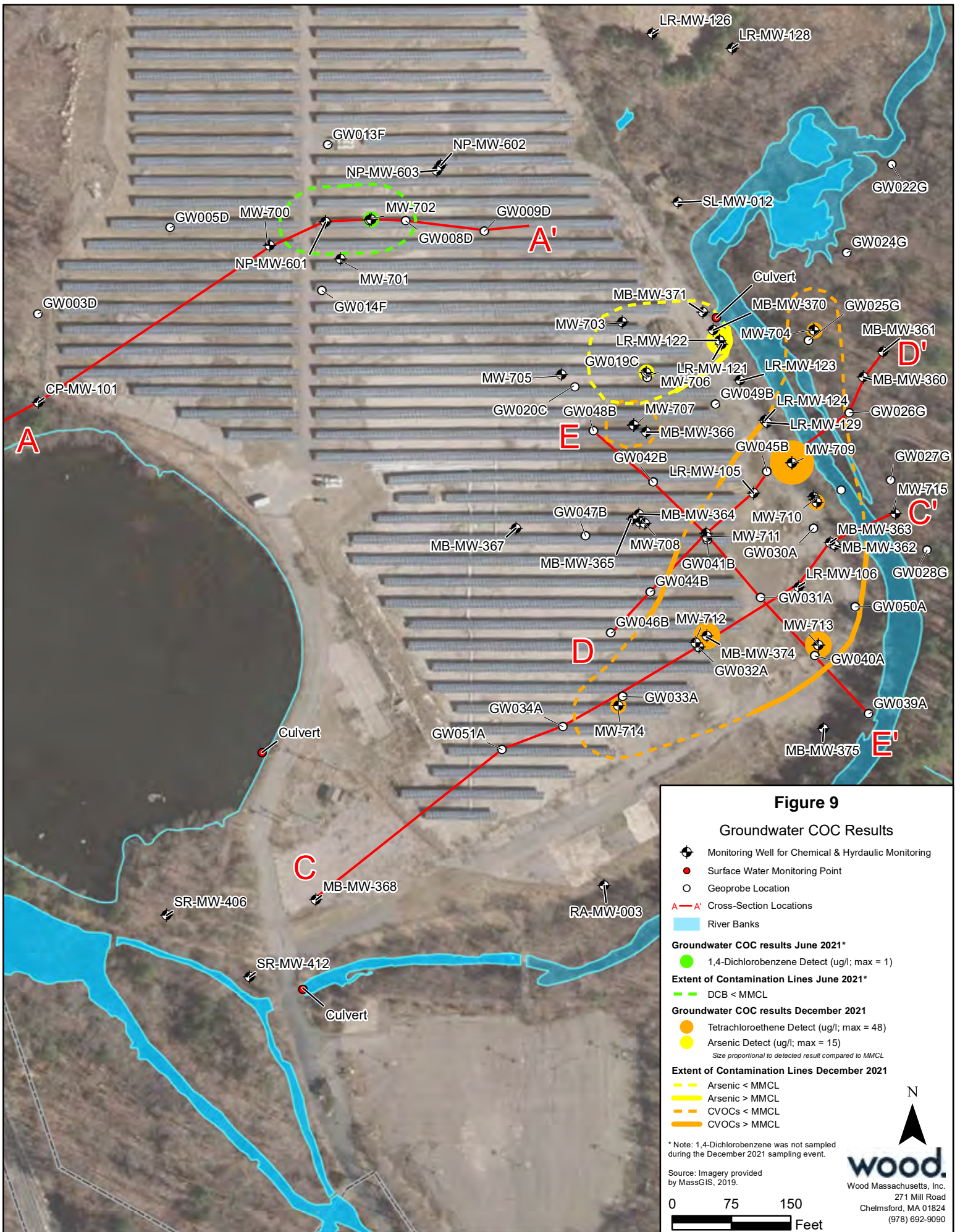


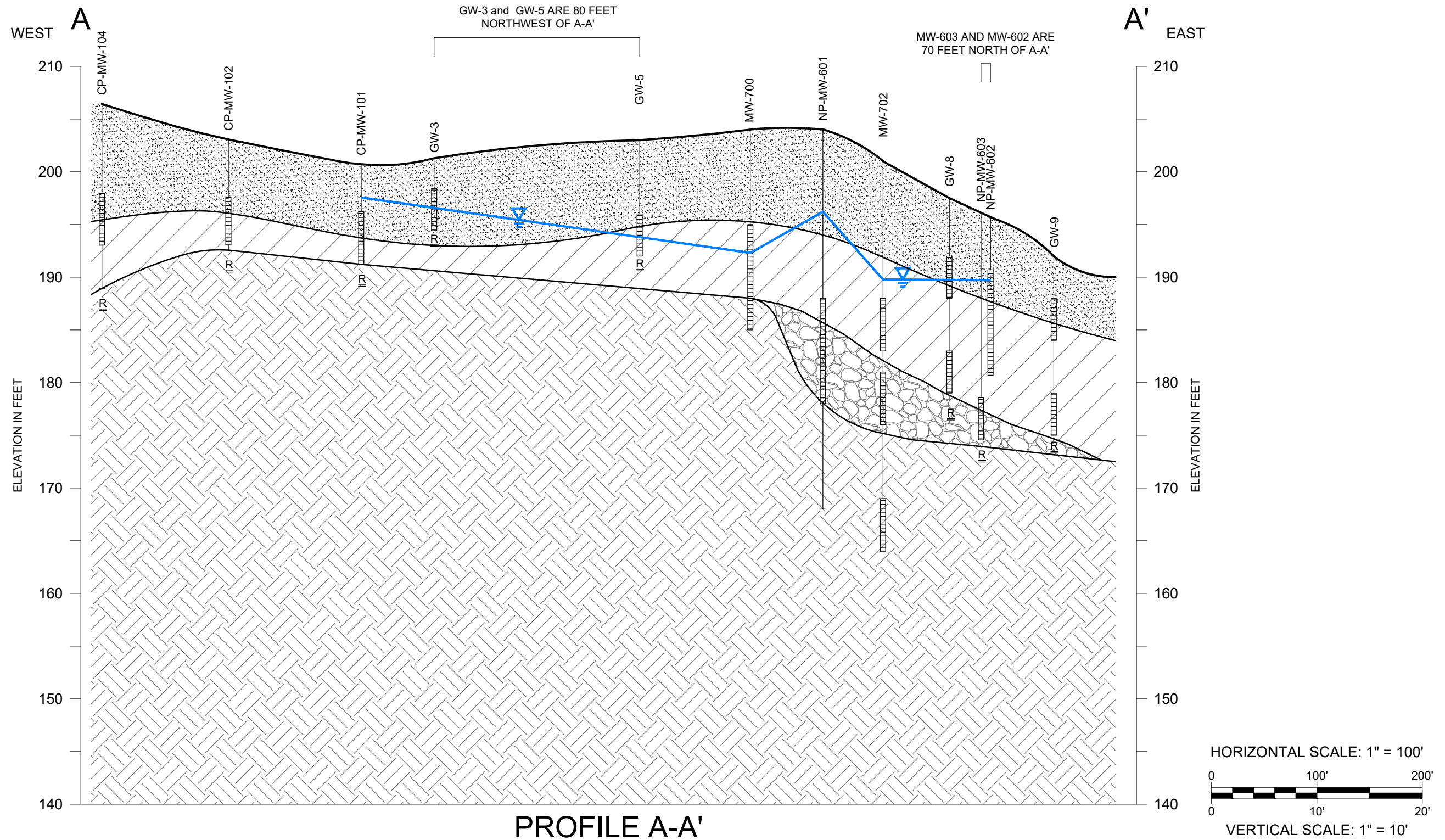
Figure 8. USGS Hydrograph of the Neponset River





2021 Daily Discharge, January – December


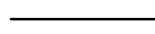







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-  SAND
-  SILTY SAND
-  SILTY SAND & GRAVEL
-  BEDROCK

- GW-3** TEMPORARY GROUNDWATER MONITORING POINT
- MB-MW-125** MONITORING WELL LOCATION
-  DECEMBER 2021 GROUNDWATER LEVEL
-  SOIL HORIZON TRANSITION
-  GROUND SURFACE
-  MONITORING WELL SCREEN
-  REFUSAL

NO DETECTIONS OF DCB OR TCB ABOVE THE MMCL IN DECEMBER 2021 SAMPLING.

GEOLOGIC CROSS SECTION A-A'
FORMER BIRD MACHINE COMPANY
WALPOLE, MASSACHUSETTS



WOOD MASSACHUSETTS, INC.
 271 MILL ROAD
 CHELMSFORD MA 01824

DRAWN BY: DED
 REVIEWED BY: SM

DATE:
 01/21/2022

FIGURE 10

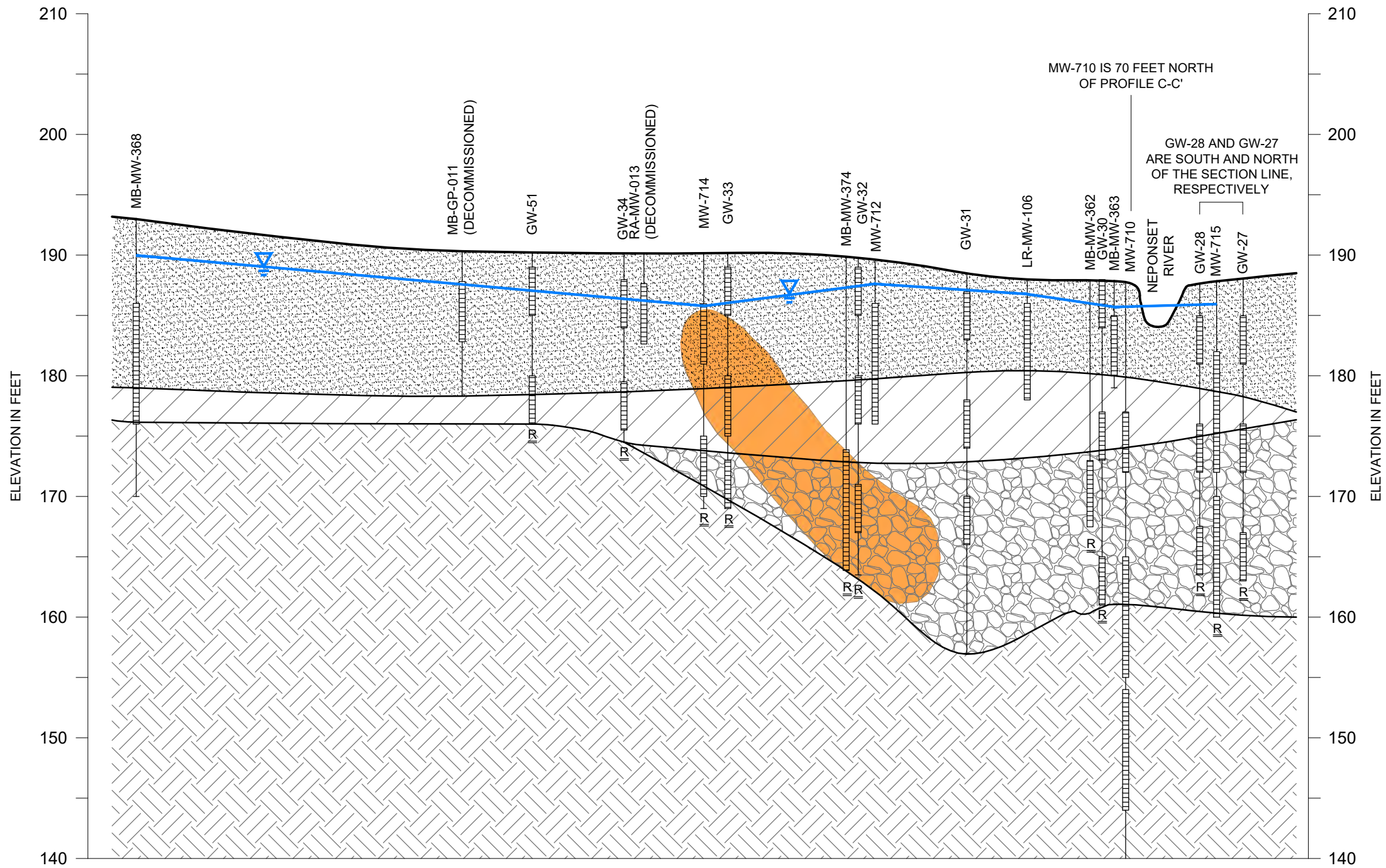
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SOUTHWEST

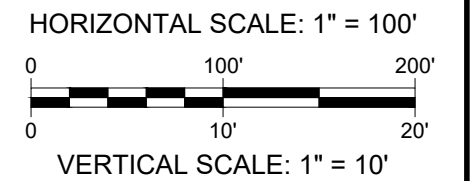
C

NORTHEAST

C'



PROFILE C - C'



- SAND
- SILTY SAND
- SILTY SAND & GRAVEL
- BEDROCK

- ESTIMATED AREA OF CVOCs > MMCL (DECEMBER 2021 RESULTS)
- GW-3** TEMPORARY GROUNDWATER MONITORING POINT
- MB-MW-125** MONITORING WELL LOCATION
- DECEMBER 2021 GROUNDWATER LEVEL
- SOIL HORIZON TRANSITION
- GROUND SURFACE
- MONITORING WELL SCREEN
- REFUSAL

**GEOLOGIC CROSS SECTION C-C'
FORMER BIRD MACHINE COMPANY
WALPOLE, MASSACHUSETTS**



WOOD MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MA 01824

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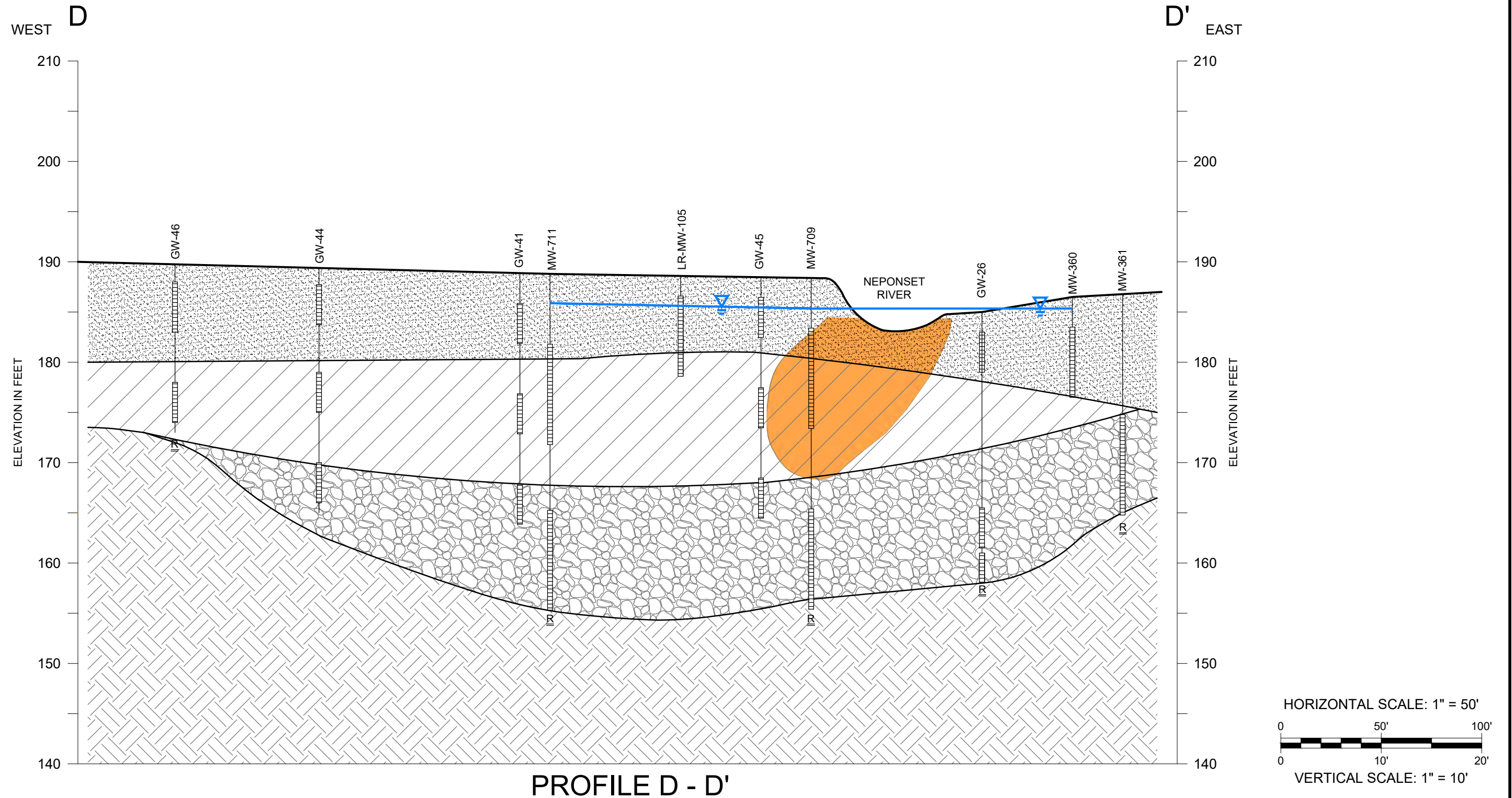
DATE:

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01/21/2022

FIGURE 11

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PROFILE D - D'

- SAND
- SILTY SAND
- SILTY SAND & GRAVEL
- BEDROCK

- ESTIMATED AREA OF CVOCs > MMCL (DECEMBER 2021 RESULTS)
- GW-3** TEMPORARY GROUNDWATER MONITORING POINT
- MB-MW-125** MONITORING WELL LOCATION
- DECEMBER 2021 GROUNDWATER LEVEL
- SOIL HORIZON TRANSITION
- GROUND SURFACE
- MONITORING WELL SCREEN
- REFUSAL

GEOLOGIC CROSS SECTION D-D'
FORMER BIRD MACHINE COMPANY
WALPOLE, MASSACHUSETTS



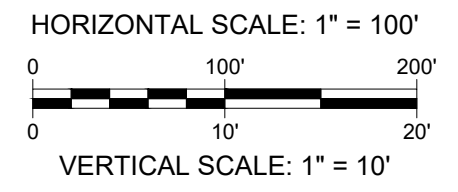
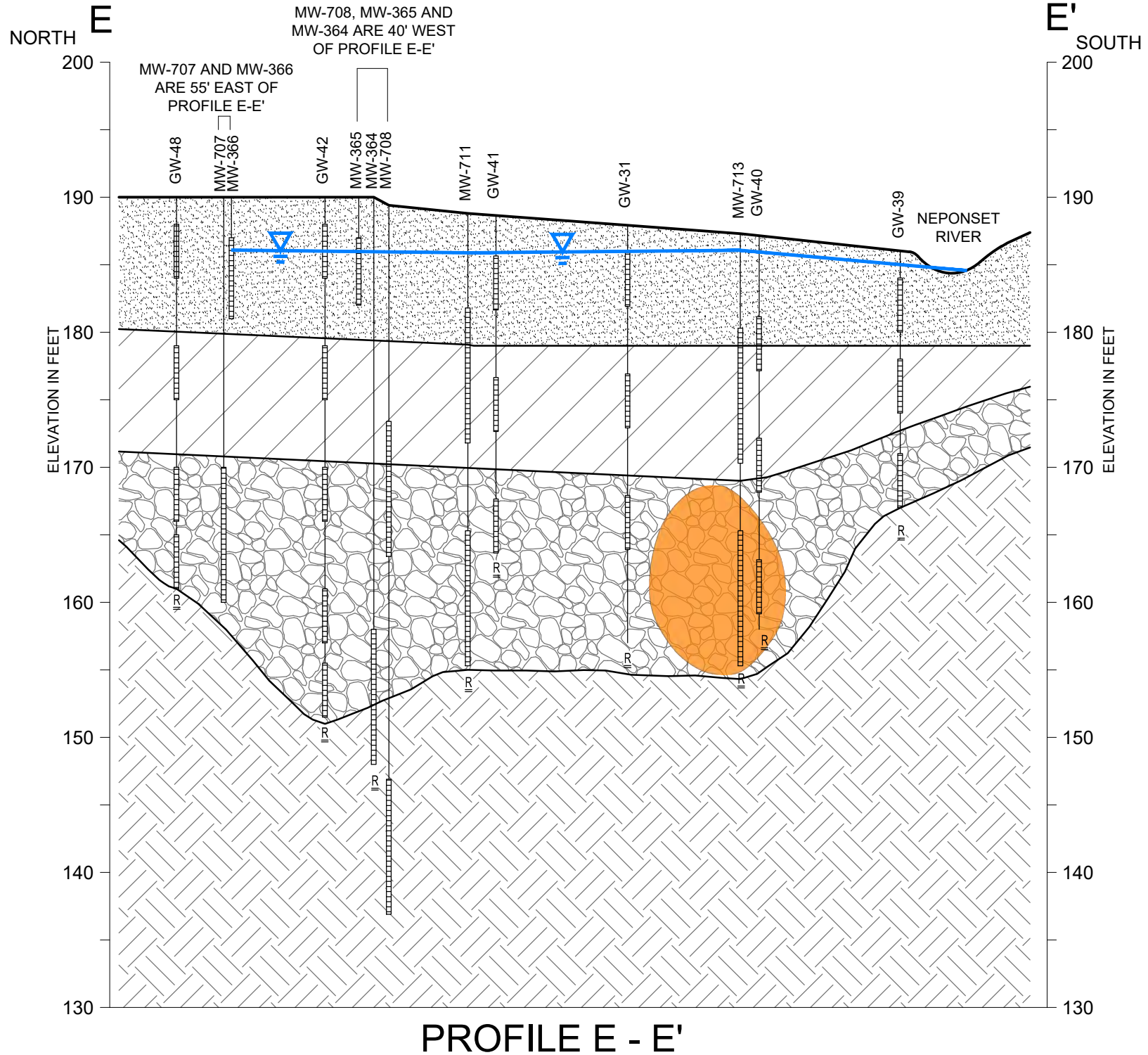
WOOD MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MA 01824

DRAWN BY: DED
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DATE:
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FIGURE 12

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- | | | | |
|--|---------------------|--|--|
| | SAND | | ESTIMATED AREA OF CVOCs > MMCL (DECEMBER 2021 RESULTS) |
| | SILTY SAND | | TEMPORARY GROUNDWATER MONITORING POINT |
| | SILTY SAND & GRAVEL | | MONITORING WELL LOCATION |
| | BEDROCK | | DECEMBER 2021 GROUNDWATER LEVEL |
| | | | SOIL HORIZON TRANSITION |
| | | | GROUND SURFACE |
| | | | MONITORING WELL SCREEN |
| | | | REFUSAL |

**GEOLOGIC CROSS SECTION E-E'
 FORMER BIRD MACHINE COMPANY
 WALPOLE, MASSACHUSETTS**



WOOD MASSACHUSETTS, INC.
 271 MILL ROAD
 CHELMSFORD MA 01824

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 REVIEWED BY: SM

DATE:
 01/21/2022

FIGURE 13

Figure 14
NP-MW-601 DCB/TCB Concentrations vs. Time

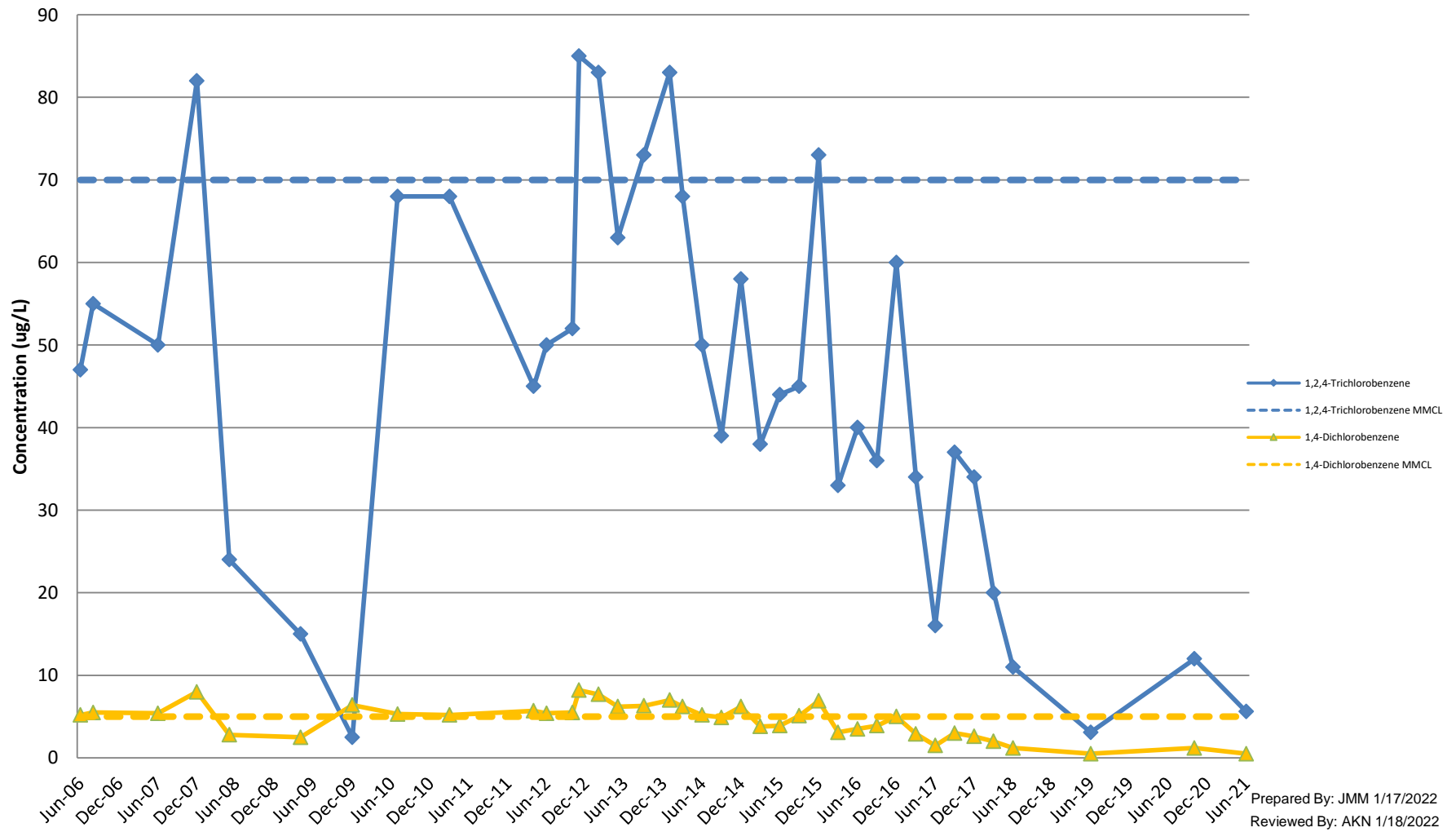
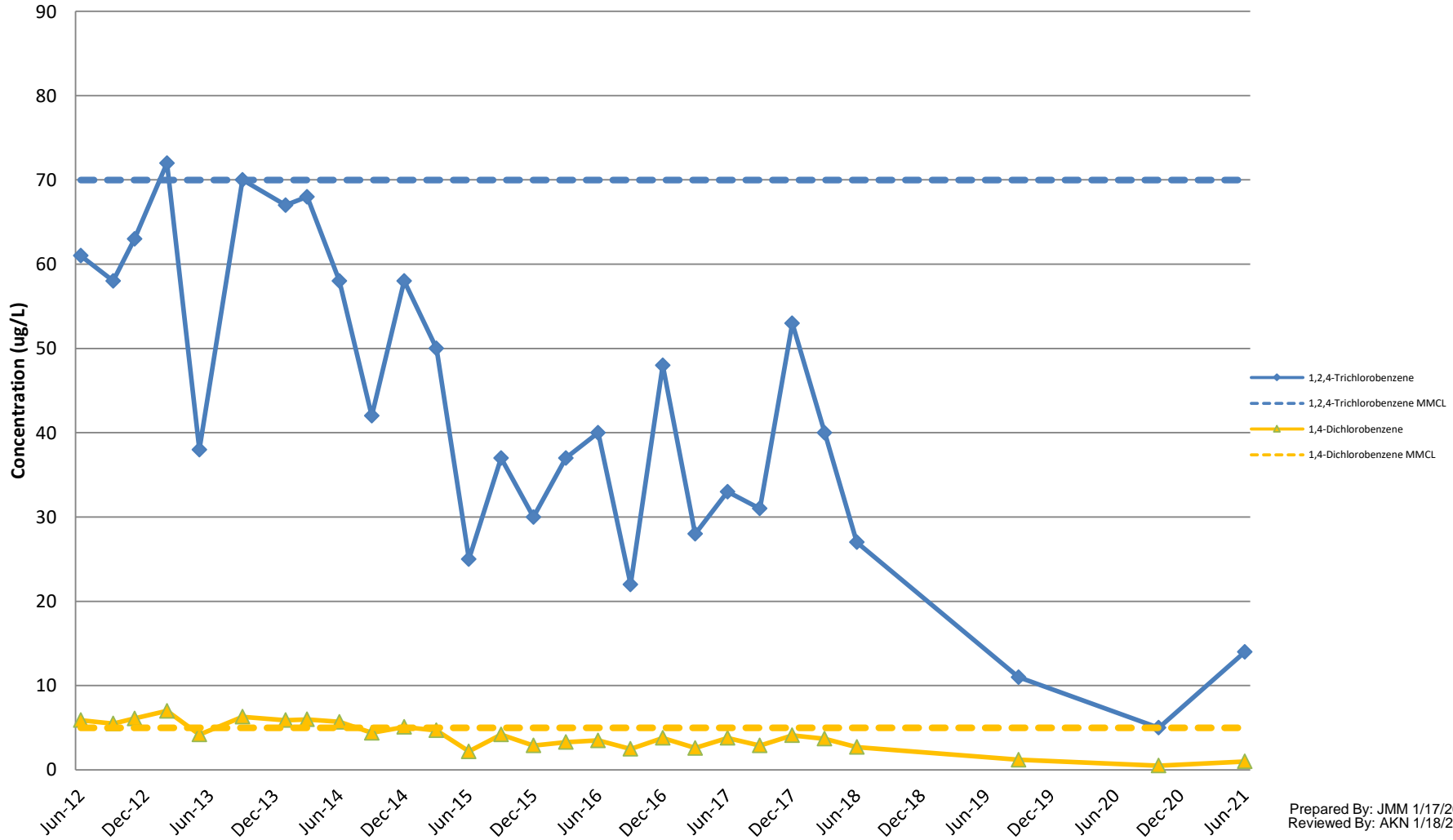
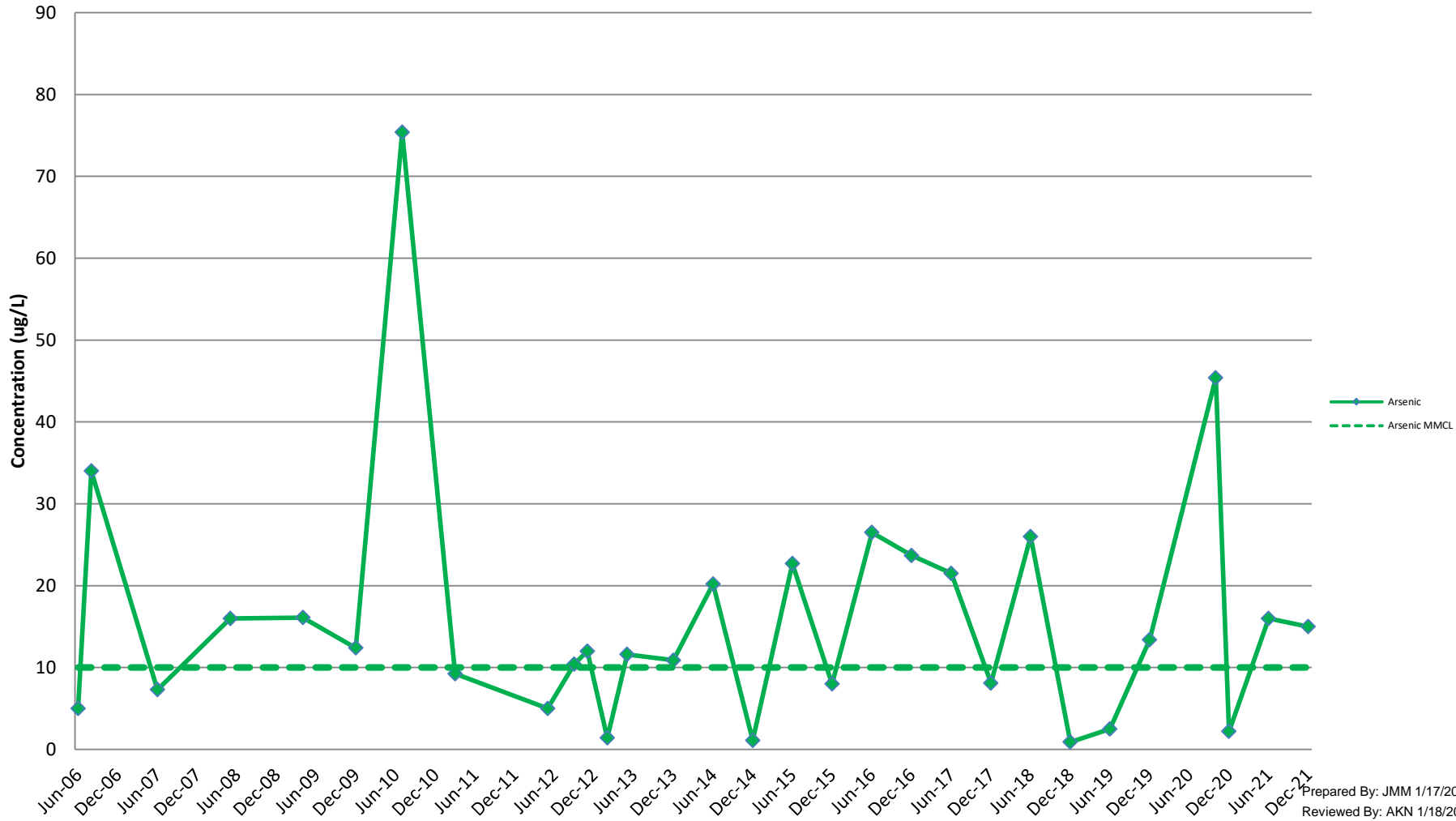


Figure 15
MW-702B DCB/TCB Concentrations vs. Time



Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 16
LR-MW-122 Arsenic Concentrations vs. Time



Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 17
MW-706S Arsenic Concentrations vs. Time

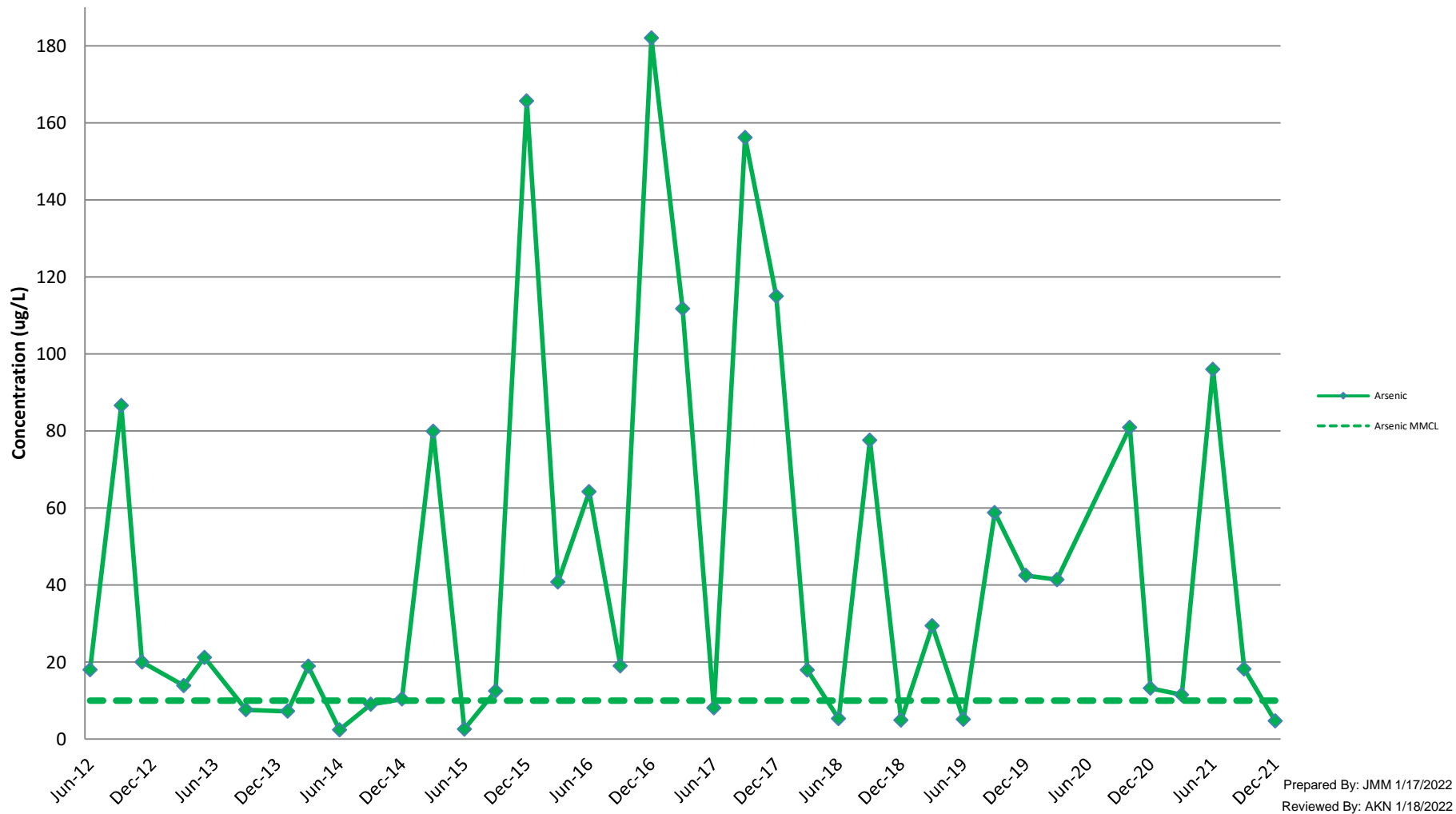
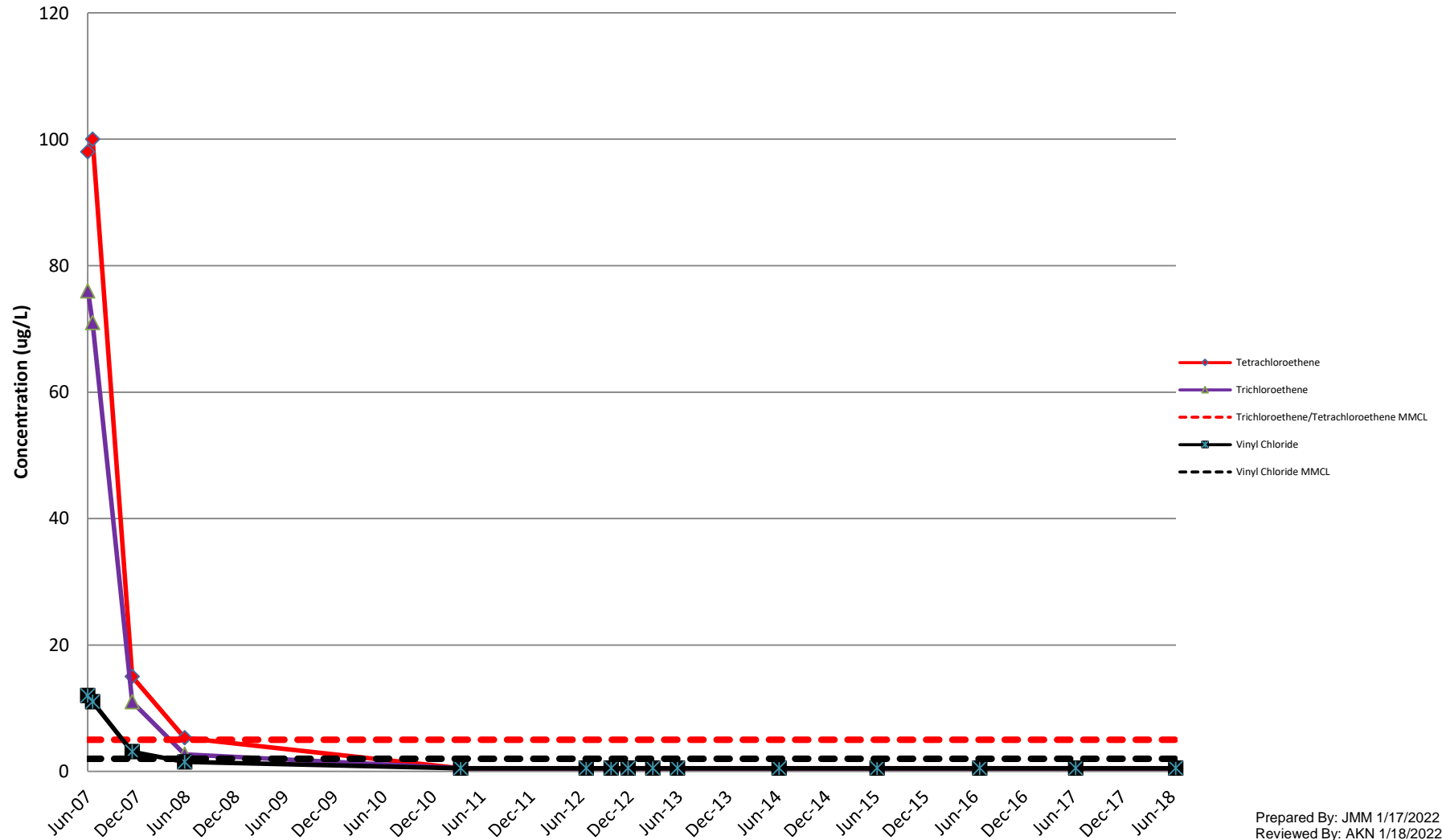
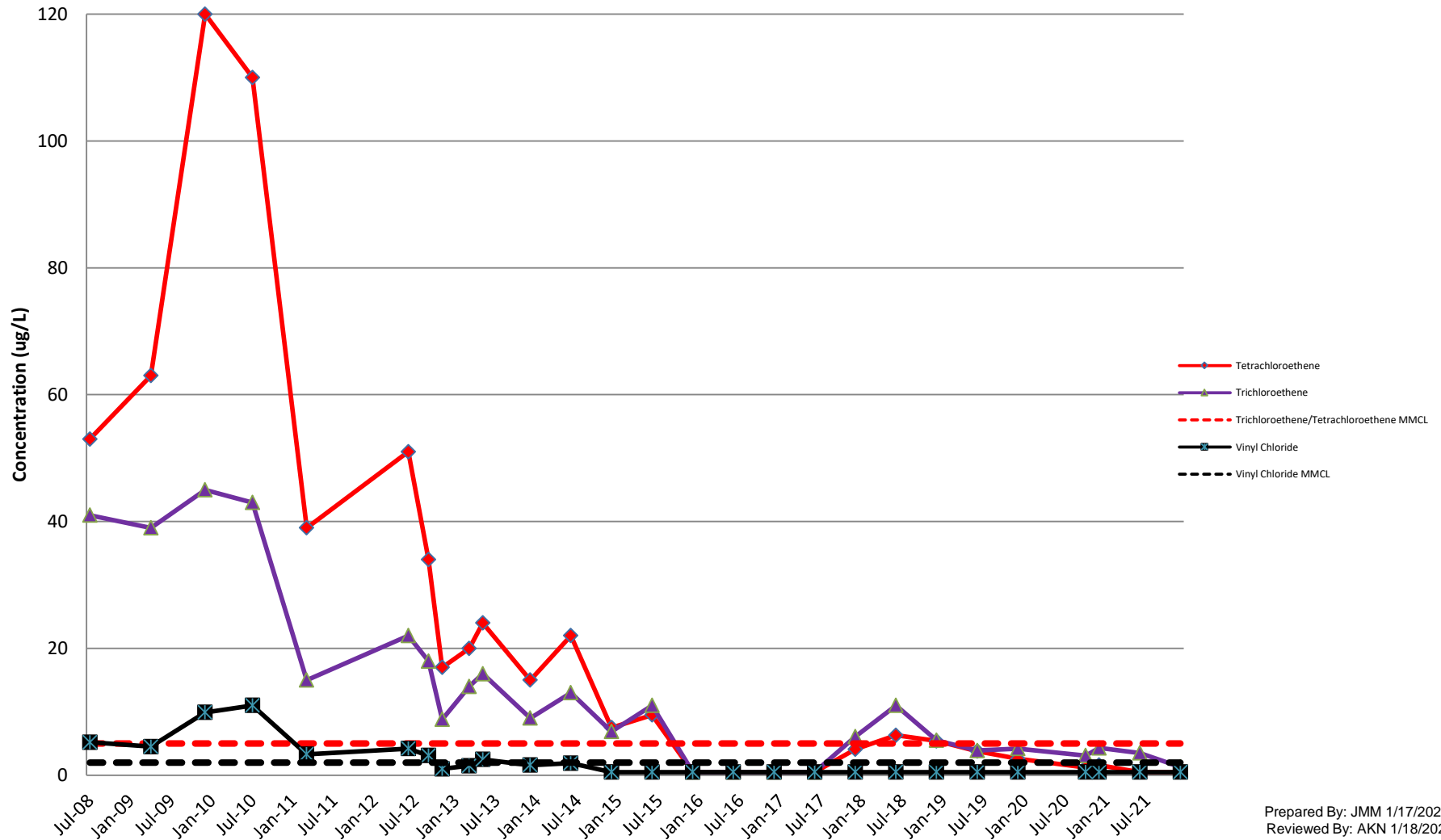


Figure 18
LR-MW-129 cVOC Concentrations vs. Time



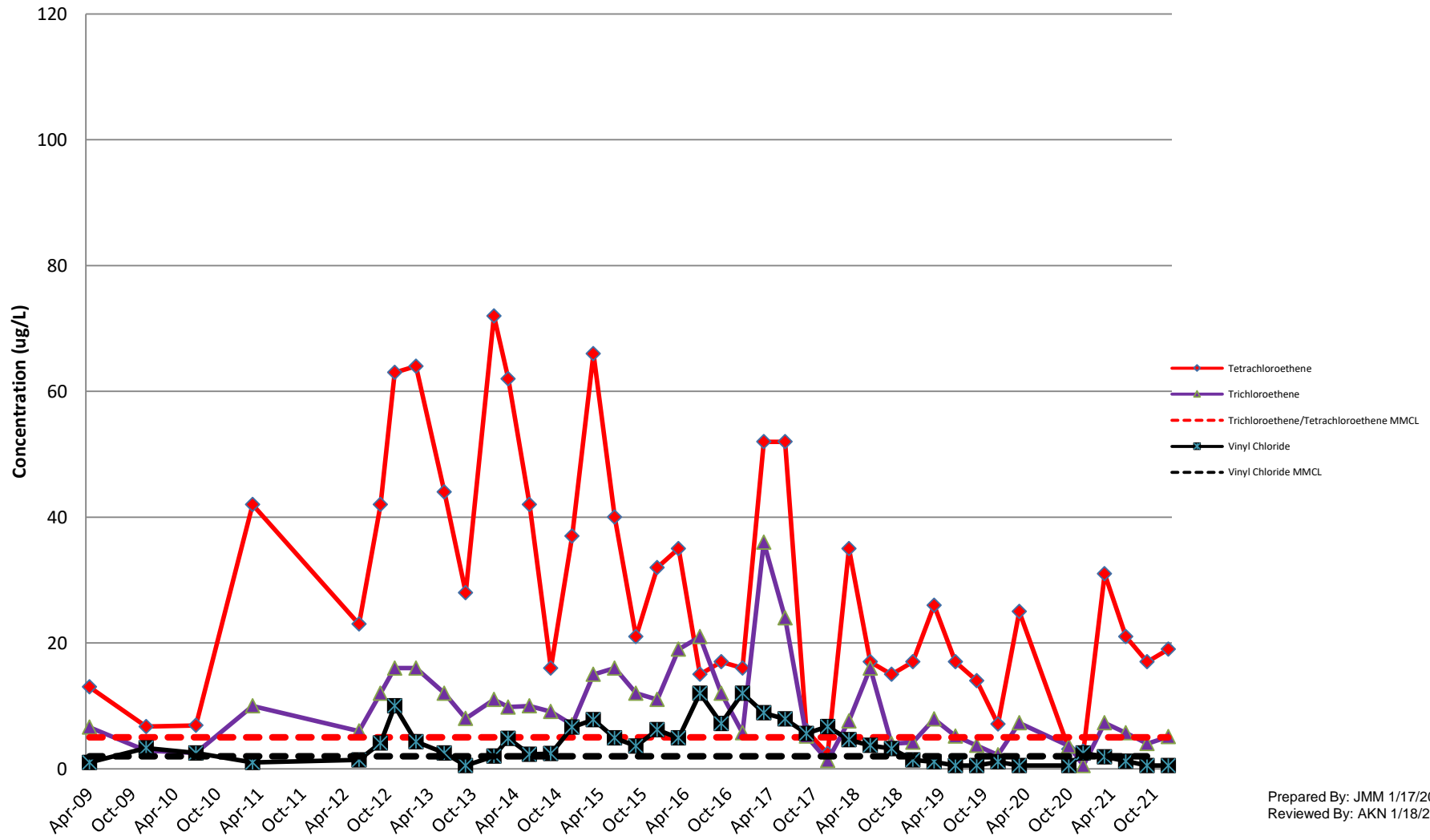
Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 19
MB-MW-362 cVOC Concentrations vs. Time



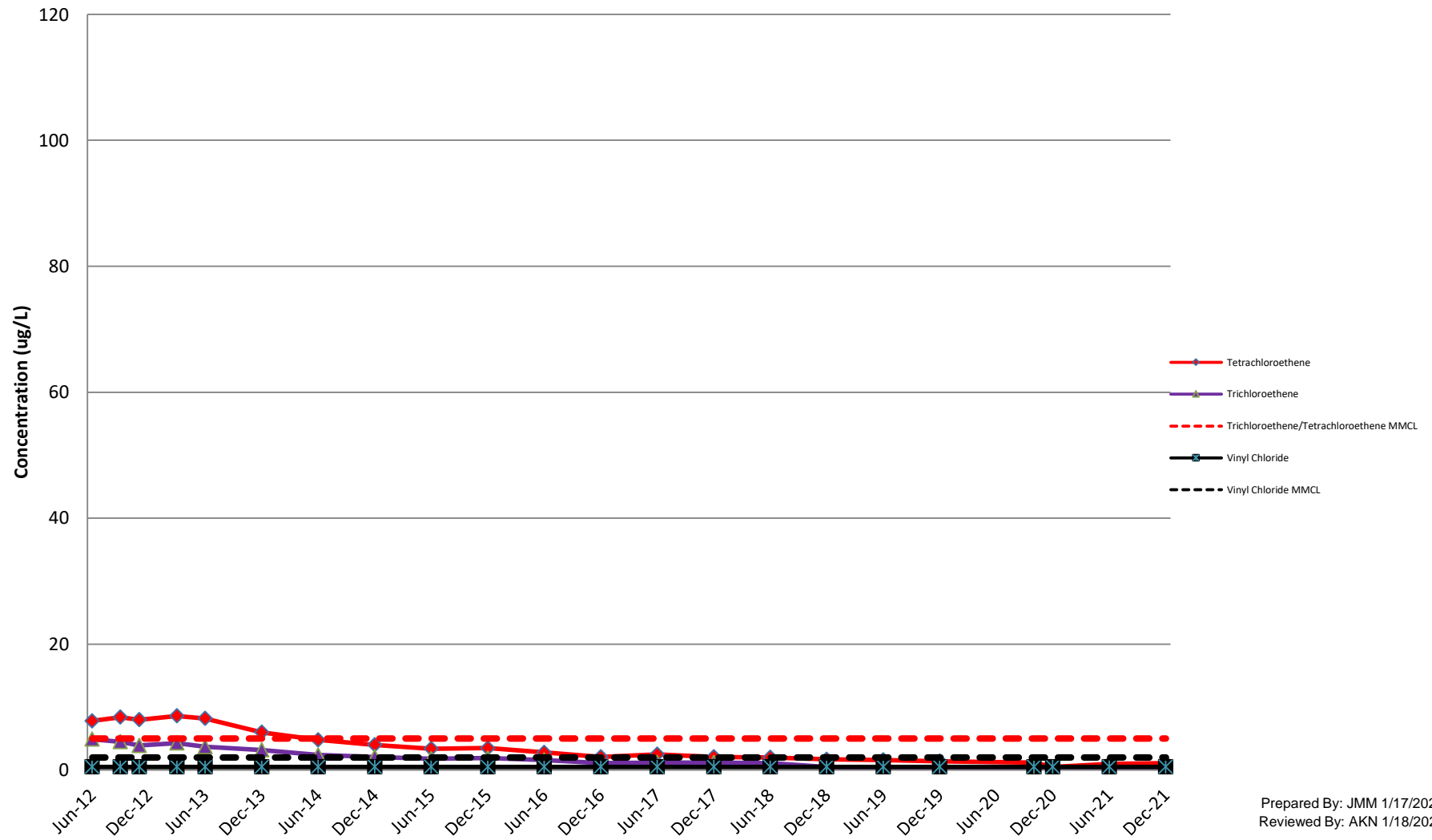
Prepared By: JMM 1/17/2022
 Reviewed By: AKN 1/18/2022

Figure 20
MB-MW-374 cVOC Concentrations vs. Time



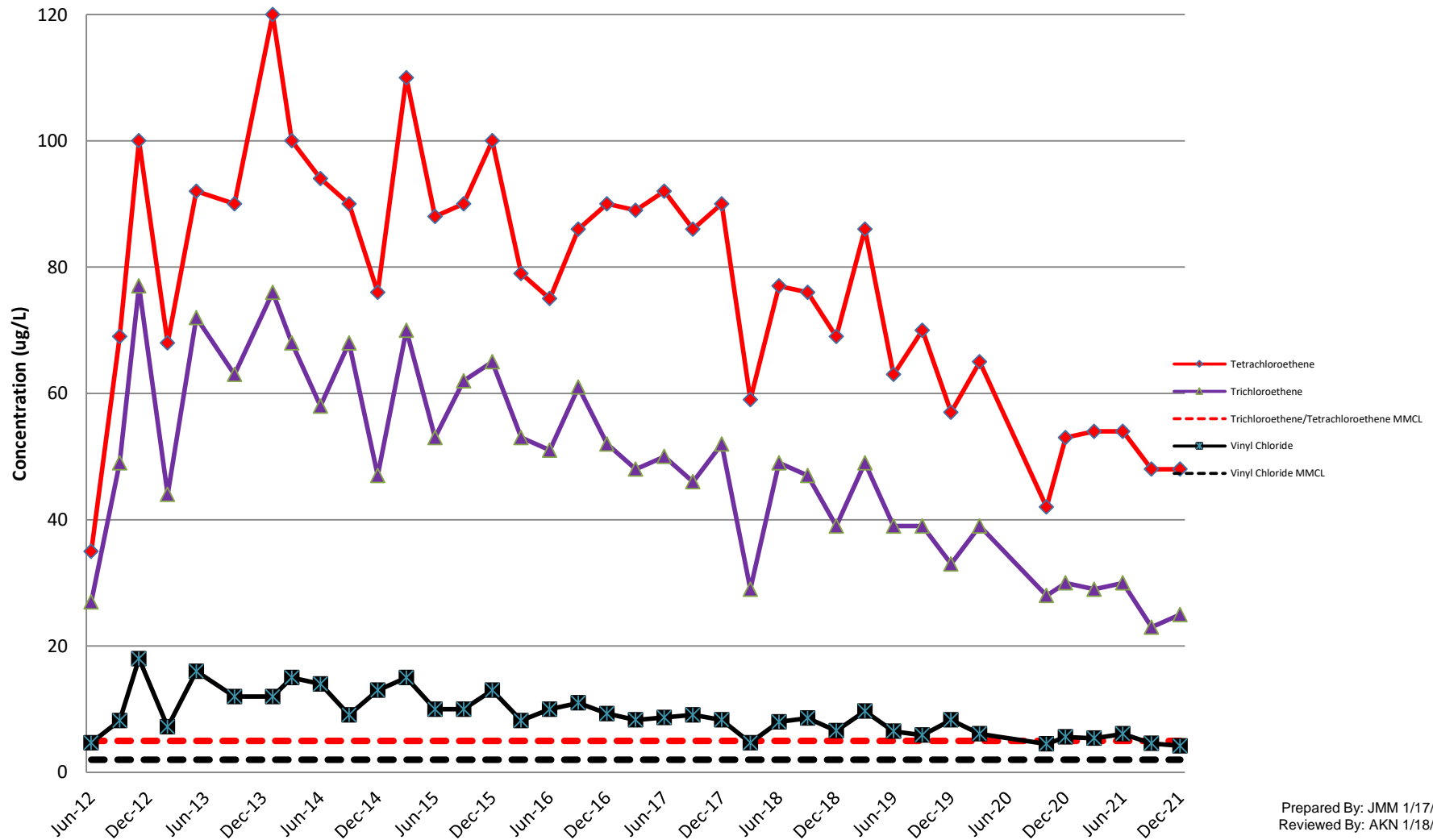
Prepared By: JMM 1/17/2022
 Reviewed By: AKN 1/18/2022

Figure 21
MW-704S cVOC Concentrations vs. Time



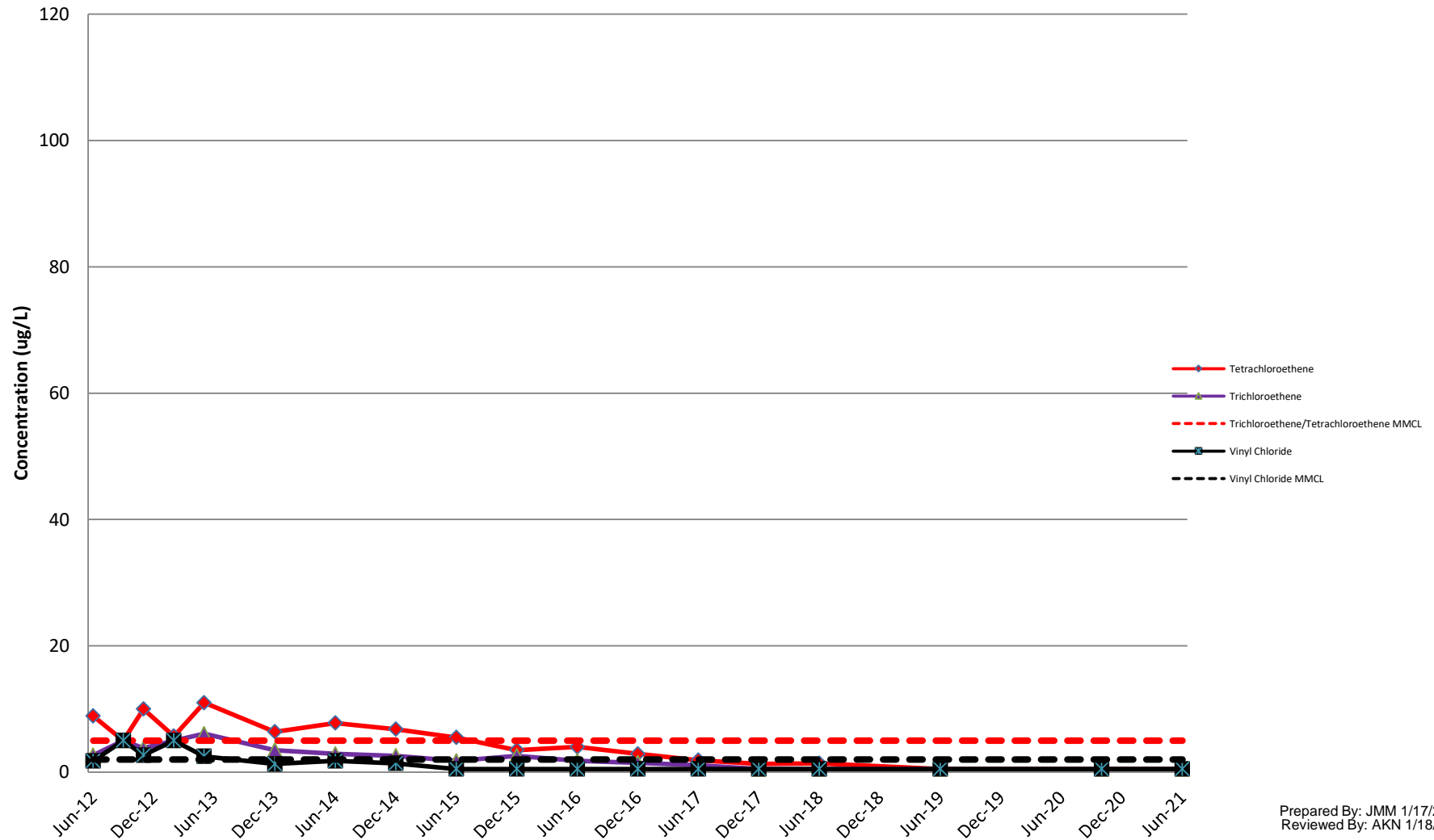
Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 22
MW-709S cVOC Concentrations vs. Time



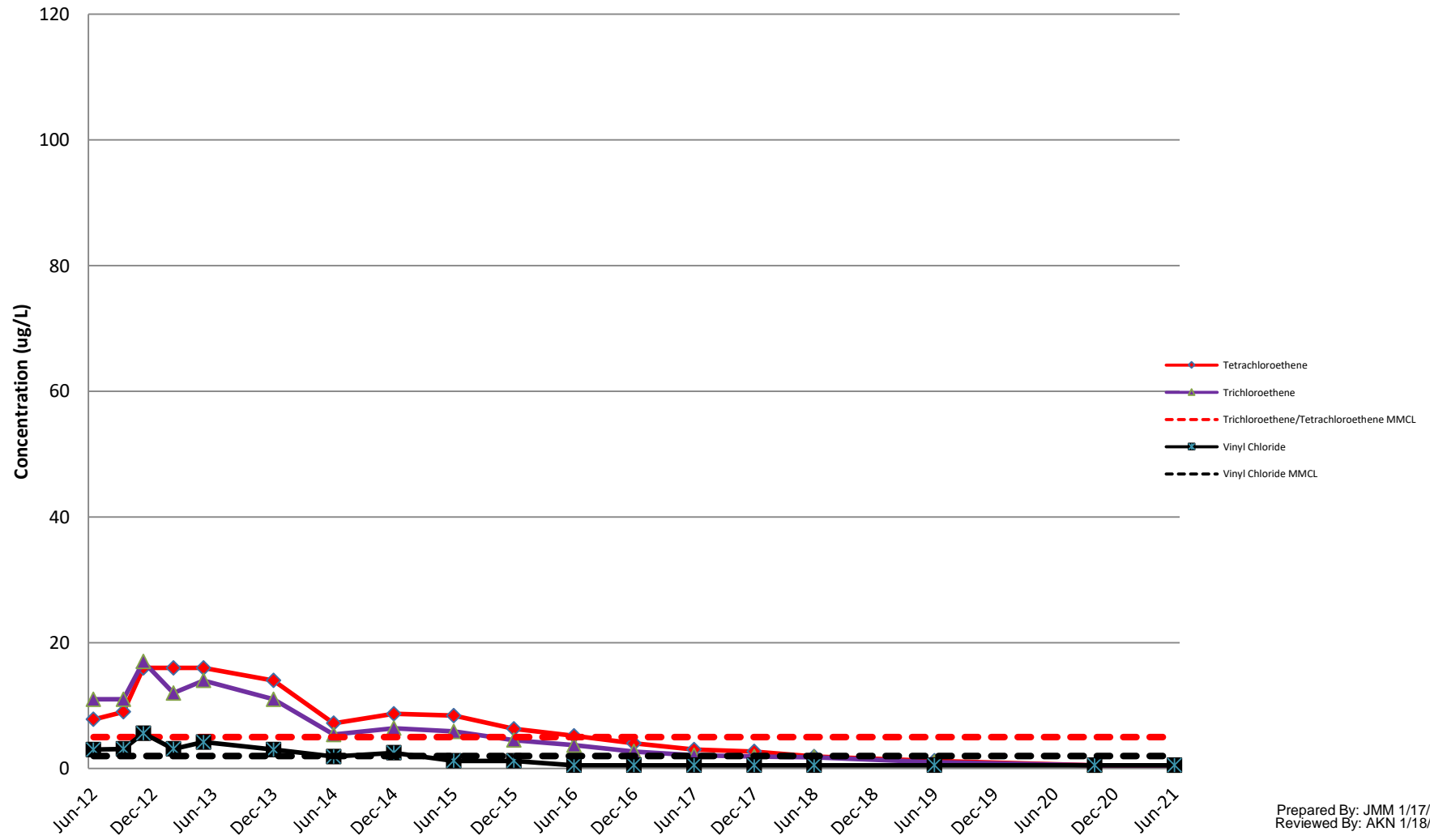
Prepared By: JMM 1/17/2022
 Reviewed By: AKN 1/18/2022

Figure 23
MW-709D cVOC Concentrations vs. Time



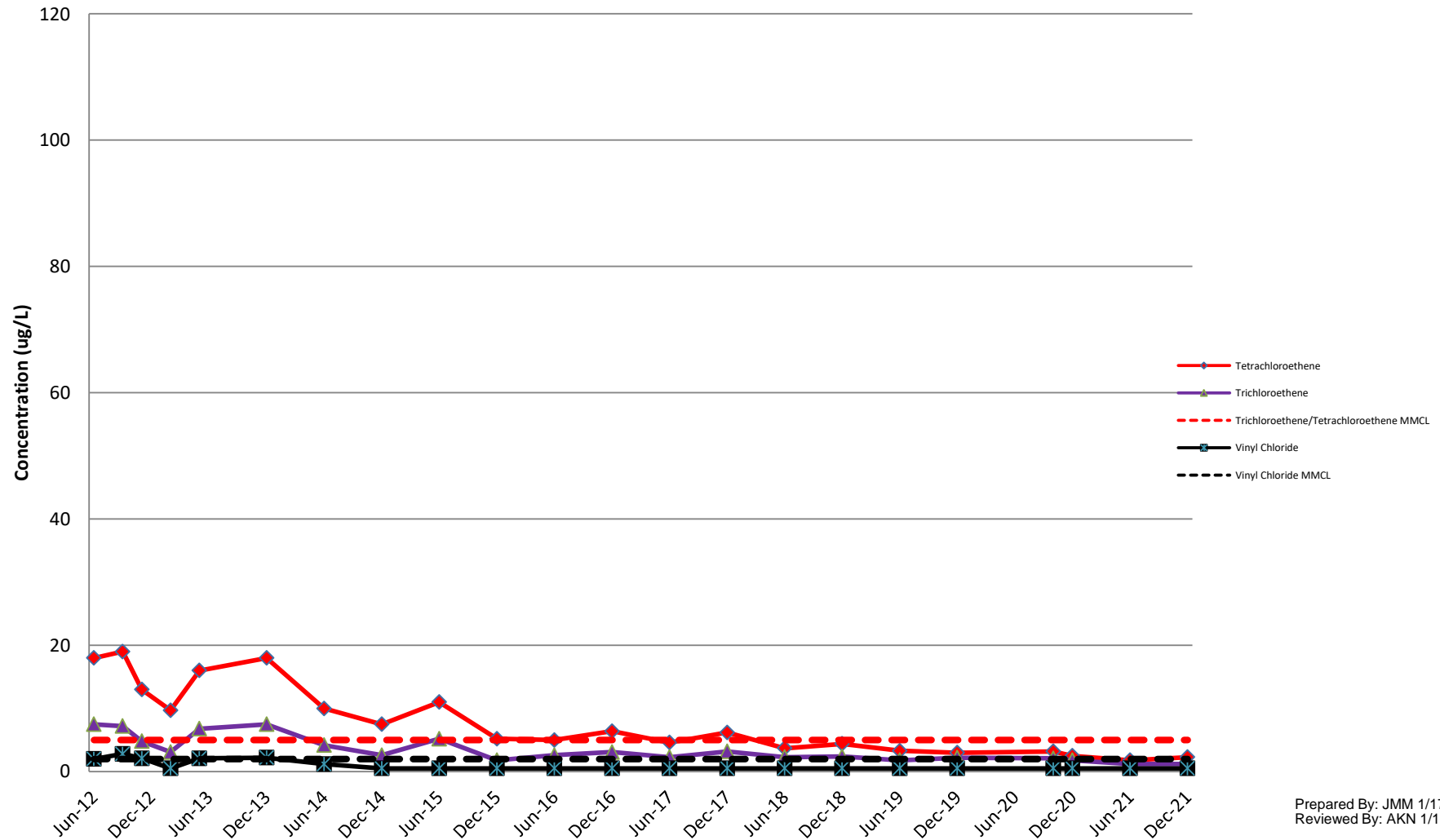
Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 24
MW-710S cVOC Concentrations vs. Time



Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 25
MW-710M cVOC Concentrations vs. Time



Prepared By: JMM 1/17/2022
Reviewed By: AKN 1/18/2022

Figure 26
MW-711D cVOC Concentrations vs. Time

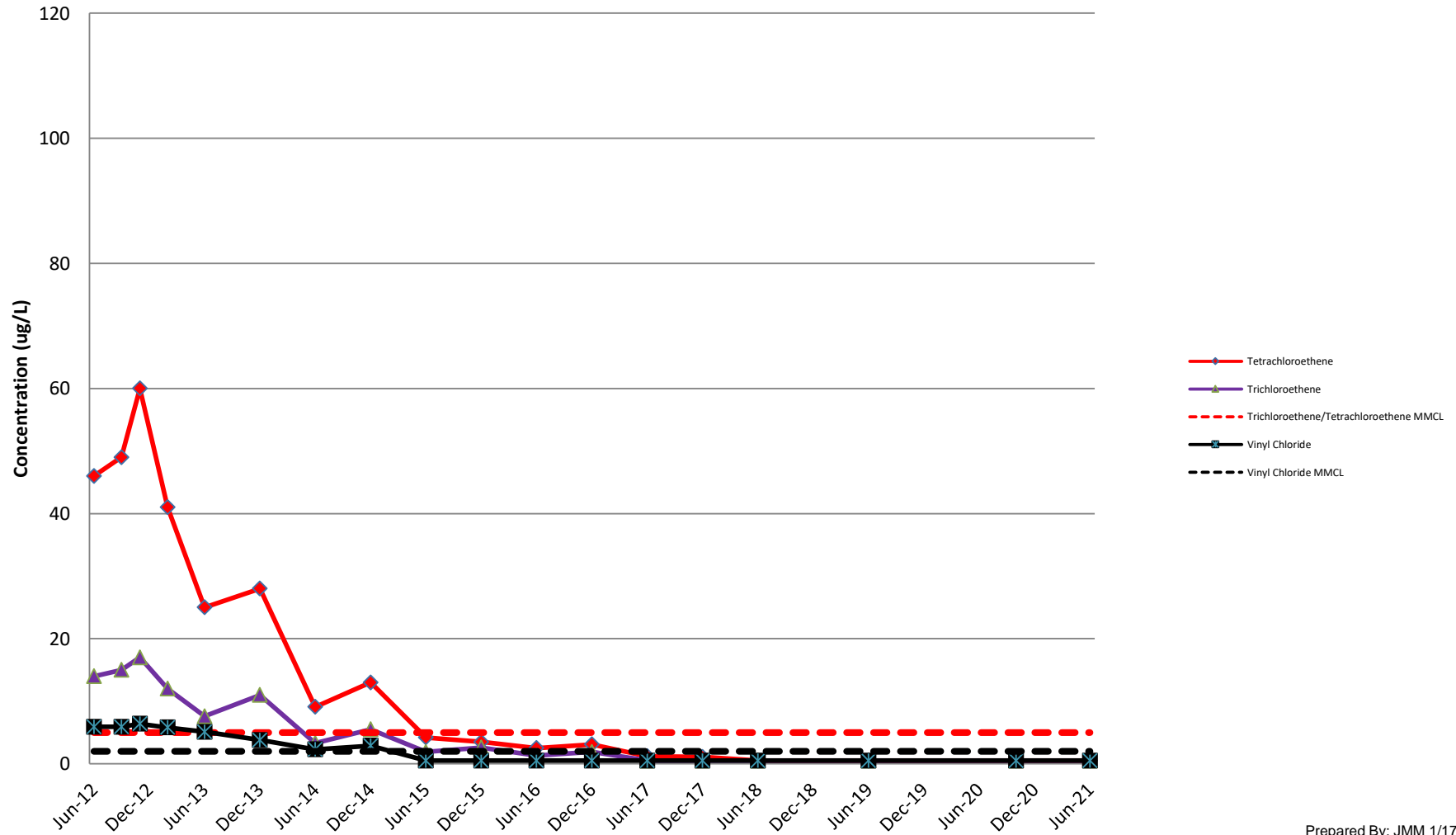
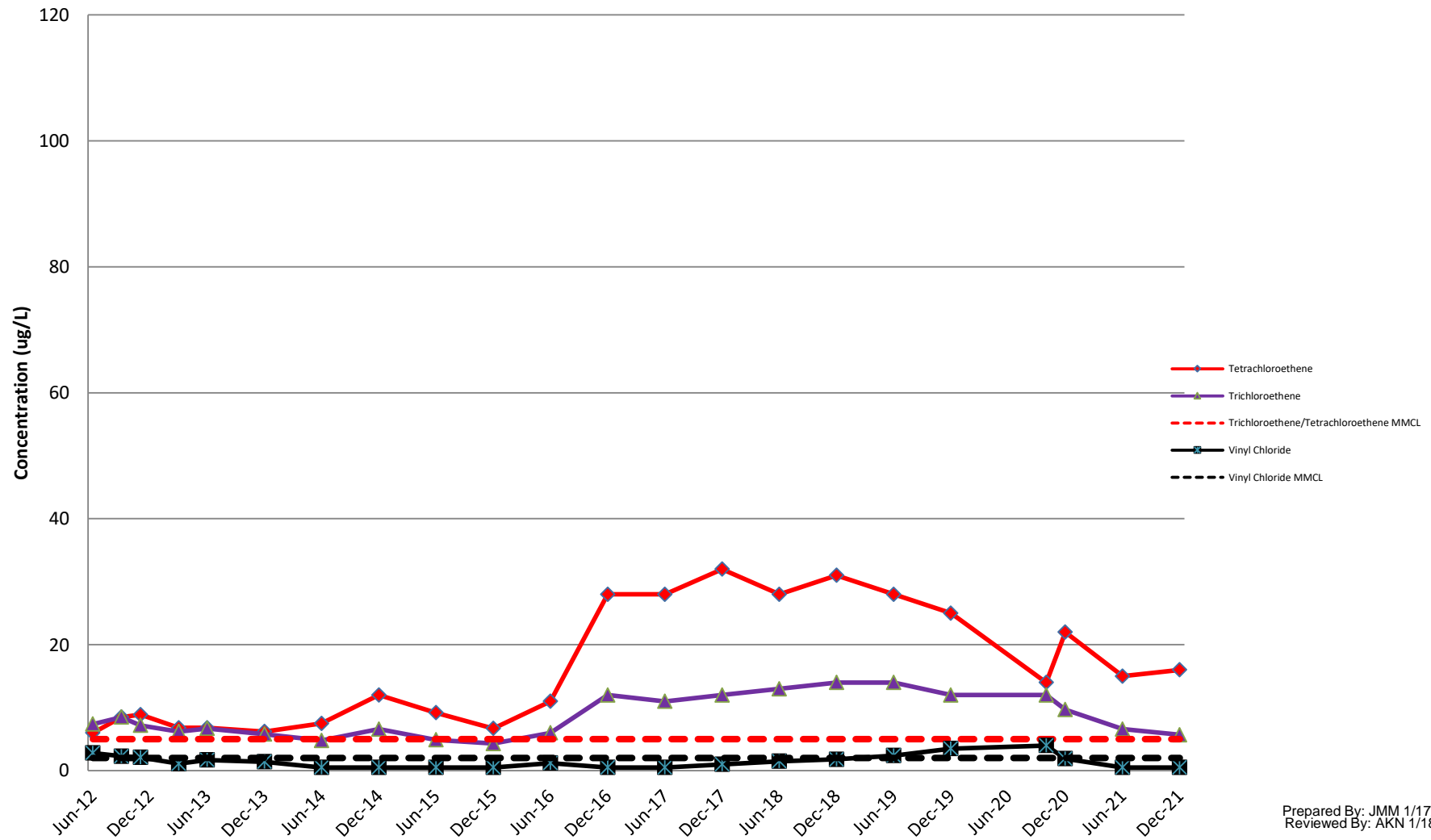
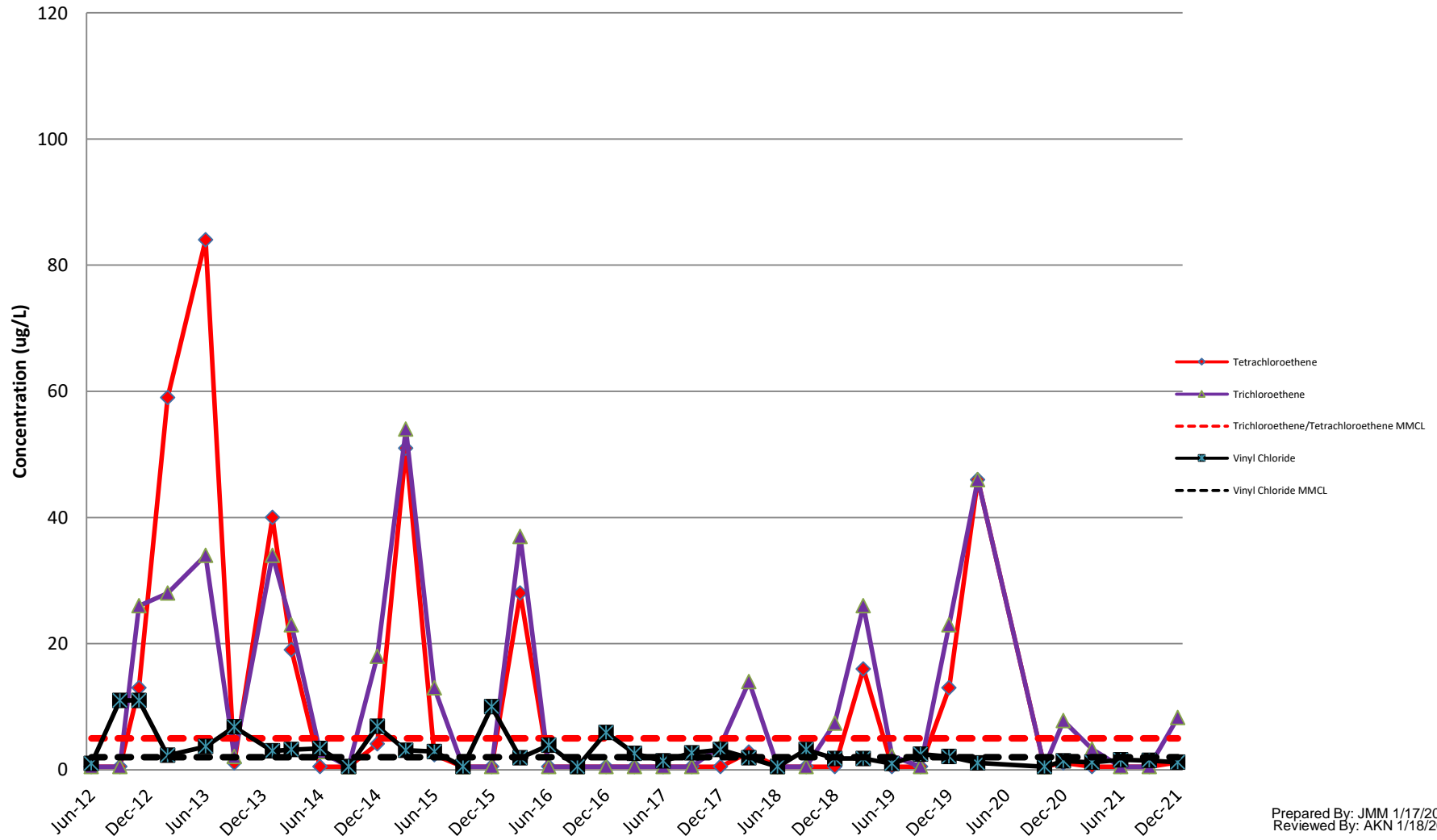


Figure 27
MW-713D cVOC Concentrations vs. Time



Prepared By: JMM 1/17/2022
 Reviewed By: AKN 1/18/2022

Figure 28
MW-714S cVOC Concentrations vs. Time





wood.

Tables



Table 1
Sampling Frequency of Wells in the Monitoring Program
Former Bird Machine Company Site Neponset Street, Walpole, MA

Plume	Sampling Frequency	Well ID	Sampling Plan			
			Mar	Jun	Sep	Dec
Arsenic	Quarterly	MW-706S	X	X	X	X
	Semi-Annual	LR-MW-122		X		X
	Annual	LR-MW-121		X		
		MW-703S		X		
		MB-MW-371		X		
		MW-705S		X		
DCB	Quarterly	MW-702B		X		
		NP-MW-601		X		
	Annual	MW-700S				
		MW-701S				
		MW-702D				
		NP-MW-602				
	NP-MW-603					
cVOCs	Quarterly	MW-709S	X	X	X	X
		MB-MW-374	X	X	X	X
		MW-714S	X	X	X	X
	Semi-Annual	MW-704S		X		X
		MW-709D		X		
		MW-710S		X		
		MW-710M		X		X
		MB-MW-362		X		X
		MW-707D		X		
		MW-711D		X		
		MW-713D		X		X
	Annual	MW-704D		X		
		MB-MW-360		X		
		MB-MW-361		X		
		LR-MW-124				
		LR-MW-129				
		MW-710D				
		MB-MW-363		X		
		MW-715S		X		
		MW-708B				
		MW-708D				
		MW-711S				
		MW-713S		X		
		MW-712S				
		MW-714D		X		
		Sub Total Per Event			4	26

Created by: C. Keating 9/6/2018
Approved by: K. Henry 9/6/2018

Table 2. MNA Sampling Parameters and Container Types

Analytes	Method	Containers (number, size, and type)	Preservation Requirements (chemical, temperature, light protection)	Maximum Holding Time (preparation/analysis)
<i>Arsenic MWs: 121, 122, 371, 703, 705, 706 (see Table 1 for sampling frequency of monitoring wells)</i>				
Arsenic	SW-846 6020A	one, 500 mL, polyethylene	NH ₃ to pH<2, Cool to 4° C	6 months from collection
<i>DCB & cVOC MWs: 124, 129, 360-363, 374, 601-603, 700S, 701S, 702D/B, 704S/D, 707D, 708D/B, 709S/D, 710S/M/D, 711S/D, 712S, 713S/D, 714S/D, 715S (see Table 1 for sampling frequency of monitoring wells)</i>				
VOCs	SW-846 8260C	two, 40 mL, septum sealed amber glass vials	HCl to pH<2, Cool to 4° C, protect from light, no headspace	14 days from collection

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			LR-MW-121	LR-MW-121	LR-MW-122	LR-MW-122	LR-MW-122	LR-MW-122	LR-MW-122	LR-MW-122
Sample Date:			10/12/20	6/23/21	12/12/17	12/12/17	6/20/18	12/20/18	12/20/18	6/11/19
Lab Sample ID:			L2043814-15	410-46393-1	L1745732-09	L1745732-11	L1823386-12	L1852851-05	L1852851-01	L1925347-03
Sample Type:			N	N	N	FD	N	N	FD	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	ND	ND	8.1	7.9	26	0.9	0.9	2.5
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l								
1,2,3-TRICHLOROBENZENE	NA	ug/l								
1,2,4-TRICHLOROBENZENE	70	ug/l								
1,2-DICHLOROETHENE	600	ug/l								
1,2-DICHLOROETHANE	5	ug/l								
1,3-DICHLOROBENZENE	100	ug/l								
1,4-DICHLOROBENZENE	5	ug/l								
ACETONE	6300	ug/l								
CHLOROBENZENE	100	ug/l								
CIS-1,2-DICHLOROETHENE	70	ug/l								
NAPHTHALENE	140	ug/l								
p-ISOPROPYLTOLUENE	NA	ug/l								
TETRACHLOROETHENE	5	ug/l								
TRANS-1,2-DICHLOROETHENE	100	ug/l								
TRICHLOROETHENE	5	ug/l								
VINYL CHLORIDE	2	ug/l								

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			LR-MW-122	LR-MW-122	LR-MW-122	LR-MW-122	LR-MW-122	LR-MW-124	LR-MW-129	MB-MW-360
Sample Date:			12/23/19	10/14/20	12/14/20	6/24/21	12/2/21	6/20/18	6/20/18	6/22/18
Lab Sample ID:			L1961461-03	L2044349-07	L2056063-04	410-46393-7	L2166365-11	L1823386-14	L1823386-15	L1823868-17
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	13.4	45.4	2.2	16	15			
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l						ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l						ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l						ND	ND	ND
1,2-DICHLOROBENZENE	600	ug/l						ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l						ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l						ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l						ND	ND	ND
ACETONE	6300	ug/l						ND	ND	ND
CHLOROBENZENE	100	ug/l						ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l						ND	ND	ND
NAPHTHALENE	140	ug/l						ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l						ND	ND	ND
TETRACHLOROETHENE	5	ug/l						ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l						ND	ND	ND
TRICHLOROETHENE	5	ug/l						ND	ND	ND
VINYL CHLORIDE	2	ug/l						ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MB-MW-360	MB-MW-360	MB-MW-360	MB-MW-361	MB-MW-361	MB-MW-361	MB-MW-361	MB-MW-362
Sample Date:			6/14/19	10/14/20	6/23/21	6/22/18	6/14/19	10/14/20	6/23/21	12/12/17
Lab Sample ID:			L1925786-02	L2044349-05	L2134596-02	L1823868-18	L1925786-01	L2044349-04	L2134596-08	L1745732-06
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	5.7
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	1.6	ND	ND	ND	ND	ND	4.1
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	6.1
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MB-MW-362	MB-MW-362	MB-MW-362	MB-MW-362	MB-MW-362	MB-MW-362	MB-MW-362	MB-MW-362
Sample Date:			6/21/18	12/20/18	6/11/19	12/23/19	10/15/20	12/15/20	6/24/21	12/2/21
Lab Sample ID:			L1823868-08	L1852851-08	L1925347-09	L1961461-10	L2044349-14	L2056063-07	L2134596-20	L2166365-08
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	6.5	3.5	2.5	3.2	3.4	3.9	4.2	1.4
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	6.3	5.4	3.8	2.6	1.2	1.6	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	11	5.5	3.9	4.2	3.1	4.3	3.5	1.3
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MB-MW-363	MB-MW-363	MB-MW-363	MB-MW-363	MB-MW-371	MB-MW-371	MB-MW-371	MB-MW-371
Sample Date:			6/21/18	6/11/19	10/14/20	6/24/21	6/20/18	6/20/18	6/11/19	10/13/20
Lab Sample ID:			L1823868-06	L1925347-10	L2044349-08	L2134596-26	L1823386-13	L1823386-16	L1925347-04	L2043814-14
Sample Type:			N	N	N	N	N	FD	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l					0.9	0.9	1	0.6
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND				
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND				
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND				
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND				
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND				
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND				
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND				
ACETONE	6300	ug/l	ND	ND	ND	ND				
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND				
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND				
NAPHTHALENE	140	ug/l	ND	ND	ND	ND				
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND				
TETRACHLOROETHENE	5	ug/l	ND	ND	ND	ND				
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND				
TRICHLOROETHENE	5	ug/l	ND	ND	ND	ND				
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND				

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MB-MW-371	MB-MW-371	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374
Sample Date:			6/24/21	6/24/21	12/12/17	3/22/18	3/22/18	6/21/18	9/28/18	9/28/18
Lab Sample ID:			410-46393-3	410-46393-4	L1745732-07	L1809946-01	L1809946-06	L1823868-03	L1839360-04	L1839360-02
Sample Type:			N	FD	N	N	FD	N	N	FD
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	ND	ND						
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l			ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l			ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l			ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l			ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l			ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l			ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l			ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l			ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l			ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l			18	10	9.9	7.3	3.9	3.6
NAPHTHALENE	140	ug/l			ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l			ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l			2.4	34	35	17	15	15
TRANS-1,2-DICHLOROETHENE	100	ug/l			1.8	1.1	1	ND	ND	ND
TRICHLOROETHENE	5	ug/l			1.3	7.5	7.6	16	4	4
VINYL CHLORIDE	2	ug/l			6.7	4.6	4.5	3.7	3.2	2.9

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374
Sample Date:			12/21/18	3/18/19	6/12/19	9/10/19	12/23/19	12/23/19	3/5/20	10/13/20	
Lab Sample ID:			L1852851-12	L1910551-03	L1925347-20	L1941176-07	L1961461-09	L1961461-05	L2010088-05	L2043814-09	
Sample Type:			N	N	N	N	N	FD	N	N	
Analyte	MMCL	Units									
Dissolved Metals											
ARSENIC	10	ug/l									
Volatile Organics											
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	2.7	2.2	1.4	1.2	1.4	1.5	1.7	4.7	
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	17	26	17	14	6	7.1	25	3.1	
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	4.2	7.9	5.2	3.7	2	2.2	7.3	3.6	
VINYL CHLORIDE	2	ug/l	1.4	1.1	ND	ND	1.1	1.1	ND	ND	

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MB-MW-374	MW-700S	MW-701S	MW-701S
Sample Date:			12/15/20	3/18/21	6/23/21	9/21/21	12/2/21	6/19/18	6/19/18	6/19/18
Lab Sample ID:			L2056063-10	L2113626-03	L2134596-07	L2150919-05	L2166365-05	L1823386-01	L1823386-02	L1823386-05
Sample Type:			N	N	N	N	N	N	N	FD
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	8.4	8.7	5.2	2.4	2.1	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	2.8	31	21	17	19	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	7.3	5.7	4	5.1	ND	ND	ND
VINYL CHLORIDE	2	ug/l	2.5	1.9	1.2	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-702B	MW-702B	MW-702B	MW-702B	MW-702B	MW-702B	MW-702B	MW-702D
Sample Date:			12/11/17	12/11/17	3/22/18	6/19/18	9/10/19	10/12/20	6/22/21	6/19/18
Lab Sample ID:			L1745732-01	L1745732-10	L1809946-08	L1823386-07	L1941176-04	L2043814-04	L2134596-01	L1823386-08
Sample Type:			N	FD	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	17	14	14	12	9.3	7.3	7.2	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	53	47	40	27	11	5	14	ND
1,2-DICHLOROETHENE	600	ug/l	2.2	1.9	2	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	1.7	1.5	1.7	1.4	1.2	ND	1	ND
1,4-DICHLOROBENZENE	5	ug/l	4.1	3.5	3.7	2.7	1.2	ND	1	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	1.3	1.1	1.1	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-702D	MW-702D	MW-703S	MW-703S	MW-703S	MW-703S	MW-704D	MW-704D
Sample Date:			6/12/19	6/12/19	6/20/18	6/12/19	10/12/20	6/24/21	6/22/18	6/14/19
Lab Sample ID:			L1925347-21	L1925347-24	L1823386-17	L1925347-16	L2043814-01	410-46393-5	L1823868-15	L1925786-04
Sample Type:			N	FD	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l			0.7	1.1	1.4	ND		
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND					ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND					ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND					ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND					ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND					ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND					ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND					ND	ND
ACETONE	6300	ug/l	ND	ND					ND	ND
CHLOROBENZENE	100	ug/l	ND	ND					ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND					ND	ND
NAPHTHALENE	140	ug/l	ND	ND					ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND					ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND					1.3	1.2
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND					ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND					ND	ND
VINYL CHLORIDE	2	ug/l	ND	ND					ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-704D	MW-704D	MW-704S	MW-704S	MW-704S	MW-704S	MW-704S	MW-704S
Sample Date:			10/14/20	6/23/21	12/13/17	6/22/18	12/19/18	6/14/19	12/23/19	10/14/20
Lab Sample ID:			L2044349-02	L2134596-09	L1745946-06	L1823868-13	L1852851-04	L1925786-03	L1961461-01	L2044349-01
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	2.1	2	1.7	1.6	1.4	1.2
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	1.2	1.1	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-704S	MW-704S	MW-704S	MW-705S	MW-705S	MW-705S	MW-705S	MW-705S
Sample Date:			12/15/20	6/23/21	12/1/21	6/19/18	6/12/19	10/12/20	10/12/20	6/23/21
Lab Sample ID:			L2056063-09	L2134596-06	L2166365-01	L1823386-11	L1925347-15	L2043814-05	L2043814-06	410-46393-2
Sample Type:			N	N	N	N	N	N	FD	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l				ND	ND	ND	ND	ND
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND					
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND					
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND					
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND					
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND					
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND					
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND					
ACETONE	6300	ug/l	ND	ND	ND					
CHLOROBENZENE	100	ug/l	ND	ND	ND					
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND					
NAPHTHALENE	140	ug/l	ND	ND	ND					
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND					
TETRACHLOROETHENE	5	ug/l	ND	1	1.1					
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND					
TRICHLOROETHENE	5	ug/l	ND	ND	ND					
VINYL CHLORIDE	2	ug/l	ND	ND	ND					

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S
Sample Date:			12/13/17	3/22/18	3/22/18	6/21/18	9/28/18	9/28/18	12/20/18	3/18/19
Lab Sample ID:			L1745946-05	L1809946-05	L1809946-02	L1823868-05	L1839360-05	L1839360-01	L1852851-06	L1910551-02
Sample Type:			N	N	FD	N	N	FD	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	115	17.4	17.9	5.3	77.6	69.9	4.9	29.4
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l								
1,2,3-TRICHLOROBENZENE	NA	ug/l								
1,2,4-TRICHLOROBENZENE	70	ug/l								
1,2-DICHLOROETHENE	600	ug/l								
1,2-DICHLOROETHANE	5	ug/l								
1,3-DICHLOROBENZENE	100	ug/l								
1,4-DICHLOROBENZENE	5	ug/l								
ACETONE	6300	ug/l								
CHLOROBENZENE	100	ug/l								
CIS-1,2-DICHLOROETHENE	70	ug/l								
NAPHTHALENE	140	ug/l								
p-ISOPROPYLTOLUENE	NA	ug/l								
TETRACHLOROETHENE	5	ug/l								
TRANS-1,2-DICHLOROETHENE	100	ug/l								
TRICHLOROETHENE	5	ug/l								
VINYL CHLORIDE	2	ug/l								

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S
Sample Date:			3/18/19	6/11/19	6/11/19	9/10/19	9/10/19	12/23/19	12/23/19	3/5/20
Lab Sample ID:			L1910551-05	L1925347-01	L1925347-22	L1941176-06	L1941176-02	L1961461-02	L1961461-04	L2010088-02
Sample Type:			FD	N	FD	N	FD	N	FD	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	26.9	5.1	5.1	57.5	58.8	42.5	41.8	38.5
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l								
1,2,3-TRICHLOROBENZENE	NA	ug/l								
1,2,4-TRICHLOROBENZENE	70	ug/l								
1,2-DICHLOROETHENE	600	ug/l								
1,2-DICHLOROETHANE	5	ug/l								
1,3-DICHLOROBENZENE	100	ug/l								
1,4-DICHLOROBENZENE	5	ug/l								
ACETONE	6300	ug/l								
CHLOROBENZENE	100	ug/l								
CIS-1,2-DICHLOROETHENE	70	ug/l								
NAPHTHALENE	140	ug/l								
p-ISOPROPYLTOLUENE	NA	ug/l								
TETRACHLOROETHENE	5	ug/l								
TRANS-1,2-DICHLOROETHENE	100	ug/l								
TRICHLOROETHENE	5	ug/l								
VINYL CHLORIDE	2	ug/l								

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S	MW-706S
Sample Date:			3/5/20	10/13/20	12/14/20	12/14/20	3/18/21	3/18/21	6/24/21	9/21/21
Lab Sample ID:			L2010088-03	L2043814-10	L2056063-05	L2056063-03	L2113626-05	L2113626-06	410-46393-6	L2150919-01
Sample Type:			FD	N	N	FD	N	FD	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	41.4	80.9	13.2	12.4	11.4	11.5	96	17.2
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l								
1,2,3-TRICHLOROBENZENE	NA	ug/l								
1,2,4-TRICHLOROBENZENE	70	ug/l								
1,2-DICHLOROETHENE	600	ug/l								
1,2-DICHLOROETHANE	5	ug/l								
1,3-DICHLOROBENZENE	100	ug/l								
1,4-DICHLOROBENZENE	5	ug/l								
ACETONE	6300	ug/l								
CHLOROBENZENE	100	ug/l								
CIS-1,2-DICHLOROETHENE	70	ug/l								
NAPHTHALENE	140	ug/l								
p-ISOPROPYLTOLUENE	NA	ug/l								
TETRACHLOROETHENE	5	ug/l								
TRANS-1,2-DICHLOROETHENE	100	ug/l								
TRICHLOROETHENE	5	ug/l								
VINYL CHLORIDE	2	ug/l								

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-706S	MW-706S	MW-706S	MW-707D	MW-707D	MW-707D	MW-707D	MW-707D
Sample Date:			9/21/21	12/1/21	12/1/21	12/11/17	6/19/18	6/12/19	10/13/20	6/23/21
Lab Sample ID:			L2150919-02	L2166365-02	L2166365-04	L1745732-03	L1823386-09	L1925347-18	L2043814-07	L2134596-04
Sample Type:			FD	N	FD	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l	18.2	4.5	4.7					
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l				ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l				ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l				ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l				ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l				ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l				ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l				1.1	ND	ND	ND	ND
ACETONE	6300	ug/l				ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l				1.1	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l				ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l				ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l				ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l				2.6	1.4	1.1	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l				ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l				1.6	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l				ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-708B	MW-708B	MW-708D	MW-709D	MW-709D	MW-709D	MW-709D	MW-709D
Sample Date:			6/20/18	6/20/18	6/20/18	12/13/17	6/22/18	6/12/19	10/13/20	6/24/21
Lab Sample ID:			L1823386-20	L1823386-18	L1823386-21	L1745946-02	L1823868-12	L1925347-12	L2043814-11	L2134596-27
Sample Type:			N	FD	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	ND	1.3	1.4	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-709S	MW-709S	MW-709S	MW-709S	MW-709S	MW-709S	MW-709S	MW-709S
Sample Date:			12/13/17	3/22/18	6/21/18	9/28/18	12/20/18	3/18/19	6/12/19	9/10/19
Lab Sample ID:			L1745946-01	L1809946-04	L1823868-10	L1839360-06	L1852851-10	L1910551-01	L1925347-11	L1941176-08
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	3.7	1.9	3.2	3	2.9	3.2	2.8	2.5
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	17	9.4	19	16	13	15	14	13
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	90	59	77	76	69	86	63	70
TRANS-1,2-DICHLOROETHENE	100	ug/l	1	ND	1	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	52	29	49	47	39	49	39	39
VINYL CHLORIDE	2	ug/l	8.3	4.7	8	8.6	6.6	9.7	6.5	5.9

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-709S	MW-709S	MW-709S	MW-709S	MW-709S	MW-709S	MW-709S	MW-709S
Sample Date:			12/23/19	3/5/20	10/13/20	12/15/20	3/18/21	3/18/21	6/24/21	6/24/21
Lab Sample ID:			L1961461-12	L2010088-06	L2043814-12	L2056063-12	L2113626-01	L2113626-02	L2134596-22	L2134596-23
Sample Type:			N	N	N	N	N	FD	N	FD
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	2.3	2.6	1.9	2.1	2	1.9	2	1.9
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	10	11	9.7	10	9.9	9.6	10	10
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	57	65	42	53	54	54	54	46
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	33	39	28	30	29	28	30	28
VINYL CHLORIDE	2	ug/l	8.3	6.1	4.5	5.6	5.4	5.3	5.9	6.1

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-709S	MW-709S	MW-709S	MW-709S	MW-710D	MW-710M	MW-710M	MW-710M
Sample Date:			9/21/21	9/21/21	12/2/21	12/2/21	6/21/18	12/13/17	6/21/18	12/20/18
Lab Sample ID:			L2150919-03	L2150919-06	L2166365-06	L2166365-07	L1823868-11	L1745946-03	L1823868-09	L1852851-09
Sample Type:			N	FD	N	FD	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	1.7	1.6	1.7	1.7	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	8.1	8.1	8.5	8.2	ND	1.9	1.1	1.5
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	46	48	48	48	ND	6.2	3.7	4.4
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	22	23	25	25	ND	3.2	2.3	2.4
VINYL CHLORIDE	2	ug/l	4.5	4.6	4.2	4.2	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-710M	MW-710M	MW-710M	MW-710M	MW-710M	MW-710M	MW-710S	MW-710S
Sample Date:			6/12/19	12/23/19	10/15/20	12/15/20	6/24/21	12/2/21	12/13/17	6/21/18
Lab Sample ID:			L1925347-14	L1961461-06	L2044349-13	L2056063-11	L2134596-25	L2166365-10	L1745946-04	L1823868-07
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	1	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	3.3	3	3.2	2.5	1.8	2.3	2.7	1.9
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	1.8	2.2	2.1	1.8	1.2	1.2	1.9	1.8
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-710S	MW-710S	MW-710S	MW-711D	MW-711D	MW-711D	MW-711D	MW-711D
Sample Date:			6/12/19	10/15/20	6/24/21	12/12/17	6/21/18	6/12/19	10/13/20	6/23/21
Lab Sample ID:			L1925347-13	L2044349-12	L2134596-28	L1745732-08	L1823868-02	L1925347-19	L2043814-08	L2134596-10
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	1.2	ND	ND	1.1	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	1	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-711S	MW-712S	MW-713D	MW-713D	MW-713D	MW-713D	MW-713D	MW-713D
Sample Date:			6/20/18	6/21/18	12/12/17	6/22/18	12/20/18	12/20/18	6/11/19	12/23/19
Lab Sample ID:			L1823386-23	L1823868-04	L1745732-05	L1823868-14	L1852851-07	L1852851-02	L1925347-08	L1961461-08
Sample Type:			N	N	N	N	N	FD	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	8.3	11	15	16	17	13
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	32	28	29	31	28	25
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	12	13	13	14	14	12
VINYL CHLORIDE	2	ug/l	ND	ND	1	1.5	1.8	1.6	2.4	3.5

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-713D	MW-713D	MW-713D	MW-713D	MW-713D	MW-713D	MW-713S	MW-713S
Sample Date:			10/15/20	12/15/20	12/15/20	6/24/21	6/24/21	12/2/21	6/22/18	6/11/19
Lab Sample ID:			L2044349-10	L2056063-06	L2056063-02	L2134596-21	L2134596-29	L2166365-09	L1823868-19	L1925347-07
Sample Type:			N	N	FD	N	FD	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	29	10	9.1	5.4	6.2	2.6	3	3
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	14	22	21	15	14	16	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	1.4	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	12	9.7	9.1	6.6	6.2	5.7	ND	ND
VINYL CHLORIDE	2	ug/l	4	1.9	1.7	ND	ND	ND	2.2	1.8

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-713S	MW-713S	MW-713S	MW-714D	MW-714D	MW-714D	MW-714D	MW-714S
Sample Date:			10/15/20	10/15/20	6/24/21	6/20/18	6/11/19	10/13/20	6/23/21	12/12/17
Lab Sample ID:			L2044349-09	L2044349-11	L2134596-24	L1823386-22	L1925347-06	L2043814-13	L2134596-11	L1745732-04
Sample Type:			N	FD	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	3.3	3.4	3.4	ND	ND	ND	ND	13
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	3.8
VINYL CHLORIDE	2	ug/l	1.7	1.7	2	ND	ND	ND	ND	3.2

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-714S	MW-714S	MW-714S	MW-714S	MW-714S	MW-714S	MW-714S	MW-714S
Sample Date:			3/22/18	6/21/18	9/28/18	12/21/18	3/18/19	3/18/19	6/11/19	6/11/19
Lab Sample ID:			L1809946-03	L1823868-01	L1839360-03	L1852851-11	L1910551-04	L1910551-06	L1925347-05	L1925347-23
Sample Type:			N	N	N	N	N	FD	N	FD
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	14	2.7	9.3	12	11	12	6.2	6.3
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	2.8	ND	ND	ND	16	16	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	14	ND	ND	7.4	25	26	2.2	2.1
VINYL CHLORIDE	2	ug/l	1.9	ND	3.2	1.8	1.7	1.8	1	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-714S	MW-714S	MW-714S	MW-714S	MW-714S	MW-714S	MW-714S	MW-714S
Sample Date:			9/10/19	9/10/19	12/23/19	3/5/20	3/5/20	10/14/20	12/15/20	3/18/21
Lab Sample ID:			L1941176-05	L1941176-03	L1961461-07	L2010088-01	L2010088-04	L2044349-03	L2056063-08	L2113626-04
Sample Type:			N	FD	N	N	FD	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	4.2	4.1	9	9.8	10	ND	8.8	8
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	13	42	46	ND	1.1	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	23	43	46	ND	7.8	3.3
VINYL CHLORIDE	2	ug/l	2.5	2.5	2.1	1	1.1	ND	1.4	1.2

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			MW-714S	MW-714S	MW-714S	MW-715S	MW-715S	MW-715S	MW-715S	NP-MW-601
Sample Date:			6/23/21	9/21/21	12/2/21	6/22/18	6/14/19	10/14/20	6/23/21	12/11/17
Lab Sample ID:			L2134596-03	L2150919-04	L2166365-03	L1823868-16	L1925786-05	L2044349-06	L2134596-05	L1745732-02
Sample Type:			N	N	N	N	N	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	17
1,2,4-TRICHLOROBENZENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	34
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	1.6
1,4-DICHLOROBENZENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	2.6
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	8	5.6	9.6	ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	1.2	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	8.3	ND	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l	1.6	1.5	1.2	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

**Table 3. COC Detections for September - December 2021 Groundwater Monitoring Round
Bird Machine Company**

Location:			NP-MW-601	NP-MW-601	NP-MW-601	NP-MW-601	NP-MW-601	NP-MW-601	NP-MW-602	NP-MW-603
Sample Date:			3/22/18	6/19/18	6/12/19	10/12/20	10/12/20	6/24/21	6/19/18	6/19/18
Lab Sample ID:			L1809946-07	L1823386-03	L1925347-17	L2043814-02	L2043814-03	L2134596-19	L1823386-06	L1823386-04
Sample Type:			N	N	N	N	FD	N	N	N
Analyte	MMCL	Units								
Dissolved Metals										
ARSENIC	10	ug/l								
Volatile Organics										
1,1-DICHLOROETHENE	7	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	ug/l	12	11	8.2	12	14	11	ND	ND
1,2,4-TRICHLOROBENZENE	70	ug/l	20	11	3.1	10	12	5.6	ND	ND
1,2-DICHLOROETHENE	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-DICHLOROETHANE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DICHLOROBENZENE	100	ug/l	1.4	1.1	ND	1.2	1.5	ND	ND	ND
1,4-DICHLOROBENZENE	5	ug/l	2	1.2	ND	ND	1.2	ND	ND	ND
ACETONE	6300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CHLOROBENZENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
CIS-1,2-DICHLOROETHENE	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
NAPHTHALENE	140	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
p-ISOPROPYLTOLUENE	NA	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TETRACHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRANS-1,2-DICHLOROETHENE	100	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
TRICHLOROETHENE	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
VINYL CHLORIDE	2	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND = Not Detected

Green Fill = Detect > MMCL

Prepared by: AKN 1/10/2022

Checked by: JMM 1/12/2022

Appendix A

Public Notification Letter

Draft RMR Transmittal Letter Including PIP Mailing List Notice of Document Availability



Wood Massachusetts, Inc.
271 Mill Road, 3rd Floor
Chelmsford, MA 01824
USA

T: 978-692-9090

www.woodplc.com

February 17, 2022

Mr. Gerard Martin
Massachusetts Department of Environmental Protection
Southeast Regional Office
Bureau of Waste Site Cleanup
20 Riverside Drive, Lakeville, Massachusetts 02347

Re: Phase V Status and Remedial Monitoring Report
100 Neponset Street
Walpole, Massachusetts
RTN 4-3024222

Dear Mr. Martin,

On behalf of Baker Hughes, Wood Massachusetts, Inc. (Wood MA) is providing this Phase V Status and Remedial Monitoring Report (RMR) for the Bird Machine Company Site at 100 Neponset Street in Walpole, Massachusetts. Baker Hughes is submitting this RMR pursuant to 310 CMR 40.0890 of the Massachusetts Contingency Plan (MCP). The Site is listed as Release Tracking Number (RTN) 4-3024222 under the MCP.

This RMR documents the operation of a Comprehensive Remedial Action that is expected to be a Permanent Solution for the Site, and that was installed as described in the Phase IV Final Inspection Report. A Permanent Solution will achieve a condition of No Significant Risk for current and reasonably foreseeable site uses. As documented in the Class C-2 Response Action Outcome Statement submitted to the Massachusetts Department of Environmental Protection (MassDEP) on December 16, 2011, the Site already achieves the requirements of a Temporary Solution.

A copy of the Executive Summary of this report is attached to this letter, which is being sent by U.S. Mail to members of the Public Involvement Plan (PIP) mailing list. A paper copy of the RMR is being provided to the PIP repository at the Walpole Public Library (Telephone Number: 508-660-7341) at 143 School Street. The electronic report has been uploaded to the MassDEP (<http://public.dep.state.ma.us/SearchableSites/Search.asp>) and is also being provided today to the Town of Walpole for upload to their website: <http://www.walpole-ma.gov/economic-development/pages/bird-machine-information>.

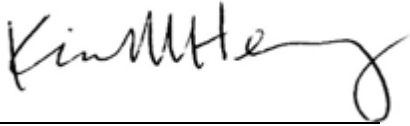
Comments on this RMR can be submitted to Chris Clodfelter of Baker Hughes at the following address:

Chris Clodfelter
Senior HS&E Specialist
Baker Hughes
12645 West Airport Boulevard
Sugar Land, Texas 77478-6120
Cell: (832) 668-0112



Please contact me at (978) 692-9090 if you have any questions regarding the Public Involvement process for this document

Sincerely,
Wood Massachusetts, Inc.



Kim M. Henry
LSP No. 7122

cc: Mr. Jim Johnson, Walpole Town Administrator
Ms. Melissa Ranieri, Walpole Health Director
Ms. Landis Hershey, Walpole Conservation Agent
Public Involvement Plan Mailing List

Enclosure: Copy of Phase V RMR Executive Summary



Copy of Phase V RMR Executive Summary

On behalf of Baker Hughes, Wood Massachusetts, Inc. (Wood MA), completed this Phase V Status and Remedial Monitoring Report (RMR) for the former Bird Machine Company (BMC) Site located in Walpole, Massachusetts. Baker Hughes is submitting this RMR pursuant to 310 CMR 40.0890 of the Massachusetts Contingency Plan (MCP). This RMR documents the operation of a Comprehensive Remedial Action that is expected to be a Permanent Solution for the Site, and that was installed as described in the Phase IV Final Inspection Report (FIR; AMEC 2012). A Permanent Solution will achieve a condition of No Significant Risk (NSR) for current and reasonably foreseeable site uses. As documented in the Class C-2 Response Action Outcome (RAO) Statement submitted to the Massachusetts Department of Environmental Protection (MassDEP) on December 16, 2011, the Site already achieves the requirements of a Temporary Solution (AMEC 2011a).

Release Abatement Measures (RAMs) have been conducted at several locations between 2005 and 2011 to reduce the mass and concentrations of contaminants at the Site. The Phase II Comprehensive Site Assessment (CSA) reports (AMEC 2011b, AMEC 2011c) indicate that a condition of NSR exists for all areas of the Site except groundwater, where some monitoring well concentrations exceed drinking water criteria (Massachusetts Maximum Contaminant Levels or MMCLs). It is unlikely that groundwater at the Site will be used for drinking water, but the Site is within a Potential Drinking Water Source Area designated by the Town of Walpole (Walpole 2007). Considering this designation, groundwater at the Site is categorized as GW-1 under the MCP. The CSA reports found no current pathway between Site contaminants and the Town's water supply wells to the northeast, but the potential for contaminant movement from a portion of the Site warrants further monitoring.

Areas of groundwater contamination exceeding MMCLs were identified for arsenic, chlorinated Volatile Organic Compounds (cVOCs), and 1,4-dichlorobenzene (DCB). A Monitored Natural Attenuation (MNA) remedy consisting of active monitoring of natural processes was selected to achieve clean up goals and was installed in accordance with Phase IV of the MCP. MNA is considered an Active Remedial Monitoring Program under the MCP and has been designed and constructed to provide a Permanent Solution that achieves a condition of NSR, as described in the FIR (AMEC 2012).

The August 2013 Phase V Status and Remedial Monitoring Report (RMR; AMEC 2013a) coincided with one year of initial process monitoring as described in the FIR. At that time, it was determined that initial process monitoring had confirmed that key MNA processes were underway and a transition to long-term performance monitoring was appropriate. Long-term monitoring is designed to confirm that site conditions remain suitable for MNA, and that overall contaminant concentrations and mass are decreasing within a reasonable timeframe.

The long-term monitoring program performed until 2018 included quarterly sampling at six locations within the plumes that have had significant fluctuations in recent contaminant concentrations above the MMCLs, semi-annual sampling at nine other wells within the horizontal and vertical extent of the plume areas where previous quarterly sampling shows little variation in concentrations, and annual sampling at 23 wells along the plume lateral or vertical edges where concentrations are below MMCLs. The results over the first five years of monitoring showed consistent results with concentrations at many wells below ½ the MMCL, which is the selected remedial goal for the Site. As a result, some monitoring wells were selected for reduced sampling frequency, or removal from the long-term monitoring program. These changes were implemented beginning in the third quarter of 2018. The current Operation, Maintenance, and Monitoring

(OMM) program is summarized in **Table 1** and includes performance of long-term monitoring in March (quarterly), June (quarterly, semi-annual, and annual), September (quarterly), and December (quarterly and semi-annual). Analytes for long-term monitoring consist of the contaminants exceeding MMCLs and their primary breakdown products.

Groundwater sampling results from the September 2021 and December 2021 rounds indicate that MNA processes continue to reduce the overall mass and concentrations of contaminants at the Site. Concentrations within the DCB plume have continued to decline steadily, and the remedial goals have now been achieved for all wells within the plume. While some wells in the interior of the cVOC plume continue to show fluctuating concentrations above the MMCL, the plume is stable or contracting as evidenced by the overall decreasing contaminant trends. Recent arsenic results indicate that the overall plume is stable (i.e. not expanding), however they also show that concentrations within the plume interior can vary significantly. No significant changes to the Conceptual Site Model (CSM) are warranted based on the latest measurements.



Appendix B

BWSC Transmittal Form

(To be included in paper copy following eDEP submittal of final version)



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking Number

4 - 3024222

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

A. SITE LOCATION:

1. Site Name: BAKER HUGHES INC FMLY BIRD MACHINE CO
2. Street Address: 100 NEPONSET ST
3. City/Town: WALPOLE 4. ZIP Code: _____

5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category:

- a. Tier I b. Tier ID c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

- 1. Submit a **Phase I Completion Statement**, pursuant to 310 CMR 40.0484.
- 2. Submit a **Revised Phase I Completion Statement**, pursuant to 310 CMR 40.0484.
- 3. Submit a **Phase II Scope of Work**, pursuant to 310 CMR 40.0834.
- 4. Submit an **interim Phase II Report**. This report does not satisfy the response action deadline requirements in 310 CMR 40.0500.
- 5. Submit a **final Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.
- 6. Submit a **Revised Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.
- 7. Submit a **Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.
- 8. Submit a **Revised Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.
- 9. Submit a **Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.
- 10. Submit a **Modified Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.
- 11. Submit an **As-Built Construction Report**, pursuant to 310 CMR 40.0875.
- 12. Submit a **Phase IV Status Report**, pursuant to 310 CMR 40.0877.
- 13. Submit a **Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.

Specify the outcome of Phase IV activities: (check one)

- a. Phase V Operation, Maintenance or Monitoring of the Comprehensive Remedial Action is necessary to achieve a Permanent or Temporary Solution.
- b. The requirements of a Permanent Solution have been met. A completed Permanent Solution Statement and Report (BWSC104) will be submitted to DEP.
- c. The requirements of a Temporary Solution have been met. A completed Temporary Solution Statement and Report (BWSC104) will be submitted to DEP.



COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT

Release Tracking Number

4 - 3024222

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

14. Submit a **Revised Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.
15. Submit a **Phase V Status Report**, pursuant to 310 CMR 40.0892.
16. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)
- a. Type of Report: (check one) i. Initial Report ii. Interim Report iii. Final Report
- b. Frequency of Submittal: (check all that apply)
- i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
- ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
- iii. A Remedial Monitoring Report(s) submitted every six months, concurrent with a Status Report.
- iv. A Remedial Monitoring Report(s) submitted annually, concurrent with a Status Report.
- c. Status of Site: (check one) i. Phase IV ii. Phase V iii. Remedy Operation Status iv. Temporary Solution
- d. Number of Remedial Systems and/or Monitoring Programs: 1
- A separate BWSC108A, CRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.
17. Submit a **Remedy Operation Status**, pursuant to 310 CMR 40.0893.
18. Submit a **Status Report to maintain a Remedy Operation Status**, pursuant to 310 CMR 40.0893(2).
19. Submit a **Transfer and/or a Modification of Persons Maintaining a Remedy Operation Status (ROS)**, pursuant to 310 CMR 40.0893(5) (check one, or both, if applicable).
- a. Submit a Transfer of Persons Maintaining an ROS (the transferee should be the person listed in Section D, "Person Undertaking Response Actions").
- b. Submit a Modification of Persons Maintaining an ROS (the primary representative should be the person listed in Section D, "Person Undertaking Response Actions").
- c. Number of Persons Maintaining an ROS not including the primary representative: _____
20. Submit a **Termination of a Remedy Operation Status**, pursuant to 310 CMR 40.0893(6).(check one)
- a. Submit a notice indicating ROS performance standards have not been met. A plan and timetable pursuant to 310 CMR 40.0893(6)(b) for resuming the ROS are attached.
- b. Submit a notice of Termination of ROS.
21. Submit a **Phase V Completion Statement**, pursuant to 310 CMR 40.0894.
- Specify the outcome of Phase V activities: (check one)
- a. The requirements of a Permanent Solution have been met. A completed Permanent Solution Statement and Report (BWSC104) will be submitted to DEP.
- b. The requirements for a Temporary Solution have been met. A completed Temporary Solution Statement and Report (BWSC104) will be submitted to DEP.
22. Submit a **Revised Phase V Completion Statement**, pursuant to 310 CMR 40.0894.
23. Submit a **Temporary Solution Status Report**, pursuant to 310 CMR 40.0898.
24. Submit a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).
- a. Status of Site: (check one)
- i. Phase IV ii. Phase V iii. Remedy Operation Status iv. Temporary Solution



COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT

Release Tracking Number

4 - 3024222

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

D. PERSON UNDERTAKING RESPONSE ACTIONS:

1. Check all that apply: a. change in contact name b. change of address c. change in the person undertaking response actions
2. Name of Organization: BAKER HUGHES INC
3. Contact First Name: CHRIS 4. Last Name: CLODFELTER
5. Street: 12645 WEST AIRPORT BOULEVARD 6. Title: GLOBAL REMEDIATION LEAD
7. City/Town: SUGAR LAND 8. State: TX 9. ZIP Code: 774786120
10. Telephone: 8326680112 11. Ext: _____ 12. Email: _____

E. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTIONS: Check here to change relationship

1. RP or PRP a. Owner b. Operator c. Generator d. Transporter
 e. Other RP or PRP Specify: _____
2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
4. Any Other Person Undertaking Response Actions Specify Relationship: _____

F. REQUIRED ATTACHMENT AND SUBMITTALS:

1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of any Phase Reports to DEP.
3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase III Remedial Action Plan.
4. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase IV Remedy Implementation Plan.
5. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of any field work involving the implementation of a Phase IV Remedial Action.
6. If submitting a Transfer of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for the person making this submittal (transferee) is attached.
7. If submitting a Modification of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for each new person making this submittal is attached.
8. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to: BWSC.eDEP@state.ma.us.
9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking Number

4 - 3024222

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

G. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTIONS:

1. I, CHRIS CLODFELTER, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

>if Section B indicates that this is a **Modification of a Remedy Operation Status (ROS)**, I attest under the pains and penalties of perjury that I am fully authorized to act on behalf of all persons performing response actions under the ROS as stated in 310 CMR 40.0893(5)(d) to receive oral and written correspondence from MassDEP with respect to performance of response actions under the ROS, and to receive a statement of fee amount as per 4.03(3).

I understand that any material received by the Primary Representative from MassDEP shall be deemed received by all the persons performing response actions under the ROS, and I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate or incomplete information.

2. By: CHRIS CLODFELTER 3. Title: GLOBAL REMEDIATION LEAD
Signature

4. For: BAKER HUGHES INC 5. Date: 2/17/2022
(Name of person or entity recorded in Section D) (mm/dd/yyyy)

6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. Email: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Received by DEP on 2/21/2022 10:32:27 AM

Supporting Information
Remedy Operation Status Report
RTN 4-3024222
Former Bird Machine Company Site
Walpole, MA

Supporting information for the Remedy Operation Status Report is provided in the Phase V Status and Remedial Monitoring Report dated February 17, 2022.



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup
CRA REMEDIAL MONITORING REPORT

BWSC108 -A

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: of

-

A. DESCRIPTION OF ACTIVE OPERATION AND MAINTENANCE ACTIVITY:

1. Type of Active Operation and Maintenance Activity: (check all that apply)

- a. Active Remedial System: (check all that apply)
 - i. NAPL Recovery
 - ii. Soil Vapor Extraction/Bioventing
 - iii. Vapor-phase Carbon Adsorption
 - iv. Groundwater Recovery
 - v. Dual/Multi-phase Extraction
 - vi. Aqueous-phase Carbon Adsorption
 - vii. Air Stripping
 - viii. Sparging/Biosparging
 - ix. Cat/Thermal Oxidation
 - x. Other Describe: _____
- b. Active Exposure Pathway Elimination Measure
 Active Exposure Pathway Mitigation System to address (check one): i. Indoor Air ii. Drinking Water
- c. Application of Remedial Additives: (check all that apply)
 - i. To the Subsurface
 - ii. To Groundwater (Injection)
 - iii. To the Surface
- d. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section G5)
 - i. Reactive Wall
 - ii. Natural Attenuation
 - iii. Other Describe: _____

2. Mode of Operation: (check one)

- a. Continuous
- b. Intermittent
- c. Pulsed
- d. One-time Event Only
- e. Other: _____

3. System Effluent/Discharge: (check all that apply)

- a. Sanitary Sewer/POTW
- b. Groundwater Re-infiltration/Re-injection: (check one)
 - i. Downgradient
 - ii. Upgradient
- c. Vapor-phase Discharge to Ambient Air: (check one)
 - i. Off-gas Controls
 - ii. No Off-gas Controls
- d. Drinking Water Supply
- e. Surface Water (including Storm Drains)
- f. Other Describe: _____

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 7/1/2021 To: 12/31/2021
 (mm/dd/yyyy) (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

- a. System Startup: (if applicable)
 - i. Days 1, 3, 6, and then weekly thereafter, for the first month.
 - ii. Other Describe: _____
- b. Post-system Startup (after first month) or Monitoring Program:
 - i. Monthly
 - ii. Quarterly
 - iii. Annually
 - iv. Other Describe: _____

3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

- 1. NPDES: (check one)
 - a. Remediation General Permit
 - b. Individual Permit
 - c. Emergency Exclusion
 Effective Date of Permit: _____
 (mm/dd/yyyy)
- 2. MCP Performance Standard MCP Citations(s): _____
- 3. DEP Approval Letter Date of Letter: _____
 (mm/dd/yyyy)
- 4. Other Describe: _____



CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 1 of 1

4 - 3024222

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

- 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.
 - a. Name: _____ b. Grade: _____
 - c. License No: _____ d. License Exp. Date: _____
(mm/dd/yyyy)
- 2. Not Required
- 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

- 1. The Active Remedial System was functional one or more days during the Reporting Period.
 - a. Days System was Fully Functional: _____ b. GW Recovered (gals): _____
 - c. NAPL Recovered (gals): _____ d. GW Discharged (gals): _____
 - e. Avg. Soil Gas Recovery Rate (scfm): _____ f. Avg. Sparging Rate (scfm): _____
- 2. Remedial Additives: (check all that apply)
 - a. No Remedial Additives applied during the Reporting Period.
 - b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)
 - i. Nitrogen/Phosphorus:
 - ii. Peroxides:

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

iii. Microorganisms:

iv. Other:

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

i. Permanganates:

ii. Peroxides:

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

iii. Persulfates:

iv. Other:

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units



CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 1 of 1

4 - 3024222

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)

d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: _____ b. Total Number of Days of Unscheduled Shutdowns: _____

c. Reason(s) for Unscheduled Shutdowns: _____

2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: _____ b. Total Number of Days of Scheduled Shutdowns: _____

c. Reason(s) for Scheduled Shutdowns: _____

3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: _____
(mm/dd/yyyy)

b. No Further Effluent Discharges.

c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

d. No Further Submittals Planned.

e. Other: Describe: _____

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

**Supporting Information
Remedial Monitoring Report
RTN 4-3024222
Former Bird Machine Company Site
Walpole, MA**

Supporting information for the Remedial Monitoring Report is provided in the Phase V Status and Remedial Monitoring Report dated February 17, 2022.

The logo for 'wood.' is located in the top right corner. It consists of the word 'wood.' in a dark blue, lowercase, sans-serif font. The period is a solid dot. The background of the page features large, light gray curved shapes that frame the central text.

Appendix C
Sampling Logs

FIELD INSTRUMENT TUBS CALIBRATION RECORD

PROJECT NAME: BAKER HUGHES BIRD MACHINE TASK NO: 0005 DATE: 9/21/21
 PROJECT NUMBER: 36511800 8 7 FIELD CREW: JGP / SPM
 PROJECT LOCATION: WALPOLE, MA SAMPLER NAME: JACE PETERSON
 WEATHER CONDITIONS (AM): SUNNY, 54°F SAMPLER SIGNATURE: [Signature]
 WEATHER CONDITIONS (PM): CLUDY, 73°F CHECKED BY: [Signature] DATE: 9/21/21

MULTI-PARAMETER WATER QUALITY METER

METER TYPE: <u>YSI</u>		AM CALIBRATION			PM CALIBRATION CHECK		
MODEL NO. <u>556MPS</u>		Start Time: <u>0820</u>	End Time: <u>0905</u>	Start Time: <u>1234</u>	End Time: <u>1248</u>		
UNIT ID NO. <u>10E100342</u>		Standard Value	Meter Value	% Acceptance Criteria (AM)	Standard Value	Meter Value	% Acceptance Criteria (PM)
pH (4)	SU	4.0	<u>4.0</u>	+/- 0.1 pH Units			
pH (7)	SU	7.0	<u>7.0</u>	+/- 0.1 pH Units	7.0	<u>6.77</u>	+/- 0.3 pH Units
pH (10)	SU	10.0	<u>10.10</u>	+/- 0.1 pH Units			
Redox	+/- mV	238	<u>238</u>	+/- 10 mV	238	<u>231.0</u>	+/- 10 mV
Conductivity	uS/cm	1000	<u>999</u>	+/- 3% of standard	1000	<u>1010</u>	+/- 5% of standard
DO (saturated)	%	100	<u>116.30</u>	+/- 2% of standard		<u>110.8</u>	
DO (saturated) mg/L ¹ (see Chart 1)			<u>11.30</u>	+/- 0.2 mg/L		<u>9.72</u>	+/- 0.5 mg/L of standard
DO (<0.1)	mg/L	<0.1	<u>-</u>	< 0.5 mg/L	DO (<0.1)	<u>-</u>	
Temperature	°C		<u>17.5</u>			<u>22.8</u>	
Baro. Press.	mmHg		<u>768.3</u>			<u>772.9</u>	

TURBIDITY METER		Units	Standard Value	Meter Value	Standard Value	Meter Value	% Acceptance Criteria (PM)
METER TYPE: <u>HACH</u>							
MODEL NO. <u>2100 Q</u>							
UNIT ID NO. <u>13120C029873</u>	Standard	NTU	10	<u>10.5</u>	10	<u>11.1</u>	+/- 0.3 NTU of stan.
	Standard	NTU	20	<u>21.8</u>	20	<u>21.7</u>	+/- 5% of standard
	Standard	NTU	100	<u>98.6</u>	100	<u>98.3</u>	+/- 5% of standard
	Standard	NTU	800	<u>806</u>	800	<u>802</u>	+/- 5% of standard

PHOTOIONIZATION DETECTOR		Background	ppmv	<0.1	<0.1	within 5 ppmv of BG
METER TYPE: _____						
MODEL NO. _____						
UNIT ID NO. _____	Span Gas	ppmv	100		100	+/- 10% of standard

O ₂ -LEL 4 GAS METER		Methane	%	50	50	+/- 10% of standard
METER TYPE: _____						
MODEL NO. _____		O ₂	%	20.9	20.9	+/- 10% of standard
UNIT ID NO. _____		H ₂ S	ppmv	25	25	+/- 10% of standard
		CO	ppmv	50	50	+/- 10% of standard

OTHER METER						See Notes Below for Additional Information
METER TYPE: _____						
MODEL NO. _____						
UNIT ID NO. _____						

- Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
 Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**

MATERIALS RECORD		Cal. Standard Lot Number	Exp. Date
Deionized Water Source: _____		pH (4) <u>16F619</u>	<u>06/23</u>
Lot#/Date Produced: _____		pH (7) <u>16E003</u>	<u>06/23</u>
Trip Blank Source: _____ Lab _____		pH (10) <u>16C278</u>	<u>05/23</u>
Sample Preservatives Source: _____ Lab _____		ORP <u>06L348</u>	<u>09/21</u>
Disposable Filter Type: <u>0.45um cellulose</u>		Conductivity <u>14F703</u>	<u>06/22</u>
Calibration Fluids / Standard Source:		10 Turb Stan <u>A1123</u>	<u>08/22</u>
- DO Calibration Fluid (<0.1 mg/L) <u>Portland FOS</u>		20 Turb Stan <u>A1120</u>	<u>08/22</u>
- Other _____		100 Turb Stan <u>A1144</u>	<u>08/22</u>
- Other _____		800 Turb Stan <u>A1138</u>	<u>08/22</u>
- Other _____		PID Span Gas _____	
		O ₂ -LEL Span Gas _____	
		DO _____	

NOTES:

wood.

* Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-FieldCal) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria (obtained from instrument) specific manufacturer recommendations.
 ** If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
 1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-FieldCal) dated 1/19/2010.

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: B.V. Machine Water Hubs TASK NO: .0005 DATE: 9/21/21
 PROJECT NUMBER: 3651 FIELD CREW: SPA/JEP
 PROJECT LOCATION: Waltham, MA SAMPLER NAME: Spidey
 WEATHER CONDITIONS (AM): 5:30 Partly Cloudy SAMPLER SIGNATURE: [Signature]
 WEATHER CONDITIONS (PM): 5:10 Mostly Cloudy CHECKED BY: _____ DATE: _____

MULTI-PARAMETER WATER QUALITY METER

		AM CALIBRATION			PM CALIBRATION CHECK		
METER TYPE		Start Time	End Time	Start Time	End Time		
METER TYPE	<u>YST</u>	<u>0824</u>	<u>0901</u>	<u>1240</u>	<u>1309</u>		
MODEL NO.	<u>556 MS</u>						
UNIT ID NO.	<u>5D10/636</u>						
	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
pH (4)	SU	4.0	<u>4.0</u>	+/- 0.1 pH Units	7.0	<u>6.0</u>	+/- 0.3 pH Units
pH (7)	SU	7.0	<u>7.0</u>	+/- 0.1 pH Units			
pH (10)	SU	10.0	<u>9.92</u>	+/- 0.1 pH Units			
Redox	+/- mV	<u>238</u> 240	<u>238</u>	+/- 10 mV	<u>238</u> 240	<u>294.3</u>	+/- 10 mV
Sp. Conductivity	µS/cm	<u>1000</u> 1112	<u>1000</u>	+/- 3% of standard	<u>1000</u> 1112	<u>1087</u>	+/- 5% of standard
DO (saturated)	%	100	<u>101.1</u>	+/- 2% of standard		<u>100.3</u>	%
DO (saturated) mg/L	^{1000 Chart 1}	—	<u>9.40</u>	+/- 0.2 mg/L		<u>8.23</u>	+/- 0.5 mg/L of sat. value
DO (<0.1)	mg/L	<0.1	<u>—</u>	<0.5 mg/L	<u>—</u>	<u>—</u>	<0.5 mg/L
Temperature	°C		<u>18.98</u>			<u>24.99</u>	°C
Baro. Press.	mmHg		<u>2681.3</u>			<u>272.9</u>	mmHg

TURBIDITY METER		Units	Standard Value	Meter Value	Standard Value	Meter Value	*Acceptance Criteria (PM)
METER TYPE	<u>Coq Tech</u>						
MODEL NO.	<u>+46611/1010</u>						
UNIT ID NO.	<u>1909276</u>						
	Standard	NTU	10	<u>0.02</u>	10	<u>0.02</u>	+/- 5% of standard
	Standard	NTU	20	<u>17.9</u>	20	<u>15.0</u>	
	Standard	NTU	100	<u>95.6</u>	100	<u>90.6</u>	
	Standard	NTU	800	<u>773</u>	800	<u>760</u>	

PHOTOIONIZATION DETECTOR		Background	ppmv	<0.1	<0.1	within 5 ppmv of BG
METER TYPE						
MODEL NO.						
UNIT ID NO.	Span Gas	ppmv	100		100	+/- 10% of standard

O ₂ -LEL 4 GAS METER		Methane	%	50	50	+/- 10% of standard
METER TYPE						
MODEL NO.		O ₂	%	20.9	20.9	
UNIT ID NO.		H ₂ S	ppmv	25	25	
		CO	ppmv	50	50	

OTHER METER							See Notes Below for Additional Information
METER TYPE							
MODEL NO.							
UNIT ID NO.							

Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
 Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**

MATERIALS RECORD		Cal. Standard Lot Number	Exp. Date
Deionized Water Source:		pH (4) <u>1GF619</u>	<u>6/23</u>
Lot# / Date Produced:		pH (7) <u>1GF003</u>	<u>6/23</u>
Trip Blank Source:	Lab	pH (10) <u>1GF278</u>	<u>5/23</u>
Sample Preservatives Source:	Lab	ORP <u>0G1362</u>	<u>9/21</u>
Disposable Filter Type:	0.45µm	Conductivity <u>1GF203</u>	<u>6/22</u>
Calibration Fluids / Standard Source:		10 Turb. Stan. <u>239D</u>	<u>05/21</u>
- DO Calibration Fluid (<0.1 mg/L)		20 Turb. Stan. <u>239D</u>	<u>05/21</u>
- Other		100 Turb. Stan. <u>239D</u>	<u>05/21</u>
- Other		800 Turb. Stan. <u>239D</u>	<u>05/21</u>
- Other		PID Span Gas	
- Other		O ₂ -LEL Span Gas	
		DO	

NOTES: pH, ORP, and conductivity did not calibrate in PM calibration check.



* - Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP Field Calibration) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.
 ** - If meter reading is not within acceptance criteria, clean/replace probe and recalibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
 1 - DO Saturated standard value is calculated based on Oxygen Solubility in Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP Field Calibration), dated 1/19/2010.

FIELD DATA RECORD - LOW FLOW GROUNDWATER MONITORING

PROJECT: Baker Hughes Bitumane ID: 4B-MW-374
 SAMPLE ID: 4B-MW-374 DATE: 9/21/11
 TIME START: 1120 END: 1232 OPERATOR: 3651140089 BOTTLE TIME: 1230

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED: MEASUREMENT POINT: TOP OF WELL RISER TOP OF PROTECTIVE CASING OTHER

INITIAL DEPTH TO WATER: 5.50 FT. WELL DEPTH (TOR): 27.03 FT. PROTECTIVE CASING / WELL DIFFERENCE: 0.27 FT.

FINAL DEPTH TO WATER: 5.37 FT. SCREEN LENGTH: 10 FT. WELL DIAMETER: 2.0 IN.

DRAWDOWN VOLUME: 0.01 GAL. RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.003

TOTAL VOL PURGED: 3.24 GAL. (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

PROTECTIVE CASING / WELL DIFFERENCE: 0.27 FT.

WELL DIAMETER: 2.0 IN.

WELL INTEGRITY: YES NO NA
 CAP:
 CASING LOCKED:
 COLLAR:

DISCHARGE TIMER SETTING: — SEC.

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP (deg C) (3%)	SPEC COND (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS O2 (mg/L) (10%) (+0.5)	TURBIDITY (NTU) (10%) (+5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1120	5.30	200	Start Pump						~25'	
1125	5.34	200	19.87	110	5.84	7.15	0.02	53.1		
1135	5.35	200	18.74	116	5.75	4.76	0.02	35.5		
1140	5.35	200	18.58	132	5.74	4.64	0.02	36.9		
1145	5.35	200	18.71	139	5.73	1.49	0.02	51.4		
1150	5.36	200	18.11	152	5.66	4.44	0.02	49.0		
1155	5.36	200	17.74	163	5.65	0.30	0.02	51.7		
1200	5.36	200	17.79	173	5.65	0.00	0.02	52.1		
1205	5.37	200	17.73	178	5.62	2.32	0.02	54.0		
1210	5.37	200	17.97	182	5.59	3.10	2.75	59.9		
1215	5.37	200	17.73	183	5.31	3.08	0.02	69.0		
1220	5.37	200	16.00	183	5.31	3.04	1.67	73.0		
1225	5.37	200	18.09	184	5.30	3.01	0.02	76.7		
1230	5.37	200	Collect Sample							
1232	Pump Off									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEDPUMP

TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE

TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)

TYPE OF BLADDER MATERIAL: TEFLON OTHER

ANALYTICAL PARAMETERS

To Be Collected:

VOC METHOD NUMBER: 8260 PRESERVATION METHOD: HCL VOLUME REQUIRED: 3 X 40cc vials SAMPLE COLLECTED: VOC

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES NO

NUMBER OF GALLONS GENERATED: 3.24

SIGNATURE: [Signature] SPM

NOTES:



Prepared by
Checked by

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: BIRD MACHINE
 WELLS: MW-7095
 SAMPLE ID: MW-7095
 SITE TYPE: INDUSTRIAL MCP
 DATE: 9/21/21
 TIME START: 0930 END: 1035
 JOB NUMBER: 3651180087
 BOTTLE TIME: 1035

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED: DUP/MS/MSD
 MEASUREMENT POINT: TOP OF WELL RISER
 TOP OF PROTECTIVE CASING
 OTHER
 PROTECTIVE CASING STICKUP (FROM GROUND): SEE SURVEY FT
 PROTECTIVE CASING / WELL DIFFERENCE: SEE SURVEY FT

INITIAL DEPTH TO WATER: 3.24 FT
 WELL DEPTH (TD): 15.10 FT
 PID AMBIENT AIR: - PPMV
 WELL DIAMETER: 2.0 IN

FINAL DEPTH TO WATER: 3.24 FT
 SCREEN LENGTH: 10 FT
 PID WELL MOUTH: - PPMV
 WELL INTEGRITY: CAP YES NO N/A
 CASKING LOCKED YES NO N/A
 COLLAR YES NO N/A

DRAWDOWN VOLUME: 0.00 GAL
 (initial - final x 0.16 (2-inch) or x 0.65 (4-inch))
 RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.00
 PRESSURE TO PUMP: - PSI

TOTAL VOL PURGED: 2.70 GAL
 (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)
 REFILL TIMER SETTING: - SEC
 DISCHARGE TIMER SETTING: - SEC

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0-3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP (deg C) (3%)	SPEC COND (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS	
0930	3.24	160	BEGIN	PURGE					~13'		
0935	3.24	160	17.2	305.6	7.29	0.31	18.0	151.5			
0945	3.24	160	17.4	279.7	6.46	0.31	34.5	90.1			
0955	3.24	160	17.4	278.8	6.22	0.12	34.0	102.0			
1005	3.24	160	17.6	276.6	6.18	0.09	28.6	103.4			
1015	3.24	160	17.5	273.4	6.16	0.04	14.6	103.5			
1020	3.24	160	17.5	272.1	6.14	0.05	12.1	103.9			
1025	3.24	160	17.5	270.4	6.13	0.05	11.1	104.1			
1030	3.24	160	17.5	268.5	6.12	0.05	11.4	103.9			
1035	3.24	160	COLLECT SAMPLE							13'	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED PUMP
 TYPE OF TUBING: LDPE
 TYPE OF PUMP MATERIAL: SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON
 OTHER

ANALYTICAL PARAMETERS

To Be Collected: VOCs
 METHOD NUMBER: 8260
 PRESERVATION METHOD: HCL
 VOLUME REQUIRED: 3 x 40ml VOA VIAL
 SAMPLE COLLECTED:

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES NO
 NUMBER OF GALLONS GENERATED: 2.70
 SIGNATURE: *[Signature]*

NOTES:

wood.
 Prepared by
 Checked by

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: BIRD MACHINE WELLS ID: MW-7145
 SAMPLE ID: MW-7145 SITE TYPE: INDUSTRIAL MCP DATE: 9/21/21
 TIME START: 1115 END: 1210 JOB NUMBER: 365118 0087 BOTTLE TIME: 1210

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED:

MEASUREMENT POINT: TOP OF WELL RISER
 TOP OF PROTECTIVE CASING
 OTHER

PROTECTIVE CASING STICKUP (FROM GROUND): SEE SURVEY FT.
 PROTECTIVE CASING / WELL DIFFERENCE: SEE SURVEY FT.

INITIAL DEPTH TO WATER: 7.45 FT
 FINAL DEPTH TO WATER: 7.59 FT
 DRAWDOWN VOLUME (initial - final) x 0.16 (2-inch) or x 0.65 (4-inch): 0.02 GAL
 TOTAL VOL PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml): 2.00 GAL

WELL DEPTH (TOR): 12.98 FT
 SCREEN LENGTH: 10 FT
 RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.010

PID AMBIENT AIR: - PPMV
 PID WELL MOUTH: - PPMV
 PRESSURE TO PUMP: - PSI
 REFILL TIMER SETTING: - SEC

WELL DIAMETER: 20 IN
 WELL INTEGRITY: CAP YES NO N/A
 CASING LOCKED YES NO N/A
 COLLAR YES NO N/A
 DISCHARGE TIMER SETTING: - SEC

PURGE DATA

TIME (S min)	DEPTH TO WATER (ft) (0.3 ft)	PURGE RATE (ml/min) (100-400)	TEMP (deg C) (2%)	SPEC COND (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1115	7.45	140	BEGIN	PURGE					~11'	
1120	7.45	140	19.7	211.6	6.65	5.63	19.2	-39.8	↑	
1130	7.45	140	19.7	205.9	6.57	5.13	5.91	-78.1		
1140	7.45	140	19.9	204.5	6.63	4.58	5.99	-81.8		
1145	7.45	140	19.8	205.7	6.65	4.42	4.98	-83.5		
1155	7.48	140	19.7	205.3	6.62	3.82	3.54	-80.6		
1200	7.55	140	19.8	204.9	6.63	3.72	3.43	-81.8		
1205	7.58	140	19.8	204.5	6.65	3.46	3.26	-82.2	↓	
1210	7.58	140	COLLECT SAMPLE						~11'	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: GED BLADDER SIMCO BLADDER GED PUMP

TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE

TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dessand)

TYPE OF BLADDER MATERIAL: TEFLON OTHER

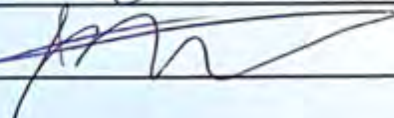
ANALYTICAL PARAMETERS

To Be Collected

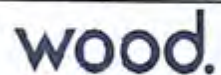
	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260	HCL	3X40ml VOA VIAL	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES NO NUMBER OF GALLONS GENERATED: 2.00

SIGNATURE: 

NOTES:



Prepared by:
Checked by:

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: BAKER Woods Bird Machine
 PROJECT NUMBER: 2657180087, 0004
 PROJECT LOCATION: W. 1101e MA
 WEATHER CONDITIONS (AM): 46° Fair
 WEATHER CONDITIONS (PM): 39° Clear

TASK NO: .0005 DATE: 12/1/21
 FIELD CREW: SJM, JEP
 SAMPLER NAME: Seap Ponds
 SAMPLER SIGNATURE: [Signature]
 CHECKED BY: _____ DATE: _____

MULTI-PARAMETER WATER QUALITY METER

METER TYPE		AM CALIBRATION		
MODEL NO.		Start Time:	End Time:	
UNIT ID NO.		Standard Value	Meter Value	*Acceptance Criteria (AM)
pH (4)	SU	4.0	<u>4.00</u>	+/- 0.1 pH Units
pH (7)	SU	7.0	<u>7.00</u>	+/- 0.1 pH Units
pH (10)	SU	10.0	<u>-</u>	+/- 0.1 pH Units
Redox	+/- mV	240 <u>235</u>	<u>239</u>	+/- 10 mV
Sp. Conductivity	µS/cm	1413 <u>1000</u>	<u>1000</u>	+/- 3% of standard
DO (saturated)	%	100	<u>99.5</u>	+/- 2% of standard
DO (saturated)	mg/L (see Chart 1)	-	<u>11.80</u>	+/- 0.2 mg/L
DO (<0.1)	mg/L	<0.1	<u>-</u>	< 0.5 mg/L
Temperature	°C	-	<u>10.7</u>	-
Baro. Press.	mmHg	-	<u>757.1</u>	-

PM CALIBRATION CHECK		
Start Time:	End Time:	
Standard Value	Meter Value	*Acceptance Criteria (PM)
7.0	<u>6.71</u>	+/- 0.3 pH Units
240	<u>236.1</u>	+/- 10 mV
1413	<u>1048</u>	+/- 5% of standard
-	<u>99.4</u>	%
-	<u>11.53</u>	+/- 0.5 mg/L of sat. value
DO (<0.1)	<u>-</u>	< 0.5 mg/L
-	<u>9.3°C</u>	°C
-	<u>756.4</u>	mmHg

TURBIDITY METER		Units	Standard Value	Meter Value	*Acceptance Criteria (PM)
METER TYPE	<u>HACH</u>				
MODEL NO.	<u>2100 Q</u>				
UNIT ID NO.	<u>13080 Col 7787</u>				
		Standard	NTU	10	<u>9.58</u>
		Standard	NTU	20	<u>20.1</u>
		Standard	NTU	100	<u>101</u>
		Standard	NTU	800	<u>798</u>

		Standard Value	Meter Value	*Acceptance Criteria (PM)
		10	<u>10.5</u>	+/- 5% of standard
		20	<u>21.0</u>	
		100	<u>102</u>	
		800	<u>828</u>	

PHOTOIONIZATION DETECTOR			
METER TYPE	Background	ppmv	<0.1
MODEL NO.			
UNIT ID NO.	Span Gas	ppmv	100

	<0.1	within 5 ppmv of BG
	100	+/- 10% of standard

O ₂ -LEL 4 GAS METER			
METER TYPE	Methane	%	50
MODEL NO.	O ₂	%	20.9
UNIT ID NO.	H ₂ S	ppmv	25
	CO	ppmv	50

	50	+/- 10% of standard
	20.9	
	25	
	50	

OTHER METER			
METER TYPE			
MODEL NO.			
UNIT ID NO.			

See Notes Below for Additional Information

- Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
- Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source: _____
 Lot#/Date Produced: _____
 Trip Blank Source: _____ Lab
 Sample Preservatives Source: _____ Lab
 Disposable Filter Type: _____ 0.45µm
 Calibration Fluids / Standard Source:
 - DO Calibration Fluid (<0.1 mg/L) _____
 - Other _____
 - Other _____
 - Other _____

	Cal. Standard Lot Number	Exp. Date
pH (4)	<u>4GH1124</u>	<u>AUG/23</u>
pH (7)	<u>4FI081</u>	<u>SEP/23</u>
pH (10)		
ORP	<u>09136Z</u>	<u>SEP/21</u>
Conductivity	<u>4GI580</u>	<u>SEP/22</u>
10 Turb. Stan.	<u>A1123</u>	<u>AUG-22</u>
20 Turb. Stan.	<u>A1120</u>	<u>AUG-22</u>
100 Turb. Stan.	<u>A1144</u>	<u>AUG-22</u>
800 Turb. Stan.	<u>A1139</u>	<u>AUG-22</u>
PID Span Gas		
O ₂ -LEL Span Gas		
DO		

NOTES:



* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-Field Calibration) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.

** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.

1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-Field Calibration), dated 1/19/2010.

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: BIRD MACHINE
 PROJECT NUMBER: 30S1180087.000 S
 PROJECT LOCATION: WALDOLE, MA
 WEATHER CONDITIONS (AM): CLOUDY, 44°F - RAINY
 WEATHER CONDITIONS (PM): CLOUDY, 57°F

TASK NO: 000 S DATE: 12/2/21
 FIELD CREW: JEP / SPM
 SAMPLER NAME: SACE PETERSON
 SAMPLER SIGNATURE: [Signature]
 CHECKED BY: _____ DATE: _____

MULTI-PARAMETER WATER QUALITY METER

METER TYPE		AM CALIBRATION		
MODEL NO.		Start Time:	End Time:	
UNIT ID NO.				
	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)
pH (4)	SU	4.0	<u>4.0</u>	+/- 0.1 pH Units
pH (7)	SU	7.0	<u>7.0</u>	+/- 0.1 pH Units
pH (10)	SU	10.0	<u>10.0</u>	+/- 0.1 pH Units
Redox	+/- mV	240 <u>238</u>	<u>238</u>	+/- 10 mV
Sp. Conductivity	µS/cm	1000 <u>1000</u>	<u>1000</u>	+/- 3% of standard
DO (saturated)	%	100	<u>98.5</u>	+/- 2% of standard
DO (saturated)	mg/L ¹ (see Chart 1)	—	<u>11.90</u>	+/- 0.2 mg/L
DO (<0.1)	mg/L	<0.1	—	< 0.5 mg/L
Temperature	°C	—	<u>7.2</u>	
Baro. Press.	mmHg	—	<u>752.5</u>	

PM CALIBRATION CHECK		
Start Time:	End Time:	
Standard Value	Meter Value	*Acceptance Criteria (PM)
7.0	<u>6.98</u>	+/- 0.3 pH Units
238 <u>238</u>	<u>226.6</u>	+/- 10 mV
1000 <u>1000</u>	<u>1057</u>	+/- 5% of standard
—	<u>96.7</u>	%
—	<u>10.21</u>	+/- 0.5 mg/L of sat. value
DO (<0.1)	—	< 0.5 mg/L
—	<u>12.9</u>	°C
—	<u>747.0</u>	mmHg

TURBIDITY METER		Units	Standard Value	Meter Value
METER TYPE	<u>HACH</u>			
MODEL NO.	<u>2100Q</u>			
UNIT ID NO.	<u>15080C043227</u>			
	Standard	NTU	10	<u>9.39</u>
	Standard	NTU	20	<u>18.9</u>
	Standard	NTU	100	<u>97.9</u>
	Standard	NTU	800	<u>810</u>

Standard Value	Meter Value	*Acceptance Criteria (PM)
10	<u>9.59</u>	+/- 5% of standard
20	<u>19.5</u>	
100	<u>98.4</u>	
800	<u>785</u>	

PHOTOIONIZATION DETECTOR			
METER TYPE	Background	ppmv	<0.1
MODEL NO.			
UNIT ID NO.	Span Gas	ppmv	100

<0.1		within 5 ppmv of BG
100		+/- 10% of standard

O ₂ -LEL 4 GAS METER			
METER TYPE	Methane	%	50
MODEL NO.	O ₂	%	20.9
UNIT ID NO.	H ₂ S	ppmv	25
	CO	ppmv	50

50		+/- 10% of standard
20.9		
25		
50		

OTHER METER			
METER TYPE			
MODEL NO.			
UNIT ID NO.			

See Notes Below for Additional Information

Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
 Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source: _____
 Lot#/Date Produced: _____
 Trip Blank Source: _____ Lab _____
 Sample Preservatives Source: _____ Lab _____
 Disposable Filter Type: _____ 0.45µm _____
 Calibration Fluids / Standard Source:
 - DO Calibration Fluid (<0.1 mg/L) _____
 - Other _____
 - Other _____
 - Other _____

	Cal. Standard Lot Number	Exp. Date
pH (4)	<u>16H1124</u>	<u>8/23</u>
pH (7)	<u>161081</u>	<u>9/23</u>
pH (10)	—	—
ORP	<u>16F704</u>	<u>3/22</u>
Conductivity	<u>16F703</u>	<u>6/22</u>
10 Turb. Stan.	<u>A1123</u>	<u>8/22</u>
20 Turb. Stan.	<u>A1120</u>	<u>8/22</u>
100 Turb. Stan.	<u>A1144</u>	<u>8/22</u>
800 Turb. Stan.	<u>A1138</u>	<u>8/22</u>
PID Span Gas	—	—
O ₂ -LEL Span Gas	—	—
DO	—	—

NOTES:



* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-Field Calibration) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.
 ** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
 1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-Field Calibration), dated 1/19/2010.

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: Baker Hughes BVD Machine
 PROJECT NUMBER: 3681180087.0005
 PROJECT LOCATION: Waltham, MA
 WEATHER CONDITIONS (AM): 49°F Cloudy
 WEATHER CONDITIONS (PM): 57°F Partly Cloudy

TASK NO: .0005 DATE: 12/2/21
 FIELD CREW: SPM, TEP
 SAMPLER NAME: Scott Ruck
 SAMPLER SIGNATURE: [Signature]
 CHECKED BY: _____ DATE: _____

MULTI-PARAMETER WATER QUALITY METER

METER TYPE		AM CALIBRATION		
MODEL NO.		Start Time:	End Time:	
UNIT ID NO.		Standard Value	Meter Value	*Acceptance Criteria (AM)
pH (4)	SU	4.0	<u>4.00</u>	+/- 0.1 pH Units
pH (7)	SU	7.0	<u>7.00</u>	+/- 0.1 pH Units
pH (10)	SU	10.0	<u>—</u>	+/- 0.1 pH Units
Redox	+/- mV	240.738	<u>238</u>	+/- 10 mV
Sp. Conductivity	µS/cm	1413.000	<u>1099</u>	+/- 3% of standard
DO (saturated)	%	100	<u>98.6</u>	+/- 2% of standard
DO (saturated)	mg/L ¹ (see Chart 1)	—	<u>11.73</u>	+/- 0.2 mg/L
DO (<0.1)	mg/L	<0.1	<u>—</u>	< 0.5 mg/L
Temperature	°C	—	<u>7.7</u>	—
Baro. Press.	mmHg	—	<u>249.5</u>	—

PM CALIBRATION CHECK		
Start Time:	End Time:	
Standard Value	Meter Value	*Acceptance Criteria (PM)
7.0	<u>6.91</u>	+/- 0.3 pH Units
240.738	<u>231.2</u>	+/- 10 mV
1413.000	<u>1048</u>	+/- 5% of standard
—	<u>93.0</u>	%
—	<u>9.29</u>	+/- 0.5 mg/L of sat. value
DO (<0.1)	<u>—</u>	< 0.5 mg/L
—	<u>15.3</u>	°C
—	<u>244.3</u>	mmHg

TURBIDITY METER		Units	Standard Value	Meter Value	*Acceptance Criteria (PM)
METER TYPE	<u>4ACH</u>				
MODEL NO.	<u>Z100 @</u>				
UNIT ID NO.	<u>13280C027782</u>				
		Standard	NTU	<u>4.70</u>	+/- 5% of standard
		Standard	NTU	<u>20.50</u>	
		Standard	NTU	<u>104</u>	
		Standard	NTU	<u>802</u>	

		Standard Value	Meter Value	*Acceptance Criteria (PM)
		10	<u>10.0</u>	+/- 5% of standard
		20	<u>20.5</u>	
		100	<u>103</u>	
		800	<u>799</u>	

PHOTOIONIZATION DETECTOR		Background	ppmv	<0.1	within 5 ppmv of BG
METER TYPE	_____				
MODEL NO.	_____				
UNIT ID NO.	_____	Span Gas	ppmv	100	+/- 10% of standard

		<0.1		within 5 ppmv of BG
		100		+/- 10% of standard

O ₂ -LEL 4 GAS METER		Methane	%	50	+/- 10% of standard
METER TYPE	_____				
MODEL NO.	_____	O ₂	%	20.9	
UNIT ID NO.	_____	H ₂ S	ppmv	25	
		CO	ppmv	50	

		50		+/- 10% of standard
		20.9		
		25		
		50		

OTHER METER		_____	_____	_____	_____	See Notes Below for Additional Information
METER TYPE	_____					
MODEL NO.	_____					
UNIT ID NO.	_____					

See Notes Below for Additional Information

- Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
 Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source: _____
 Lot#/Date Produced: _____
 Trip Blank Source: _____ Lab _____
 Sample Preservatives Source: _____ Lab _____
 Disposable Filter Type: _____ 0.45µm _____
 Calibration Fluids / Standard Source:
 - DO Calibration Fluid (<0.1 mg/L) _____
 - Other _____
 - Other _____
 - Other _____

	Cal. Standard Lot Number	Exp. Date
pH (4)	<u>4611124</u>	<u>Aug 23</u>
pH (7)	<u>AG1061</u>	<u>SEP 23</u>
pH (10)	_____	_____
ORP	<u>040367</u>	<u>SEP 21</u>
Conductivity	<u>141581</u>	<u>SEP 22</u>
10 Turb. Stan.	<u>A1125</u>	<u>Aug-22</u>
20 Turb. Stan.	<u>A1120</u>	<u>Aug-22</u>
100 Turb. Stan.	<u>A1144</u>	<u>Aug-22</u>
800 Turb. Stan.	<u>A1138</u>	<u>Aug-22</u>
PID Span Gas	_____	_____
O ₂ -LEL Span Gas	_____	_____
DO	_____	_____

NOTES:

SPC. Conductivity nothing calibration failed.



* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-Field Calibration) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.
 ** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
 1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-Field Calibration), dated 1/19/2010.

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: Baker Hughes Bit Machine WELL ID: LR-MW-122
 SAMPLE ID: LR-MW-122 SITE TYPE: Industrial DATE: 12/02/21
 TIME START: 1340 END: 1448 JOB NUMBER: 3651180087.0005 BOTTLE TIME: 1444

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED: MEASUREMENT POINT: TOP OF WELL RISER
 TOP OF PROTECTIVE CASING PROTECTIVE CASING STICKUP (FROM GROUND): Flush FT. PROTECTIVE CASING / WELL DIFFERENCE: 0.20 FT.
 INITIAL DEPTH TO WATER: 2.82 FT. WELL DEPTH (TOR): 6.84 FT. PID AMBIENT AIR: — PPMV WELL DIAMETER: 2 IN.
 FINAL DEPTH TO WATER: 6.31 FT. SCREEN LENGTH: — FT. PID WELL MOUTH: — PPMV WELL INTEGRITY: YES NO N/A
 CAP CASING LOCKED COLLAR
 DRAWDOWN VOLUME: 0.56 GAL. RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.316 PRESSURE TO PUMP: — PSI
 (initial - final x 0.16 (2-inch) or x 0.65 (4-inch)) REFILL TIMER SETTING: — SEC. DISCHARGE TIMER SETTING: — SEC.
 TOTAL VOL. PURGED: 1.77 GAL. (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1340	Start Pump									initial DW: 2.82'
1345	3.93	180	12.1	190.5	6.72	0.88	64.7	19.3		
1350	4.54	180	12.2	190.8	6.67	0.92	63.7	2.2		
1355	4.75	100	12.4	192.8	6.67	5.95	33.7	-14.8		Pump reduced to
1400	4.93	100	12.3	199.2	6.67	1.12	27.4	-43.1		Lowest speed, cannot
1405	4.99	100	12.4	199.9	6.68	1.06	21.1	-53.9		Reduce further
1410	5.22	100	12.4	210.0	6.71	1.06	89.9	-67.9		
1415	5.39	100	12.5	214.1	6.73	0.74	95.5	-81.6		
1420	5.60	100	12.6	214.5	6.75	0.66	74.5	-88.8		
1425	5.75	100	12.6	218.3	6.75	0.42	81.8	-92.5		
1430	5.91	100	12.7	217.1	6.76	0.60	54.4	-95.5		
1435	5.99	100	12.8	208.8	6.78	0.83	33.8	-97.0		
1440	6.31	100	12.7	202.5	6.79	1.30	73.2	-96.4		
1444	Collect Sample									WELL GOING DRY -
1448	Pump off									BUBBLES
							1.51			As FF NTU = 1.51

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON OTHER

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> Arsenic (Total) Filtered	6020B	HNO3/4°C	120ml	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED: YES NO
 NUMBER OF GALLONS GENERATED: 1.77
 SIGNATURE: [Signature]

NOTES:

 Prepared by: SM
 Checked by:

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: Baker Hughes Bird Machine WELL ID: MB-MW-362
 SAMPLE ID: MB-MW-362 SITE TYPE: Industrial DATE: 12/2/21
 TIME START: 1120 END: 1158 JOB NUMBER: 3651180082.0005 BOTTLE TIME: 1155

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED: MEASUREMENT POINT: TOP OF WELL RISER, TOP OF PROTECTIVE CASING, OTHER _____

PROTECTIVE CASING STICKUP (FROM GROUND): Flush FT. PROTECTIVE CASING / WELL DIFFERENCE: 0.35 FT.

INITIAL DEPTH TO WATER: 1.42 FT. WELL DEPTH (TOR): 19.62 FT. PID AMBIENT AIR: _____ PPMV WELL DIAMETER: 2 IN.

FINAL DEPTH TO WATER: 1.48 FT. SCREEN LENGTH: _____ FT. PID WELL MOUTH: _____ PPMV WELL INTEGRITY: YES NO N/A

DRAWDOWN VOLUME: 0.0096 GAL. (initial - final x 0.16 (2-inch) or x 0.65 (4-inch)) RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.005 PRESSURE TO PUMP: _____ PSI WELL INTEGRITY: CAP YES NO N/A, CASING LOCKED YES NO N/A, COLLAR YES NO N/A

TOTAL VOL. PURGED: 1.976 GAL. (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml) REFILL TIMER SETTING: _____ SEC. DISCHARGE TIMER SETTING: _____ SEC.

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1120	1.42	start							u/7'	
1125	1.47	200	4.1	154.3	6.90	0.31	2.55	-4.2		
1130	1.47	200	4.1	154.4	6.76	0.19	3.96	2.7		
1135	1.47	200	4.1	153.7	6.72	0.18	1.65	4.7		
1140	1.48	200	4.1	153.5	6.69	0.18	2.62	7.0		
1145	1.48	200	4.0	153.0	6.66	0.18	1.25	8.6		
1150	1.48	200	4.0	152.9	6.64	0.16	1.60	10.0		
1155	collect	sample								
1158	pump off									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER, SIMCO BLADDER, GEOPUMP

TYPE OF TUBING: TEFLON OR TEFLON LINED, HIGH DENSITY POLYETHYLENE, LDPE

TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE, STAINLESS STEEL, SILICON (Dedicated)

TYPE OF BLADDER MATERIAL: TEFLON, OTHER _____

ANALYTICAL PARAMETERS

To Be Collected: VOCs, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____

METHOD NUMBER: 8260 PRESERVATION METHOD: HCl/4°C VOLUME REQUIRED: 3 x 40ml SAMPLE COLLECTED: _____, _____, _____, _____, _____, _____, _____, _____, _____, _____

VOA

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES NO NUMBER OF GALLONS GENERATED: 1.976

NOTES:

SIGNATURE: [Signature]

Prepared by: SPM
Checked by: _____



FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT Baker Highs Blvd Mar 1000 WELL ID MB-MW-374
 SAMPLE ID MB-MW-374 SITE TYPE Industrial DATE 12/2/21
 TIME START 1000 END 1056 JOB NUMBER 3651180087.005 BOTTLE TIME 1055

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED MEASUREMENT POINT
 TOP OF WELL RISER
 TOP OF PROTECTIVE CASING
 OTHER _____ PROTECTIVE CASING STICKUP (FROM GROUND) 1.68 FT.
 PROTECTIVE CASING / WELL DIFFERENCE 0.27 FT.
 INITIAL DEPTH TO WATER 5.09 FT. WELL DEPTH (TOR) 27.01 FT. PID AMBIENT AIR _____ PPMV WELL DIAMETER 2 IN.
 FINAL DEPTH TO WATER 5.14 FT. SCREEN LENGTH _____ FT. PID WELL MOUTH _____ PPMV WELL INTEGRITY: YES NO N/A
 CAP _____
 LOCKED _____
 COLLAR _____
 DRAWDOWN VOLUME 0.008 GAL. RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED 0.0027 PRESSURE TO PUMP _____ PSI
 TOTAL VOL. PURGED 2.912 GAL. REFILL TIMER SETTING _____ SEC. DISCHARGE TIMER SETTING _____ SEC.
 (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1000	5.09	Start Pump							~25'	Sample depth: ~25'
1005	5.13	200	13.7	165.0	7.40	0.29	3.69	143.1 mV		ORP: 143.1 mV
1010	5.13	200	13.6	136.8	7.00	0.19	2.65	136.0 mV		Note in correct
1015	5.13	200	13.6	135.4	6.90	0.18	2.56	135.3 mV		number for ORP
1020	5.13	200	13.8	135.4	6.84	0.16	3.64	-4.1		
1025	5.14	200	13.9	136.1	6.79	0.21	3.36	-10.5		
1030	5.14	200	14.1	141.5	6.75	0.19	2.12	-22.3		
1035	5.14	200	14.2	150.5	6.74	0.19	2.66	-29.3		
1040	5.14	200	14.3	182.3	6.73	0.18	1.16	-38.0		
1045	5.14	200	14.3	183.5	6.74	0.19	1.34	-40.4		
1050	5.14	200	14.3	183.6	6.74	0.18	4.44	-43.3		
1055	Collect	Sample								
1056	Pump off									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON OTHER _____

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260	HCl	3x40mL VOA	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED YES NO
 NUMBER OF GALLONS GENERATED 2.912
 SIGNATURE: [Signature]

NOTES:

 Prepared by: SPM
 Checked by: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: BIRD MACHINE WELL ID: MW-704S
 SAMPLE ID: MW-704S SITE TYPE: MCP DATE: 12/1/2021
 TIME: START 1359 END 1510 JOB NUMBER: 3651180087.0005 BOTTLE TIME: 1510

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED: DUP/MS/MSD
 INITIAL DEPTH TO WATER: 3.54 FT.
 FINAL DEPTH TO WATER: 9.04 FT.
 DRAWDOWN VOLUME: 0.88 GAL.
 TOTAL VOL. PURGED: 2.03 GAL.
 MEASUREMENT POINT: TOP OF WELL RISER, TOP OF PROTECTIVE CASING, OTHER
 PROTECTIVE CASING STICKUP (FROM GROUND): SEE SURVEY FT.
 PROTECTIVE CASING / WELL DIFFERENCE: SEE SURVEY FT.
 WELL DEPTH (TOR): 10.00 FT.
 SCREEN LENGTH: 5 FT.
 RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.43
 PID AMBIENT AIR: — PPMV
 PID WELL MOUTH: — PPMV
 PRESSURE TO PUMP: — PSI
 REFILL TIMER SETTING: — SEC.
 WELL DIAMETER: 2.0 IN.
 WELL INTEGRITY: YES NO N/A
 CAP:
 CASING LOCKED:
 COLLAR:
 DISCHARGE TIMER SETTING: — SEC.

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1359	3.54	110	BEGIN PURGE						~9'	
1405	3.84	110	9.7	408.4	6.53	2.59	40.8	156.0		
1410	4.20	110	9.8	273.7	6.51	2.99	68.5	123.5		
1420	5.23	110	9.8	244	6.57	3.05	60.7	44.4		
1425	6.24	110	9.7	234.7	6.62	2.77	54.1	25.1		
1435	6.70	110	9.9	233.5	6.62	3.02	59.8	23.5		
1440	7.00	110	9.9	233.8	6.70	2.04	57.2	20.5		
1445	7.38	110	9.9	234.1	6.71	2.04	50.8	17.0		
1450	7.72	110	10.2	234.6	6.69	1.78	45.9	18.4		
1455	8.07	110	10.4	234.9	6.69	1.61	46.8	23.6		
1500	8.48	110	10.5	234.4	6.69	1.58	48.0	25.8		
1505	8.98	110	10.7	235.7	6.69	1.46	51.2	23.6		
1510	9.00	110	COLLECT SAMPLE						~9'	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER, SIMCO BLADDER, GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED, HIGH DENSITY POLYETHYLENE, LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE, STAINLESS STEEL, SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON, OTHER

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260	HCL	3 x 40ml VOA VIAL	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED: YES NO
 NUMBER OF GALLONS GENERATED: 2.03

NOTES:

SIGNATURE: 

wood.
 Prepared by:
 Checked by:

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: Baker Hughes Bird Medicine WELL ID: MW-7065
 SAMPLE ID: MW-7065 SITE TYPE: Indus+1141 DATE: 12/1/21
 TIME START: 1450 END: 1615 JOB NUMBER: 3651180087.0005 BOTTLE TIME: 1605

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED: M9/MSD, DUP-1
 INITIAL DEPTH TO WATER: 1.98 FT.
 FINAL DEPTH TO WATER: 4.49 FT.
 DRAWDOWN VOLUME (initial - final x 0.16 (2-inch) or x 0.65 (4-inch)): 0.40 GAL.
 TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml): 4.42 GAL.

MEASUREMENT POINT
 TOP OF WELL RISER
 TOP OF PROTECTIVE CASING
 OTHER _____

PROTECTIVE CASING STICKUP (FROM GROUND): _____ FT.
 PROTECTIVE CASING / WELL DIFFERENCE: _____ FT.
 WELL DEPTH (TOR): 12.15 FT.
 SCREEN LENGTH: _____ FT.
 RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.096
 REFILL TIMER SETTING: _____ SEC.

PID AMBIENT AIR: _____ PPMV
 PID WELL MOUTH: _____ PPMV
 PRESSURE TO PUMP: _____ PSI

WELL DIAMETER: 2 IN.
 WELL INTEGRITY: YES NO N/A
 CAP: / _____
 LOCKED: / _____
 COLLAR: / _____

DISCHARGE TIMER SETTING: NA SEC.

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1450	1.98	Pump on							~10	
1455	2.83	200	10.5	138.5	6.46	0.55	22.3	146.7		
1500	3.06	200	10.8	131.8	6.21	0.35	20.4	146.8		
1505	3.46	200	10.9	124.6	6.19	0.33	19.8	137.7		
1510	3.82	200	11.0	119.7	6.17	0.36	18.5	129.0		
1515	3.98	200	11.0	124.2	6.16	0.40	16.5	120.0		
1520	4.07	200	11.2	123.5	6.15	0.46	14.1	106.1		
1525	4.13	200	11.4	115.0	6.13	0.57	13.9	87.5		
1530	4.19	200	11.5	111.0	6.12	0.69	12.1	67.1		
1535	4.26	200	11.6	116.3	6.12	0.71	11.4	53.0		
1540	4.30	200	11.6	113.1	6.11	0.79	11.9	43.0		
1545	4.36	200	11.5	112.8	6.11	0.73	8.42	34.7		
1550	4.44	200	11.7	110.2	6.10	0.93	8.31	33.9		
1555	4.49	200	11.8	111.1	6.10	0.90	8.13	27.1		
1605	4.49	200	11.6	110.5	6.11	0.89	9.07	24.2		
1605	Collect Sample									
										Pump Off @ 1615

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON OTHER _____

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> Arsenic (P) Filter	6020B	HNO3	120 mL	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED: YES NO
 NUMBER OF GALLONS GENERATED: 4.42
 SIGNATURE: [Signature]

NOTES:

 Prepared by: SM
 Checked by: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT BIRD MACHINE WELL ID MW-709S
 SAMPLE ID MW-709S SITE TYPE MCP INDUSTRIAL DATE 12/2/21
 TIME START 1055 END 1157 JOB NUMBER 36S1180087.000S BOTTLE TIME 1155

WATER LEVEL / PUMP SETTINGS

QC SAMPLE COLLECTED DUP/MS/MSD MEASUREMENT POINT TOP OF WELL RISER
 TOP OF PROTECTIVE CASING OTHER _____ PROTECTIVE CASING STICKUP (FROM GROUND) SEE SURVEY FT. PROTECTIVE CASING / WELL DIFFERENCE SEE SURVEY FT.

INITIAL DEPTH TO WATER 2.80 FT. WELL DEPTH (TOR) 15.01 FT. PID AMBIENT AIR _____ PPMV WELL DIAMETER 2.0 IN.

FINAL DEPTH TO WATER 3.17 FT. SCREEN LENGTH 10 FT. PID WELL MOUTH _____ PPMV WELL INTEGRITY: YES NO N/A
 CAP _____ _____
 CASING LOCKED _____ _____
 COLLAR _____ _____

DRAWDOWN VOLUME 0.059 GAL. RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED 0.22 PRESSURE TO PUMP _____ PSI
 (initial - final x 0.16 (2-inch) or x 0.65 (4-inch))

TOTAL VOL. PURGED 2.65 GAL. REFILL TIMER SETTING _____ SEC. DISCHARGE TIMER SETTING _____ SEC.
 (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1055	2.80	170	BEGIN PURGE						~13'	
1100	3.17	170	14.3	238.5	6.48	0.46	12.4	37.2		
1115	3.24	170	14.4	238.9	6.36	0.34	14.1	60.2		
1120	3.25	170	14.4	237.8	6.35	0.52	13.8	64.2		
1125	3.25	170	14.6	237.2	6.34	0.33	13.2	66.2		
1135	3.17	170	14.5	237.4	6.34	0.35	12.4	68.3		
1140	3.17	170	14.5	238.1	6.34	0.37	4.8	71.7		
1145	3.17	170	14.5	236.0	6.33	0.44	4.40	73.6		
1150	3.17	170	14.6	237.1	6.31	6.42		75.2		
1155	3.17	170	COLLECT SAMPLE						~13'	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEOPUMP

TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE

TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)

TYPE OF BLADDER MATERIAL: TEFLON OTHER _____

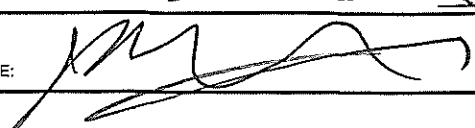
ANALYTICAL PARAMETERS

To Be Collected

METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCS	8260	HCL	3x40ml VOA VIAL
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES NO NUMBER OF GALLONS GENERATED: 2.65

SIGNATURE: 

NOTES:



Prepared by: _____
 Checked by: _____

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: BIRD MACHINE WELL ID: MW-710M
 SAMPLE ID: MW-710M SITE TYPE: MCP INDUSTRIAL DATE: 12/2/21
 TIME START: 120 END: 1325 JOB NUMBER: 3651180087.0005 BOTTLE TIME: 1325

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED: MEASUREMENT POINT: TOP OF WELL RISER, TOP OF PROTECTIVE CASING, OTHER
 PROTECTIVE CASING STICKUP (FROM GROUND): SEE SURVEY FT. PROTECTIVE CASING / WELL DIFFERENCE: SEE SURVEY FT.
 INITIAL DEPTH TO WATER: 1.90 FT. WELL DEPTH (TOR): 31.97 FT. PID AMBIENT AIR: - PPMV WELL DIAMETER: 2.0 IN.
 FINAL DEPTH TO WATER: 2.45 FT. SCREEN LENGTH: 10 FT. PID WELL MOUTH: - PPMV WELL INTEGRITY: YES NO N/A
 CAP LOCKED COLLAR
 DRAWDOWN VOLUME (initial - final x 0.16 (2-inch) or x 0.65 (4-inch)): 0.088 GAL. RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.029 PRESSURE TO PUMP: - PSI DISCHARGE TIMER SETTING: - SEC.
 TOTAL VOL. PURGED (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml): 3.04 GAL. REFILL TIMER SETTING: - SEC.

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1212	1.90	160							~30'	
1215	2.33	160	14.3	189.1	6.62	0.37	16.4	81.3	↑	
1230	2.48	160	14.2	183.1	6.13	0.26	13.7	98.8		
1235	2.48	160	14.3	177.8	6.09	0.23	11.7	97.8		
1245	2.47	160	14.2	174.2	6.03	0.24	11.4	101.8		
1250	2.44	160	14.2	173.4	5.86	0.25	10.3	107.4		
1255	2.45	160	14.2	172.0	5.79	0.25	9.00	111.2		
1300	2.45	160	14.2	174.3	6.61	0.24	2.89	65.4		
1310	2.45	160	14.1	177.2	6.58	0.21	4.82	67.4		
1315	2.45	160	14.0	176.3	6.57	0.22	4.66	68.9		
1320	2.45	160	14.0	175.5	6.60	0.20	4.55	69.4	↓	
1325	2.45	160							~30'	COLLECT SAMPLE

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER, SIMCO BLADDER, GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED, HIGH DENSITY POLYETHYLENE, LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE, STAINLESS STEEL, SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON, OTHER

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260	HCL	3x40ml USA VIAL	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED: YES NO
 NUMBER OF GALLONS GENERATED: 3.04

NOTES:

SIGNATURE: *John Re...*



Prepared by:
Checked by:

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT: Baker Hughes Bit Machine WELL ID: MW-713D
 SAMPLE ID: MW-713D SITE TYPE: Industrial DATE: 12/2/21
 TIME START: 1230 END: 1312 JOB NUMBER: 3651180087.0005 BOTTLE TIME: 1310

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED:
 INITIAL DEPTH TO WATER: 2.73 FT.
 FINAL DEPTH TO WATER: 2.88 FT.
 DRAWDOWN VOLUME: 0.024 GAL. (initial - final x 0.16 (2-inch) or x 0.65 (4-inch))
 TOTAL VOL. PURGED: 1.97 GAL. (purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

MEASUREMENT POINT
 TOP OF WELL RISER
 TOP OF PROTECTIVE CASING
 OTHER _____

PROTECTIVE CASING STICKUP (FROM GROUND): 1.93 FT.
 PROTECTIVE CASING / WELL DIFFERENCE: 0.39 FT.
 WELL DEPTH (TOR): 33.71 FT.
 SCREEN LENGTH: — FT.
 RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED: 0.012
 REFILL TIMER SETTING: — SEC.

PID AMBIENT AIR: — PPMV
 PID WELL MOUTH: — PPMV
 PRESSURE TO PUMP: — PSI
 DISCHARGE TIMER SETTING: — SEC.

WELL DIAMETER: 2 IN.
 WELL INTEGRITY: YES NO N/A
 CAP: 1 — —
 CASING: 1 — —
 LOCKED: 1 1 —
 COLLAR: 1 — —

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
1230	2.73	Pump ON								
1235	2.86	200	13.6	229.1	7.00	0.44	14.0	25.0	43'	
1240	2.86	180	13.6	227.7	6.92	0.32	15.6	25.0		
1245	2.86	180	13.6	227.0	6.88	0.26	13.6	25.0		
1250	2.86	180	13.6	227.0	6.87	0.25	12.0	25.1		
1255	2.87	180	13.5	226.3	6.86	0.23	12.5	26.0		
1300	2.88	180	13.5	226.6	6.85	0.22	11.5	26.2		
1310	Collect Sample									
1312	Pump OFF									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON OTHER _____

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOC	8260	HCL/4°C	3x40ml	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED: YES NO
 NUMBER OF GALLONS GENERATED: 1.97

NOTES: _____

wood.
 Prepared by: SPM
 Checked by: _____

SIGNATURE: [Signature]

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

PROJECT BIRD MACHINE WELL ID MW-714S
 SAMPLE ID MW-714S SITE TYPE MCP DATE 12/2/21
 TIME START 0950 END 1030 JOB NUMBER 3651180087.0005 BOTTLE TIME 1030

WATER LEVEL / PUMP SETTINGS
 QC SAMPLE COLLECTED MEASUREMENT POINT TOP OF WELL RISER
 TOP OF PROTECTIVE CASING PROTECTIVE CASING STICKUP (FROM GROUND) SEE SURVEY FT.
 OTHER PROTECTIVE CASING / WELL DIFFERENCE SEE SURVEY FT.
 INITIAL DEPTH TO WATER 7.42 FT. WELL DEPTH (TOR) 12.99 FT. PID AMBIENT AIR — PPMV WELL DIAMETER 2.0 IN.
 FINAL DEPTH TO WATER 7.57 FT. SCREEN LENGTH 10 FT. PID WELL MOUTH — PPMV WELL INTEGRITY: CAP YES NO N/A
 DRAWDOWN VOLUME 0.024 GAL. RATIO OF DRAWDOWN VOLUME TO TOTAL VOLUME PURGED 0.014 PRESSURE TO PUMP — PSI DISCHARGE TIMER SETTING — SEC.
 TOTAL VOL. PURGED 1.66 GAL. REFILL TIMER SETTING — SEC.
(purge rate (milliliters per minute) x time duration (minutes) x 0.00026 gal/ml)

PURGE DATA

TIME (5 min.)	DEPTH TO WATER (ft.) (0.3 ft.)	PURGE RATE (ml/min) (100-400)	TEMP. (deg. C) (3%)	SPEC. COND. (uS/cm) (3%)	pH (units) (+/- 0.1)	DISS. O2 (mg/L) (10%) (>0.5)	TURBIDITY (NTU) (10%) (>5)	ORP (mV) (+/- 10 mV)	SAMPLE DEPTH	COMMENTS
0950	7.58	160	BEGIN	PURGE					~11'	
0955	7.57	160	12.7	268.6	6.65	0.64	236	-18.6		FLOC IN PURGE
1000	7.57	160	12.6	194.0	6.75	0.73	18.1	-53.6		WATER INITIALLY
1010	7.57	160	12.7	189.7	6.79	0.70	13.80	-67.3		
1015	7.57	160	12.8	185.1	6.88	0.68	7.09	-80.6		
1020	7.57	160	12.9	183.5	6.88	0.70	3.58	-82.1		
1025	7.57	160	13.0	184.1	6.89	0.70	3.16	-84.0		
1030	7.57	160	COLLECT SAMPLE						~11'	

EQUIPMENT DOCUMENTATION

TYPE OF PUMP: QED BLADDER SIMCO BLADDER GEOPUMP
 TYPE OF TUBING: TEFLON OR TEFLON LINED HIGH DENSITY POLYETHYLENE LDPE
 TYPE OF PUMP MATERIAL: POLYVINYL CHLORIDE STAINLESS STEEL SILICON (Dedicated)
 TYPE OF BLADDER MATERIAL: TEFLON OTHER _____

ANALYTICAL PARAMETERS

To Be Collected	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED
<input checked="" type="checkbox"/> VOCs	8260	HCL	3x40ml UVA VIAL	<input checked="" type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>
<input type="checkbox"/>				<input type="checkbox"/>

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES NO NUMBER OF GALLONS GENERATED 1.66

NOTES:

SIGNATURE: [Signature]



Prepared by:
Checked by:

The logo for the company 'wood.' is located in the top right corner. It consists of the word 'wood.' in a dark blue, lowercase, sans-serif font. The period at the end of the word is slightly larger than the other characters. The background of the page features large, light gray curved shapes that frame the central text.

Appendix D
Laboratory Results

MCP Presumptive Certainty Data Usability Assessment

Site Name: Bird Machine

Project Number: 3651180087.0005.****

Laboratory Name: Alpha Analytical

SDG Number: L2150919

Wood Sample IDs: MW-709S, DUP-1, MB-MW-374, MW-714S, MW-706S, DUP-2, and TRIP BLANK

Data Reviewed	Analysis	
	VOCs – 8260C	Dissolved Arsenic-6020B
Chain of Custody	√	√
Sample Receipt (Preservation & Temperature)	One VOA vial was received broken for sample MW-714S. The lab had sufficient volume to perform the analysis and data quality is not impacted. √	Thermal preservation is not a requirement for this method. √
Holding Time	√	√
Blanks (Trip or Equipment)	√	None submitted
Method Blanks	√	√
MS/MSD	Sample MW-709S was submitted as the source for the MS/MSD. The MS and/or MSD %Rs were below the acceptance criteria for cis-1,3-dichloropropene (69% MS), 2-butanone (67% MS), 2-hexanone (60%/67%), 1,2-dibromo-3-chloropropane (67% MS), naphthalene (64% MS), ethyl ether (69% MS), tertiary-amyl methyl ether (67%MS) and 1,4-dioxane (60% MS). Wood UJ qualified associated results in MW-709S and its field duplicate DUP-1 due to the potential low bias.	Sample MW-706S was submitted as the source for the MS/MSD. √
LCS/LCSD	√	√

Data Reviewed	Analysis	
	VOCs – 8260C	Dissolved Arsenic-6020B
Field Duplicates	Sample DUP-2 was submitted as a field duplicate of sample MW-709S. √	Sample DUP-1 was submitted as a field duplicate of sample MW-706S. √
Surrogate Recoveries	√	NA
Calibration Issues (Deficiencies noted in Narrative)	<p>The initial calibration, associated with samples MW-709S, MB-MW-374, MW-714S, and DUP-2 did not meet the method required minimum relative response factor (RRF) for the lowest calibration standard for 1,4-dioxane (0.0021), as well as the average response factor for 1,4-dioxane (0.00219). The continuing calibration standard did not meet the minimum RRF for 1,4-dioxane (0.00199). Wood UJ qualified 1,4-dioxane in associated samples due to the potential low bias.</p> <p>The continuing calibration, associated with samples MW-709S, MB-MW-374, MW-714S, and DUP-2 did not meet the required percent drift (%D) for chloromethane (-24%), chloroethane (-22.1%), ethyl ether (22.8%), methyl tert-butyl ether (23.1%), tetrahydrofuran (23.3%), tert-amyl methyl ether (27.4%), dibromomethane (21.9%), bromodichloromethane (20.6%), cis-1,3-dichloropropene (24.6%), 4-methyl-2-pentanone (23.2%), trans-1,3-dichloropropene (24.6%), 1,2,3-trichloropropane (21%), 1,2-dibromo-3-chloropropane (29.2%), and naphthalene (27.2%). Results associated with the continuing calibration %Ds were all non-detect, no qualification was required.</p>	
Other Issues	None	None

Notes:

NA = Not Applicable

ND = Non-Detect

%R = Percent Recovery

RPD = Relative Percent Difference

Qualifiers:

J = Estimated

R = Data is rejected and not suitable for use

U = Non-detect

UJ = Reporting limit is considered estimated

Data Reviewer: Lauren McHugh

Reviewer: Denise King

Date: 11/12/2021

√ = Data Reviewed is to be considered acceptable within method/lab criteria and without qualification



Reviewed by: Lauren McHugh
Date: 11/12/2021
Wood

ANALYTICAL REPORT

Lab Number:	L2150919
Client:	Wood Env & Infrastructure Solutions, Inc 271 Mill Road 3rd Floor Chelmsford, MA 01824
ATTN:	Craig Keating
Phone:	(978) 392-5337
Project Name:	BIRD MACHINE
Project Number:	3651180087.0005
Report Date:	10/05/21

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

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2150919-01	MW-706S	WATER	WALPOLE, MA	09/21/21 10:30	09/21/21
L2150919-02	DUP-1	WATER	WALPOLE, MA	09/21/21 00:00	09/21/21
L2150919-03	MW-709S	WATER	WALPOLE, MA	09/21/21 10:35	09/21/21
L2150919-04	MW-714S	WATER	WALPOLE, MA	09/21/21 12:10	09/21/21
L2150919-05	MB-MW-374	WATER	WALPOLE, MA	09/21/21 12:30	09/21/21
L2150919-06	DUP-2	WATER	WALPOLE, MA	09/21/21 00:00	09/21/21
L2150919-07	TRIP BLANK	WATER	WALPOLE, MA	09/14/21 00:00	09/21/21

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
For any questions answered "No", please refer to the case narrative section on the following page(s).		

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
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Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

L2150919-04B: The container for MCP 8260C - Volatile Organics was received broken; however, there was adequate sample remaining to perform the requested analysis.

Volatile Organics

L2150919-03 through -07: Initial calibration utilized a quadratic fit for: acetone

In reference to question H:

The WG1553287-6 MS recoveries, performed on L2150919-03, are outside the acceptance criteria for cis-1,3-dichloropropene (69%), 2-butanone (67%), 2-hexanone (60%), 1,2-dibromo-3-chloropropane (67%), naphthalene (64%), ethyl ether (69%), tertiary-amyl methyl ether (67%) and 1,4-dioxane (60%); however, the associated LCS/LCSD recoveries are within overall method allowances. No further action was required.

The WG1553287-7 MSD recovery, performed on L2150919-03, is outside the acceptance criteria for 2-hexanone (67%); however, the associated LCS/LCSD recoveries are within overall method allowances. No further action was required.

L2150919-03 through -07: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,4-dioxane (0.0021)

Average Response Factor: 1,4-dioxane

L2150919-03 through -07: The associated continuing calibration standard is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

Dissolved Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Caitlin Walukevich

Title: Technical Director/Representative

Date: 10/05/21

QC OUTLIER SUMMARY REPORT

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics - Westborough Lab								
8260C	Batch QC (L2150919-03)	WG1553287-6	cis-1,3-Dichloropropene	MS	69	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	Methyl ethyl ketone	MS	67	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	2-Hexanone	MS	60	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	1,2-Dibromo-3-chloropropane	MS	67	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	Naphthalene	MS	64	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	Diethyl ether	MS	69	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	Tertiary-Amyl Methyl Ether	MS	67	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-6	1,4-Dioxane	MS	60	70-130	03-07	potential low bias
8260C	Batch QC (L2150919-03)	WG1553287-7	2-Hexanone	MSD	67	70-130	03-07	potential low bias

ORGANICS

VOLATILES

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-03
 Client ID: MW-709S
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 10:35
 Date Received: 09/21/21
 Field Prep: None

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 10/01/21 07:14
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	46		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	4.5		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	1.7		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-03
 Client ID: MW-709S
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 10:35
 Date Received: 09/21/21
 Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	22		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	8.1		ug/l	1.0	--	1
1,2-Dichloroethene, Total	8.1		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-03
 Client ID: MW-709S
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 10:35
 Date Received: 09/21/21
 Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	99		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-04
 Client ID: MW-714S
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 12:10
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 10/01/21 10:16
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	1.5		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-04
Client ID: MW-714S
Sample Location: WALPOLE, MA

Date Collected: 09/21/21 12:10
Date Received: 09/21/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	5.6		ug/l	1.0	--	1
1,2-Dichloroethene, Total	5.6		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-04
 Client ID: MW-714S
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 12:10
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	100		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-05
 Client ID: MB-MW-374
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 12:30
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 10/01/21 09:45
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	17		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-05
Client ID: MB-MW-374
Sample Location: WALPOLE, MA

Date Collected: 09/21/21 12:30
Date Received: 09/21/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	4.0		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.4		ug/l	1.0	--	1
1,2-Dichloroethene, Total	2.4		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-05
 Client ID: MB-MW-374
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 12:30
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	99		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-06
 Client ID: DUP-2
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 00:00
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 10/01/21 09:15
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	48		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	4.6		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	1.6		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-06
 Client ID: DUP-2
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 00:00
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	23		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	8.1		ug/l	1.0	--	1
1,2-Dichloroethene, Total	8.1		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-06
 Client ID: DUP-2
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 00:00
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	99		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-07
 Client ID: TRIP BLANK
 Sample Location: WALPOLE, MA

Date Collected: 09/14/21 00:00
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 97,8260C
 Analytical Date: 10/01/21 08:45
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-07
 Client ID: TRIP BLANK
 Sample Location: WALPOLE, MA

Date Collected: 09/14/21 00:00
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-07
 Client ID: TRIP BLANK
 Sample Location: WALPOLE, MA

Date Collected: 09/14/21 00:00
 Date Received: 09/21/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 10/01/21 06:13
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03-07 Batch: WG1553287-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.40	--
cis-1,3-Dichloropropene	ND		ug/l	0.40	--
1,3-Dichloropropene, Total	ND		ug/l	0.40	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 10/01/21 06:13
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03-07 Batch: WG1553287-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene, Total	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
Methyl ethyl ketone	ND		ug/l	5.0	--
Methyl isobutyl ketone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 10/01/21 06:13
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03-07 Batch: WG1553287-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Diethyl ether	ND		ug/l	2.0	--
Diisopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 Batch: WG1553287-3 WG1553287-4								
Methylene chloride	88		86		70-130	2		20
1,1-Dichloroethane	94		94		70-130	0		20
Chloroform	84		84		70-130	0		20
Carbon tetrachloride	91		90		70-130	1		20
1,2-Dichloropropane	90		89		70-130	1		20
Dibromochloromethane	86		85		70-130	1		20
1,1,2-Trichloroethane	83		83		70-130	0		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	96		94		70-130	2		20
Trichlorofluoromethane	92		93		70-130	1		20
1,2-Dichloroethane	80		79		70-130	1		20
1,1,1-Trichloroethane	87		88		70-130	1		20
Bromodichloromethane	79		78		70-130	1		20
trans-1,3-Dichloropropene	75		75		70-130	0		20
cis-1,3-Dichloropropene	75		74		70-130	1		20
1,1-Dichloropropene	87		86		70-130	1		20
Bromoform	86		84		70-130	2		20
1,1,2,2-Tetrachloroethane	80		76		70-130	5		20
Benzene	90		89		70-130	1		20
Toluene	95		94		70-130	1		20
Ethylbenzene	95		93		70-130	2		20
Chloromethane	120		120		70-130	0		20
Bromomethane	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 Batch: WG1553287-3 WG1553287-4								
Vinyl chloride	99		98		70-130	1		20
Chloroethane	120		120		70-130	0		20
1,1-Dichloroethene	92		93		70-130	1		20
trans-1,2-Dichloroethene	95		92		70-130	3		20
Trichloroethene	90		87		70-130	3		20
1,2-Dichlorobenzene	95		93		70-130	2		20
1,3-Dichlorobenzene	98		95		70-130	3		20
1,4-Dichlorobenzene	97		94		70-130	3		20
Methyl tert butyl ether	77		72		70-130	7		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	92		91		70-130	1		20
Dibromomethane	78		78		70-130	0		20
1,2,3-Trichloropropane	79		77		70-130	3		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	82		82		70-130	0		20
Acetone	90		99		70-130	10		20
Carbon disulfide	92		91		70-130	1		20
Methyl ethyl ketone	84		86		70-130	2		20
Methyl isobutyl ketone	77		77		70-130	0		20
2-Hexanone	80		81		70-130	1		20
Bromochloromethane	86		84		70-130	2		20
Tetrahydrofuran	77		76		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 Batch: WG1553287-3 WG1553287-4								
2,2-Dichloropropane	86		85		70-130	1		20
1,2-Dibromoethane	87		84		70-130	4		20
1,3-Dichloropropane	83		82		70-130	1		20
1,1,1,2-Tetrachloroethane	92		91		70-130	1		20
Bromobenzene	100		95		70-130	5		20
n-Butylbenzene	96		93		70-130	3		20
sec-Butylbenzene	99		97		70-130	2		20
tert-Butylbenzene	99		96		70-130	3		20
o-Chlorotoluene	93		90		70-130	3		20
p-Chlorotoluene	92		90		70-130	2		20
1,2-Dibromo-3-chloropropane	71		70		70-130	1		20
Hexachlorobutadiene	100		100		70-130	0		20
Isopropylbenzene	97		94		70-130	3		20
p-Isopropyltoluene	100		97		70-130	3		20
Naphthalene	73		70		70-130	4		20
n-Propylbenzene	98		96		70-130	2		20
1,2,3-Trichlorobenzene	84		83		70-130	1		20
1,2,4-Trichlorobenzene	86		84		70-130	2		20
1,3,5-Trimethylbenzene	91		87		70-130	4		20
1,2,4-Trimethylbenzene	89		86		70-130	3		20
Diethyl ether	77		76		70-130	1		20
Diisopropyl Ether	100		100		70-130	0		20
Ethyl-Tert-Butyl-Ether	85		84		70-130	1		20

Lab Control Sample Analysis Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 Batch: WG1553287-3 WG1553287-4								
Tertiary-Amyl Methyl Ether	72		70		70-130	3		20
1,4-Dioxane	90		74		70-130	20		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	84		86		70-130
Toluene-d8	98		97		70-130
4-Bromofluorobenzene	93		93		70-130
Dibromofluoromethane	94		98		70-130



Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 QC Batch ID: WG1553287-6 WG1553287-7 QC Sample: L2150919-03 Client ID: MW-709S												
Methylene chloride	ND	10	8.3	83		9.0	90		70-130	8		20
1,1-Dichloroethane	ND	10	9.5	95		10	100		70-130	5		20
Chloroform	ND	10	8.2	82		8.8	88		70-130	7		20
Carbon tetrachloride	ND	10	9.4	94		10	100		70-130	6		20
1,2-Dichloropropane	ND	10	8.4	84		9.3	93		70-130	10		20
Dibromochloromethane	ND	10	8.2	82		9.0	90		70-130	9		20
1,1,2-Trichloroethane	ND	10	7.9	79		8.7	87		70-130	10		20
Tetrachloroethene	46	10	55	90		58	120		70-130	5		20
Chlorobenzene	ND	10	8.9	89		9.6	96		70-130	8		20
Trichlorofluoromethane	ND	10	9.5	95		10	100		70-130	5		20
1,2-Dichloroethane	ND	10	7.8	78		8.5	85		70-130	9		20
1,1,1-Trichloroethane	ND	10	8.8	88		9.4	94		70-130	7		20
Bromodichloromethane	ND	10	7.8	78		8.3	83		70-130	6		20
trans-1,3-Dichloropropene	ND	10	7.0	70		7.7	77		70-130	10		20
cis-1,3-Dichloropropene	ND	10	6.9	69	Q	7.6	76		70-130	10		20
1,1-Dichloropropene	ND	10	8.5	85		9.1	91		70-130	7		20
Bromoform	ND	10	8.0	80		8.8	88		70-130	10		20
1,1,2,2-Tetrachloroethane	ND	10	7.1	71		7.8	78		70-130	9		20
Benzene	ND	10	8.6	86		9.3	93		70-130	8		20
Toluene	ND	10	8.8	88		9.5	95		70-130	8		20
Ethylbenzene	ND	10	8.8	88		9.5	95		70-130	8		20
Chloromethane	ND	10	12	120		13	130		70-130	8		20
Bromomethane	ND	10	10	100		12	120		70-130	18		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 QC Batch ID: WG1553287-6 WG1553287-7 QC Sample: L2150919-03 Client ID: MW-709S												
Vinyl chloride	4.5	10	14	95		15	105		70-130	7		20
Chloroethane	ND	10	11	110		12	120		70-130	9		20
1,1-Dichloroethene	1.7	10	11	93		12	103		70-130	9		20
trans-1,2-Dichloroethene	ND	10	11	110		12	120		70-130	9		20
Trichloroethene	22	10	32	100		33	110		70-130	3		20
1,2-Dichlorobenzene	ND	10	8.7	87		9.5	95		70-130	9		20
1,3-Dichlorobenzene	ND	10	9.0	90		9.8	98		70-130	9		20
1,4-Dichlorobenzene	ND	10	8.9	89		9.7	97		70-130	9		20
Methyl tert butyl ether	ND	10	7.2	72		8.0	80		70-130	11		20
p/m-Xylene	ND	20	18	90		20	100		70-130	11		20
o-Xylene	ND	20	18	90		19	95		70-130	5		20
cis-1,2-Dichloroethene	8.1	10	17	89		18	99		70-130	6		20
Dibromomethane	ND	10	7.5	75		8.1	81		70-130	8		20
1,2,3-Trichloropropane	ND	10	7.1	71		7.9	79		70-130	11		20
Styrene	ND	20	17	85		19	95		70-130	11		20
Dichlorodifluoromethane	ND	10	8.4	84		9.0	90		70-130	7		20
Acetone	ND	10	7.2	72		8.4	84		70-130	15		20
Carbon disulfide	ND	10	8.8	88		9.6	96		70-130	9		20
Methyl ethyl ketone	ND	10	6.7	67	Q	7.2	72		70-130	7		20
Methyl isobutyl ketone	ND	10	7.0	70		7.7	77		70-130	10		20
2-Hexanone	ND	10	6.0	60	Q	6.7	67	Q	70-130	11		20
Bromochloromethane	ND	10	8.1	81		9.0	90		70-130	11		20
Tetrahydrofuran	ND	10	8.3	83		8.8	88		70-130	6		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 QC Batch ID: WG1553287-6 WG1553287-7 QC Sample: L2150919-03 Client ID: MW-709S												
2,2-Dichloropropane	ND	10	8.0	80		8.6	86		70-130	7		20
1,2-Dibromoethane	ND	10	8.0	80		8.7	87		70-130	8		20
1,3-Dichloropropane	ND	10	7.6	76		8.4	84		70-130	10		20
1,1,1,2-Tetrachloroethane	ND	10	8.7	87		9.4	94		70-130	8		20
Bromobenzene	ND	10	9.0	90		9.7	97		70-130	7		20
n-Butylbenzene	ND	10	8.8	88		9.6	96		70-130	9		20
sec-Butylbenzene	ND	10	9.3	93		9.9	99		70-130	6		20
tert-Butylbenzene	ND	10	9.2	92		10	100		70-130	8		20
o-Chlorotoluene	ND	10	8.6	86		9.2	92		70-130	7		20
p-Chlorotoluene	ND	10	8.3	83		9.1	91		70-130	9		20
1,2-Dibromo-3-chloropropane	ND	10	6.7	67	Q	7.6	76		70-130	13		20
Hexachlorobutadiene	ND	10	9.5	95		11	110		70-130	15		20
Isopropylbenzene	ND	10	9.0	90		9.6	96		70-130	6		20
p-Isopropyltoluene	ND	10	9.2	92		10	100		70-130	8		20
Naphthalene	ND	10	6.4	64	Q	7.2	72		70-130	12		20
n-Propylbenzene	ND	10	9.0	90		9.7	97		70-130	7		20
1,2,3-Trichlorobenzene	ND	10	7.7	77		8.4	84		70-130	9		20
1,2,4-Trichlorobenzene	ND	10	7.7	77		8.6	86		70-130	11		20
1,3,5-Trimethylbenzene	ND	10	8.2	82		8.9	89		70-130	8		20
1,2,4-Trimethylbenzene	ND	10	8.0	80		8.7	87		70-130	8		20
Diethyl ether	ND	10	6.9	69	Q	7.7	77		70-130	11		20
Diisopropyl Ether	ND	10	9.5	95		10	100		70-130	5		20
Ethyl-Tert-Butyl-Ether	ND	10	8.1	81		8.7	87		70-130	7		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03-07 QC Batch ID: WG1553287-6 WG1553287-7 QC Sample: L2150919-03 Client ID: MW-709S												
Tertiary-Amyl Methyl Ether	ND	10	6.7	67	Q	7.3	73		70-130	9		20
1,4-Dioxane	ND	500	300	60	Q	350	70		70-130	15		20

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
1,2-Dichloroethane-d4	91		91		70-130
4-Bromofluorobenzene	91		92		70-130
Dibromofluoromethane	103		101		70-130
Toluene-d8	95		97		70-130

METALS



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-01
 Client ID: MW-706S
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 10:30
 Date Received: 09/21/21
 Field Prep: Refer to COC

Sample Depth:
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	0.0172		mg/l	0.0005	--	1	09/27/21 18:18	09/29/21 21:45	EPA 3005A	97,6020B	WP



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

SAMPLE RESULTS

Lab ID: L2150919-02
 Client ID: DUP-1
 Sample Location: WALPOLE, MA

Date Collected: 09/21/21 00:00
 Date Received: 09/21/21
 Field Prep: Refer to COC

Sample Depth:
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	0.0182		mg/l	0.0005	--	1	09/27/21 18:18	09/29/21 21:50	EPA 3005A	97,6020B	WP



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1550520-1									
Arsenic, Dissolved	ND	mg/l	0.0005	--	1	09/27/21 18:18	09/29/21 21:17	97,6020B	WP

Prep Information

Digestion Method: EPA 3005A



Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1550520-2 WG1550520-3								
Arsenic, Dissolved	103		101		80-120	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

<u>Parameter</u>	<u>Native Sample</u>	<u>MS Added</u>	<u>MS Found</u>	<u>MS %Recovery</u>	<u>Qual</u>	<u>MSD Found</u>	<u>MSD %Recovery</u>	<u>Qual</u>	<u>Recovery Limits</u>	<u>RPD</u>	<u>Qual</u>	<u>RPD Limits</u>
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1550520-4 WG1550520-5 QC Sample: L2150919-01 Client ID: MW-706S												
Arsenic, Dissolved	0.0172	0.12	0.1404	103		0.1386	101		75-125	1		20

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2150919-01A	Plastic 120ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2150919-01A1	Plastic 120ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2150919-01A2	Plastic 120ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2150919-02A	Plastic 120ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2150919-03A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03A1	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03A2	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03B1	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03B2	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03C1	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-03C2	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-04A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-04B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-04C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-05A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-05B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-05C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-06A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-06B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-06C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)
L2150919-07A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Serial_No:10052111:08
Lab Number: L2150919
Report Date: 10/05/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2150919-07B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-10(14)



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

Data Qualifiers

the identification is based on a mass spectral library search.

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2150919
Report Date: 10/05/21

REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpeneol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpeneol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



CHAIN OF CUSTODY

PAGE 1 OF 1

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information
Client: **WOOD E & IS**
Address: **271 MILL ROAD**
CHELMSFORD, MA 01824
Phone: **(978) 727-4005**
Email: **craig.keating@woodplc.com**

Additional Project Information:
ORG #: 3651
GL CODE: 573000
PN: 3651180087.0005.****
PLEASE PUT THIS INFORMATION ON INVOICE.

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
50919 21	MW-7065	9/21/21	1030	GW	SPM
02	DUP-1	↑	-	GW	SPM
03	MW-7095		1035	GW	JEP
04	MW-7145		1210	GW	JEP
05	MB-MW-374		1230	GW	SPM
06	DUP-2		9/21/21	-	GW
07	TRIP BLANK	9/14/21	-	GW	PC

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO₃
D= H₂SO₄
E= NaOH
F= MeOH
G= NaHSO₄
H= Na₂S₂O₈
I= Ascorbic Acid
J= NH₄Cl
K= Zn Acetate
O= Other

Project Information
Project Name: **BIRD MACHINE**

Project Location: **WALPOLE, MA**
Project #: **3651180087.0005**
Project Manager: **CRAIG KEATING**
ALPHA Quote #:

Turn-Around Time
 Standard RUSH (only confirmed if pre-approved)
Date Due:

Date Rec'd in Lab: **9/21/21**
ALPHA Job #: **L2150919**
Report Information - Data Deliverables
 ADEx EMAIL
Billing Information
 Same as Client Info PO #:

Regulatory Requirements & Project Information Requirements
 Yes No MA MCP Analytical Methods Yes No CT RCP Analytical Methods
 Yes No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
 Yes No GW1 Standards (Info Required for Metals & EPH with Targets)
 Yes No NPDES RGP
 Other State /Fed Program Criteria

ANALYSIS

VOC: 6260 624 524.2
SVOC: ABN PAH
METALS: MCP 13 MCP 14 RCP 15
EPH: RCRA5 RCRA8 PPT3
VPH: Ranges & Targets Ranges Only
 PCB PEST
TPH: Quant Only Fingerprint

DISSOLVED AS-6020B

SAMPLE INFO
Filtration
 Field
 Lab to do
Preservation
 Lab to do

TOTAL # BOTTLES

Relinquished By: <i>Joseph E. Bergin</i>	Date/Time: 9/21/21 14:35	Received By: <i>Joseph E. Bergin</i>	Date/Time: 9/21/21 14:35
	9/21/21		9/21/21 1619
	9/21/21 1758	<i>Joseph E. Bergin</i>	9/21/21 1758

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)

Method Blank Summary Form 4 Volatiles

Client	: Wood Env & Infrastructure Solutions	Lab Number	: L2150919
Project Name	: BIRD MACHINE	Project Number	: 3651180087.0005
Lab Sample ID	: WG1553287-5	Lab File ID	: VQ211001A05
Instrument ID	: QUMBY		
Matrix	: WATER	Analysis Date	: 10/01/21 06:13

Client Sample No.	Lab Sample ID	Analysis Date
WG1553287-3LCS	WG1553287-3	10/01/21 04:12
WG1553287-4LCSD	WG1553287-4	10/01/21 04:42
MW-709S	L2150919-03	10/01/21 07:14
TRIP BLANK	L2150919-07	10/01/21 08:45
DUP-2	L2150919-06	10/01/21 09:15
MB-MW-374	L2150919-05	10/01/21 09:45
MW-714S	L2150919-04	10/01/21 10:16
MW-709SMS	WG1553287-6	10/01/21 14:48
MW-709SMSD	WG1553287-7	10/01/21 15:19

Calibration Verification Summary

Form 7

Volatiles

Client : Wood Env & Infrastructure Solutions
 Project Name : BIRD MACHINE
 Instrument ID : QUIMBY
 Lab File ID : VQ211001A01
 Sample No : WG1553287-2
 Channel :

Lab Number : L2150919
 Project Number : 3651180087.0005
 Calibration Date : 10/01/21 04:12
 Init. Calib. Date(s) : 09/13/21 09/13/21
 Init. Calib. Times : 08:26 14:25

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	114	0
Dichlorodifluoromethane	0.572	0.472	-	17.5	20	98	0
Chloromethane	10	12.4	-	-24*	20	187	0
Vinyl chloride	0.636	0.633	-	0.5	20	120	0
Bromomethane	0.25	0.282	-	-12.8	20	154	0
Chloroethane	0.289	0.353	-	-22.1*	20	152	0
Trichlorofluoromethane	0.804	0.736	-	8.5	20	108	0
Ethyl ether	0.219	0.169	-	22.8*	20	97	0
1,1-Dichloroethene	0.436	0.403	-	7.6	20	115	0
Carbon disulfide	1.319	1.208	-	8.4	20	112	0
Methylene chloride	0.47	0.412	-	12.3	20	110	0
Acetone	10	8.951	-	10.5	20	93	0
trans-1,2-Dichloroethene	0.481	0.455	-	5.4	20	116	0
Methyl tert-butyl ether	1.094	0.841	-	23.1*	20	95	0
Diisopropyl ether	1.875	1.907	-	-1.7	20	118	0
1,1-Dichloroethane	1.092	1.031	-	5.6	20	110	0
Ethyl tert-butyl ether	1.537	1.306	-	15	20	100	0
cis-1,2-Dichloroethene	0.561	0.516	-	8	20	112	0
2,2-Dichloropropane	1.006	0.861	-	14.4	20	103	0
Bromochloromethane	0.221	0.19	-	14	20	106	0
Chloroform	1.047	0.879	-	16	20	102	0
Carbon tetrachloride	0.851	0.777	-	8.7	20	107	0
Tetrahydrofuran	10	7.669	-	23.3*	20	91	0
Dibromofluoromethane	0.245	0.229	-	6.5	20	106	0
1,1,1-Trichloroethane	0.98	0.857	-	12.6	20	104	0
2-Butanone	10	8.36	-	16.4	20	95	0
1,1-Dichloropropene	0.82	0.716	-	12.7	20	102	0
Benzene	2.316	2.086	-	9.9	20	107	0
tert-Amyl methyl ether	1.272	0.923	-	27.4*	20	86	0
1,2-Dichloroethane-d4	0.293	0.247	-	15.7	20	98	0
1,2-Dichloroethane	0.669	0.537	-	19.7	20	96	0
Trichloroethene	0.594	0.534	-	10.1	20	111	0
Dibromomethane	0.242	0.189	-	21.9*	20	96	0
1,2-Dichloropropane	0.577	0.522	-	9.5	20	107	0
Bromodichloromethane	0.768	0.61	-	20.6*	20	95	0
1,4-Dioxane	0.00219	0.00199*	-	9.1	20	104	0
cis-1,3-Dichloropropene	0.908	0.685	-	24.6*	20	92	0
Chlorobenzene-d5	1	1	-	0	20	106	0
Toluene-d8	1.33	1.307	-	1.7	20	106	0
Toluene	1.743	1.653	-	5.2	20	107	0
4-Methyl-2-pentanone	0.138	0.106	-	23.2*	20	88	0
Tetrachloroethene	0.662	0.689	-	-4.1	20	115	0
trans-1,3-Dichloropropene	0.946	0.713	-	24.6*	20	90	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Wood Env & Infrastructure Solutions	Lab Number : L2150919
Project Name : BIRD MACHINE	Project Number : 3651180087.0005
Instrument ID : QUIMBY	Calibration Date : 10/01/21 04:12
Lab File ID : VQ211001A01	Init. Calib. Date(s) : 09/13/21 09/13/21
Sample No : WG1553287-2	Init. Calib. Times : 08:26 14:25
Channel :	

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,1,2-Trichloroethane	0.364	0.302	-	17	20	94	0
Chlorodibromomethane	0.541	0.467	-	13.7	20	98	0
1,3-Dichloropropane	0.809	0.671	-	17.1	20	92	0
1,2-Dibromoethane	0.401	0.349	-	13	20	96	0
2-Hexanone	0.287	0.23	-	19.9	20	86	0
Chlorobenzene	1.753	1.679	-	4.2	20	105	0
Ethylbenzene	3.442	3.273	-	4.9	20	104	0
1,1,1,2-Tetrachloroethane	0.652	0.598	-	8.3	20	102	0
p/m Xylene	1.321	1.313	-	0.6	20	108	0
o Xylene	1.248	1.209	-	3.1	20	105	0
Styrene	2.042	1.912	-	6.4	20	101	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	107	0
Bromoform	0.468	0.403	-	13.9	20	97	0
Isopropylbenzene	5.766	5.609	-	2.7	20	102	0
4-Bromofluorobenzene	0.937	0.869	-	7.3	20	97	0
Bromobenzene	1.154	1.153	-	0.1	20	110	0
n-Propylbenzene	6.851	6.738	-	1.6	20	103	0
1,1,2,2-Tetrachloroethane	0.796	0.638	-	19.8	20	92	0
2-Chlorotoluene	4.884	4.531	-	7.2	20	100	0
1,3,5-Trimethylbenzene	4.787	4.345	-	9.2	20	101	0
1,2,3-Trichloropropane	0.676	0.534	-	21*	20	88	0
4-Chlorotoluene	4.398	4.035	-	8.3	20	99	0
tert-Butylbenzene	4.29	4.253	-	0.9	20	106	0
1,2,4-Trimethylbenzene	4.392	3.907	-	11	20	100	0
sec-Butylbenzene	6.136	6.09	-	0.7	20	103	0
p-Isopropyltoluene	5.224	5.211	-	0.2	20	106	0
1,3-Dichlorobenzene	2.557	2.494	-	2.5	20	109	0
1,4-Dichlorobenzene	2.51	2.425	-	3.4	20	108	0
n-Butylbenzene	4.198	4.013	-	4.4	20	104	0
1,2-Dichlorobenzene	2.274	2.159	-	5.1	20	106	0
1,2-Dibromo-3-chloropropan	0.12	0.085	-	29.2*	20	83	0
Hexachlorobutadiene	0.833	0.829	-	0.5	20	112	0
1,2,4-Trichlorobenzene	1.199	1.028	-	14.3	20	103	0
Naphthalene	1.837	1.337	-	27.2*	20	89	0
1,2,3-Trichlorobenzene	1.032	0.872	-	15.5	20	102	0

* Value outside of QC limits.





MCP Presumptive Certainty Data Usability Assessment

Site Name: Bird Machine

Project Number: 3651180087.0005.****

Laboratory Name: Alpha Analytical

SDG Number: L2166365

Wood Sample IDs: MW-704S, MW-706S, MW-714S, DUP-1, MB-MW-374, MW-709S, DUP-2, MB-MW-362, MW-713D, MW-710M, LR-MW-122, and TRIP BLANK

Data Reviewed	Analysis	
	VOCs – 8260C	Dissolved Arsenic- 6020B
Chain of Custody	√	√
Sample Receipt (Preservation & Temperature)	√	Thermal preservation is not a requirement for this method. √
Holding Time	√	√
Blanks (Trip or Equipment)	√	None submitted
Method Blanks	√	√
MS/MSD	Sample MW-709S was submitted as the source for the MS/MSD. √	Sample MW-706S was submitted as the source for the MS/MSD. √
LCS/LCSD	The LCS/LCS RPDs, associated with samples MW-704S, MW-714S, MB-MW-374, MW-709S, DUP-2, MB-MW-362, MW-713D, MW-710M, and TRIP BLANK, for methyl ethyl ketone (21%), 2-hexanone (22%), and 1,4-dioxane (27%) exceeded the RPD limit of 20%. These analytes were non-detect and not impacted by the non-directional bias. No qualifications necessary.	

Data Reviewed	Analysis	
	VOCs – 8260C	Dissolved Arsenic- 6020B
Field Duplicates	Sample DUP-2 was submitted as a field duplicate of sample MW-709S. √	Sample DUP-1 was submitted as a field duplicate of sample MW-706S. √
Surrogate Recoveries	√	NA
Calibration Issues (Deficiencies noted in Narrative)	The initial calibration, associated with samples MW-704S, MW-714S, MB-MW-374, MW-709S, DUP-2, MB-MW-362, MW-713D, and MW-710M did not meet the method required minimum relative response factor (RRF) for the lowest calibration standard for 1,4-dioxane (0.00209), as well as the average response factor for 1,4-dioxane (0.00207). Wood UJ qualified 1,4-dioxane in associated samples due to the potential low bias.	None
Other Issues	None	None

Notes:

NA = Not Applicable

ND = Non-Detect

%R = Percent Recovery

RPD = Relative Percent Difference

Qualifiers:

J = Estimated

R = Data is rejected and not suitable for use

U = Non-detect

UJ = Reporting limit is considered estimated

Data Reviewer: Lauren McHugh

Reviewer: Denise King

Date: 12/20/2021

√ = Data Reviewed is to be considered acceptable within method/lab criteria and without qualification.



Reviewed by: Lauren McHugh
Date: 12/20/2021
Wood

ANALYTICAL REPORT

Lab Number:	L2166365
Client:	Wood Env & Infrastructure Solutions, Inc 271 Mill Road 3rd Floor Chelmsford, MA 01824
ATTN:	Craig Keating
Phone:	(978) 392-5337
Project Name:	BIRD MACHINE
Project Number:	3651180087.0005
Report Date:	12/16/21

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

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2166365-01	MW-704S	WATER	WALPOLE, MA	12/01/21 15:10	12/02/21
L2166365-02	MW-706S	WATER	WALPOLE, MA	12/01/21 16:05	12/02/21
L2166365-03	MW-714S	WATER	WALPOLE, MA	12/02/21 10:30	12/02/21
L2166365-04	DUP-1	WATER	WALPOLE, MA	12/01/21 00:00	12/02/21
L2166365-05	MB-MW-374	WATER	WALPOLE, MA	12/02/21 10:55	12/02/21
L2166365-06	MW-709S	WATER	WALPOLE, MA	12/02/21 11:55	12/02/21
L2166365-07	DUP-2	WATER	WALPOLE, MA	12/02/21 00:00	12/02/21
L2166365-08	MB-MW-362	WATER	WALPOLE, MA	12/02/21 11:55	12/02/21
L2166365-09	MW-713D	WATER	WALPOLE, MA	12/02/21 13:10	12/02/21
L2166365-10	MW-710M	WATER	WALPOLE, MA	12/02/21 13:25	12/02/21
L2166365-11	LR-MW-122	WATER	WALPOLE, MA	12/02/21 14:44	12/02/21
L2166365-12	TRIP BLANK	WATER	WALPOLE, MA	11/24/21 00:00	12/02/21

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
For any questions answered "No", please refer to the case narrative section on the following page(s).		

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

L2166365-01, -03, -05, -06, -07, -08, -09, -10, and -12: A copy of the continuing calibration standard is included as an addendum to this report.

In reference to question H:

L2166365-01, -03, -05, -06, -07, -08, -09, -10, and -12: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: 1,4-dioxane (0.002)

Average Response Factor: 1,4-dioxane

The WG1582368-3/-4 LCS/LCSD RPDs, associated with L2166365-01, -03, -05, -06, -07, -08, -09, -10, and -12, are above the acceptance criteria for 2-butanone (21%), 2-hexanone (22%) and 1,4-dioxane (27%).

Dissolved Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:  Melissa Sturgis

Title: Technical Director/Representative

Date: 12/16/21

QC OUTLIER SUMMARY REPORT

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics - Westborough Lab								
8260D	Batch QC	WG1582368-4	Methyl ethyl ketone	LCSD	21	20	01,03,05-10,12	non-directional bias
8260D	Batch QC	WG1582368-4	2-Hexanone	LCSD	22	20	01,03,05-10,12	non-directional bias
8260D	Batch QC	WG1582368-4	1,4-Dioxane	LCSD	27	20	01,03,05-10,12	non-directional bias

ORGANICS

VOLATILES

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-01
 Client ID: MW-704S
 Sample Location: WALPOLE, MA

Date Collected: 12/01/21 15:10
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 06:55
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	1.1		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-01
 Client ID: MW-704S
 Sample Location: WALPOLE, MA

Date Collected: 12/01/21 15:10
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-01
 Client ID: MW-704S
 Sample Location: WALPOLE, MA

Date Collected: 12/01/21 15:10
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	103		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-03
 Client ID: MW-714S
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 10:30
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 07:24
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	1.2		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	1.2		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-03
 Client ID: MW-714S
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 10:30
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	8.3		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	9.6		ug/l	1.0	--	1
1,2-Dichloroethene, Total	9.6		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-03
 Client ID: MW-714S
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 10:30
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-05
 Client ID: MB-MW-374
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 10:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 07:54
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	19		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-05
 Client ID: MB-MW-374
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 10:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	5.1		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.1		ug/l	1.0	--	1
1,2-Dichloroethene, Total	2.1		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-05
 Client ID: MB-MW-374
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 10:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-06
 Client ID: MW-709S
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 11:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 04:59
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	48		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	4.2		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	1.7		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-06
 Client ID: MW-709S
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 11:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	25		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	8.5		ug/l	1.0	--	1
1,2-Dichloroethene, Total	8.5		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-06
 Client ID: MW-709S
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 11:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-07
 Client ID: DUP-2
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 00:00
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 08:23
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	48		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	4.2		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	1.7		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-07
Client ID: DUP-2
Sample Location: WALPOLE, MA

Date Collected: 12/02/21 00:00
Date Received: 12/02/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	25		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	8.2		ug/l	1.0	--	1
1,2-Dichloroethene, Total	8.2		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-07
 Client ID: DUP-2
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 00:00
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	104		70-130



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-08
 Client ID: MB-MW-362
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 11:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 08:52
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-08
 Client ID: MB-MW-362
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 11:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	1.3		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	1.4		ug/l	1.0	--	1
1,2-Dichloroethene, Total	1.4		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-08
 Client ID: MB-MW-362
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 11:55
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	104		70-130



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-09
 Client ID: MW-713D
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 13:10
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 09:21
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	16		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-09
 Client ID: MW-713D
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 13:10
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	5.7		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	2.6		ug/l	1.0	--	1
1,2-Dichloroethene, Total	2.6		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-09
 Client ID: MW-713D
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 13:10
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	104		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-10
 Client ID: MW-710M
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 13:25
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 09:50
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	2.3		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-10
 Client ID: MW-710M
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 13:25
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	1.2		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-10
 Client ID: MW-710M
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 13:25
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	103		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-12
 Client ID: TRIP BLANK
 Sample Location: WALPOLE, MA

Date Collected: 11/24/21 00:00
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Matrix: Water
 Analytical Method: 141,8260D
 Analytical Date: 12/11/21 06:26
 Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	ND		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.40	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.40	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.40	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-12
Client ID: TRIP BLANK
Sample Location: WALPOLE, MA

Date Collected: 11/24/21 00:00
Date Received: 12/02/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene, Total	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-12
 Client ID: TRIP BLANK
 Sample Location: WALPOLE, MA

Date Collected: 11/24/21 00:00
 Date Received: 12/02/21
 Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	102		70-130

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 12/11/21 04:30
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01,03,05-10,12 Batch: WG1582368-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.40	--
cis-1,3-Dichloropropene	ND		ug/l	0.40	--
1,3-Dichloropropene, Total	ND		ug/l	0.40	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 12/11/21 04:30
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01,03,05-10,12 Batch: WG1582368-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene, Total	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
Methyl ethyl ketone	ND		ug/l	5.0	--
Methyl isobutyl ketone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 141,8260D
Analytical Date: 12/11/21 04:30
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01,03,05-10,12 Batch: WG1582368-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Diethyl ether	ND		ug/l	2.0	--
Diisopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	103		70-130



Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 Batch: WG1582368-3 WG1582368-4								
Methylene chloride	110		98		70-130	12		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	110		100		70-130	10		20
Carbon tetrachloride	110		110		70-130	0		20
1,2-Dichloropropane	100		98		70-130	2		20
Dibromochloromethane	100		93		70-130	7		20
1,1,2-Trichloroethane	100		94		70-130	6		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		100		70-130	10		20
Trichlorofluoromethane	110		110		70-130	0		20
1,2-Dichloroethane	100		94		70-130	6		20
1,1,1-Trichloroethane	110		110		70-130	0		20
Bromodichloromethane	100		97		70-130	3		20
trans-1,3-Dichloropropene	92		85		70-130	8		20
cis-1,3-Dichloropropene	99		92		70-130	7		20
1,1-Dichloropropene	110		100		70-130	10		20
Bromoform	100		93		70-130	7		20
1,1,2,2-Tetrachloroethane	100		91		70-130	9		20
Benzene	110		100		70-130	10		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Chloromethane	100		110		70-130	10		20
Bromomethane	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 Batch: WG1582368-3 WG1582368-4								
Vinyl chloride	110		110		70-130	0		20
Chloroethane	110		110		70-130	0		20
1,1-Dichloroethene	110		110		70-130	0		20
trans-1,2-Dichloroethene	110		100		70-130	10		20
Trichloroethene	110		100		70-130	10		20
1,2-Dichlorobenzene	110		100		70-130	10		20
1,3-Dichlorobenzene	110		100		70-130	10		20
1,4-Dichlorobenzene	110		100		70-130	10		20
Methyl tert butyl ether	95		81		70-130	16		20
p/m-Xylene	115		110		70-130	4		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	110		100		70-130	10		20
Dibromomethane	100		92		70-130	8		20
1,2,3-Trichloropropane	100		91		70-130	9		20
Styrene	110		105		70-130	5		20
Dichlorodifluoromethane	110		110		70-130	0		20
Acetone	100		89		70-130	12		20
Carbon disulfide	110		110		70-130	0		20
Methyl ethyl ketone	90		73		70-130	21	Q	20
Methyl isobutyl ketone	87		76		70-130	13		20
2-Hexanone	91		73		70-130	22	Q	20
Bromochloromethane	100		96		70-130	4		20
Tetrahydrofuran	86		71		70-130	19		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	LCS		LCSD		%Recovery Limits	RPD	RPD	
	%Recovery	Qual	%Recovery	Qual			Qual	Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 Batch: WG1582368-3 WG1582368-4								
2,2-Dichloropropane	110		100		70-130	10		20
1,2-Dibromoethane	100		94		70-130	6		20
1,3-Dichloropropane	100		93		70-130	7		20
1,1,1,2-Tetrachloroethane	100		99		70-130	1		20
Bromobenzene	110		100		70-130	10		20
n-Butylbenzene	120		120		70-130	0		20
sec-Butylbenzene	120		110		70-130	9		20
tert-Butylbenzene	110		110		70-130	0		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	110		110		70-130	0		20
1,2-Dibromo-3-chloropropane	93		82		70-130	13		20
Hexachlorobutadiene	100		100		70-130	0		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	110		110		70-130	0		20
Naphthalene	97		86		70-130	12		20
n-Propylbenzene	120		110		70-130	9		20
1,2,3-Trichlorobenzene	100		94		70-130	6		20
1,2,4-Trichlorobenzene	100		94		70-130	6		20
1,3,5-Trimethylbenzene	110		110		70-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20
Diethyl ether	97		91		70-130	6		20
Diisopropyl Ether	100		94		70-130	6		20
Ethyl-Tert-Butyl-Ether	100		87		70-130	14		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 Batch: WG1582368-3 WG1582368-4								
Tertiary-Amyl Methyl Ether	95		83		70-130	13		20
1,4-Dioxane	100		76		70-130	27	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		93		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	97		96		70-130
Dibromofluoromethane	102		99		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 QC Batch ID: WG1582368-6 WG1582368-7 QC Sample: L2166365-06 Client ID: MW-709S												
Methylene chloride	ND	10	11	110		10	100		70-130	10		20
1,1-Dichloroethane	ND	10	11	110		11	110		70-130	0		20
Chloroform	ND	10	11	110		10	100		70-130	10		20
Carbon tetrachloride	ND	10	12	120		11	110		70-130	9		20
1,2-Dichloropropane	ND	10	11	110		10	100		70-130	10		20
Dibromochloromethane	ND	10	10	100		9.7	97		70-130	3		20
1,1,2-Trichloroethane	ND	10	10	100		9.9	99		70-130	1		20
Tetrachloroethene	48	10	61	130		59	110		70-130	3		20
Chlorobenzene	ND	10	11	110		10	100		70-130	10		20
Trichlorofluoromethane	ND	10	12	120		12	120		70-130	0		20
1,2-Dichloroethane	ND	10	10	100		10	100		70-130	0		20
1,1,1-Trichloroethane	ND	10	12	120		11	110		70-130	9		20
Bromodichloromethane	ND	10	10	100		10	100		70-130	0		20
trans-1,3-Dichloropropene	ND	10	9.0	90		8.7	87		70-130	3		20
cis-1,3-Dichloropropene	ND	10	9.2	92		9.1	91		70-130	1		20
1,1-Dichloropropene	ND	10	11	110		11	110		70-130	0		20
Bromoform	ND	10	10	100		9.9	99		70-130	1		20
1,1,2,2-Tetrachloroethane	ND	10	10	100		9.9	99		70-130	1		20
Benzene	ND	10	11	110		11	110		70-130	0		20
Toluene	ND	10	11	110		10	100		70-130	10		20
Ethylbenzene	ND	10	11	110		11	110		70-130	0		20
Chloromethane	ND	10	11	110		11	110		70-130	0		20
Bromomethane	ND	10	10	100		11	110		70-130	10		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 QC Batch ID: WG1582368-6 WG1582368-7 QC Sample: L2166365-06 Client ID: MW-709S												
Vinyl chloride	4.2	10	16	118		16	118		70-130	0		20
Chloroethane	ND	10	12	120		12	120		70-130	0		20
1,1-Dichloroethene	1.7	10	13	113		13	113		70-130	0		20
trans-1,2-Dichloroethene	ND	10	11	110		11	110		70-130	0		20
Trichloroethene	25	10	38	130		37	120		70-130	3		20
1,2-Dichlorobenzene	ND	10	10	100		10	100		70-130	0		20
1,3-Dichlorobenzene	ND	10	11	110		10	100		70-130	10		20
1,4-Dichlorobenzene	ND	10	10	100		10	100		70-130	0		20
Methyl tert butyl ether	ND	10	8.9	89		9.0	90		70-130	1		20
p/m-Xylene	ND	20	23	115		22	110		70-130	4		20
o-Xylene	ND	20	22	110		22	110		70-130	0		20
cis-1,2-Dichloroethene	8.5	10	19	105		19	105		70-130	0		20
Dibromomethane	ND	10	10	100		10	100		70-130	0		20
1,2,3-Trichloropropane	ND	10	9.8	98		9.7	97		70-130	1		20
Styrene	ND	20	22	110		21	105		70-130	5		20
Dichlorodifluoromethane	ND	10	12	120		12	120		70-130	0		20
Acetone	ND	10	10	100		9.8	98		70-130	2		20
Carbon disulfide	ND	10	12	120		12	120		70-130	0		20
Methyl ethyl ketone	ND	10	8.8	88		8.8	88		70-130	0		20
Methyl isobutyl ketone	ND	10	8.8	88		8.7	87		70-130	1		20
2-Hexanone	ND	10	8.3	83		8.2	82		70-130	1		20
Bromochloromethane	ND	10	10	100		10	100		70-130	0		20
Tetrahydrofuran	ND	10	8.0	80		8.7	87		70-130	8		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

<i>Parameter</i>	<i>Native Sample</i>	<i>MS Added</i>	<i>MS Found</i>	<i>MS %Recovery</i>	<i>Qual</i>	<i>MSD Found</i>	<i>MSD %Recovery</i>	<i>Qual</i>	<i>Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 QC Batch ID: WG1582368-6 WG1582368-7 QC Sample: L2166365-06 Client ID: MW-709S												
2,2-Dichloropropane	ND	10	10	100		9.8	98		70-130	2		20
1,2-Dibromoethane	ND	10	9.9	99		9.6	96		70-130	3		20
1,3-Dichloropropane	ND	10	10	100		9.6	96		70-130	4		20
1,1,1,2-Tetrachloroethane	ND	10	10	100		9.9	99		70-130	1		20
Bromobenzene	ND	10	10	100		10	100		70-130	0		20
n-Butylbenzene	ND	10	12	120		11	110		70-130	9		20
sec-Butylbenzene	ND	10	12	120		11	110		70-130	9		20
tert-Butylbenzene	ND	10	11	110		11	110		70-130	0		20
o-Chlorotoluene	ND	10	11	110		11	110		70-130	0		20
p-Chlorotoluene	ND	10	11	110		11	110		70-130	0		20
1,2-Dibromo-3-chloropropane	ND	10	9.0	90		9.0	90		70-130	0		20
Hexachlorobutadiene	ND	10	10	100		10	100		70-130	0		20
Isopropylbenzene	ND	10	11	110		11	110		70-130	0		20
p-Isopropyltoluene	ND	10	11	110		11	110		70-130	0		20
Naphthalene	ND	10	9.1	91		9.4	94		70-130	3		20
n-Propylbenzene	ND	10	11	110		11	110		70-130	0		20
1,2,3-Trichlorobenzene	ND	10	9.6	96		9.8	98		70-130	2		20
1,2,4-Trichlorobenzene	ND	10	9.4	94		9.5	95		70-130	1		20
1,3,5-Trimethylbenzene	ND	10	11	110		11	110		70-130	0		20
1,2,4-Trimethylbenzene	ND	10	11	110		10	100		70-130	10		20
Diethyl ether	ND	10	9.4	94		9.9	99		70-130	5		20
Diisopropyl Ether	ND	10	10	100		10	100		70-130	0		20
Ethyl-Tert-Butyl-Ether	ND	10	9.4	94		9.4	94		70-130	0		20

Matrix Spike Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01,03,05-10,12 QC Batch ID: WG1582368-6 WG1582368-7 QC Sample: L2166365-06 Client ID: MW-709S												
Tertiary-Amyl Methyl Ether	ND	10	9.2	92		8.9	89		70-130	3		20
1,4-Dioxane	ND	500	450	90		460	92		70-130	2		20

Surrogate	MS		MSD		Acceptance Criteria
	% Recovery	Qualifier	% Recovery	Qualifier	
1,2-Dichloroethane-d4	99		99		70-130
4-Bromofluorobenzene	94		96		70-130
Dibromofluoromethane	103		102		70-130
Toluene-d8	98		97		70-130

METALS

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-02
 Client ID: MW-706S
 Sample Location: WALPOLE, MA

Date Collected: 12/01/21 16:05
 Date Received: 12/02/21
 Field Prep: Refer to COC

Sample Depth:
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	0.0045		mg/l	0.0005	--	1	12/14/21 14:22	12/15/21 14:03	EPA 3005A	97,6020B	SV



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-04
 Client ID: DUP-1
 Sample Location: WALPOLE, MA

Date Collected: 12/01/21 00:00
 Date Received: 12/02/21
 Field Prep: Refer to COC

Sample Depth:
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	0.0047		mg/l	0.0005	--	1	12/14/21 14:22	12/15/21 13:48	EPA 3005A	97,6020B	SV



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

SAMPLE RESULTS

Lab ID: L2166365-11
 Client ID: LR-MW-122
 Sample Location: WALPOLE, MA

Date Collected: 12/02/21 14:44
 Date Received: 12/02/21
 Field Prep: Refer to COC

Sample Depth:
 Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab											
Arsenic, Dissolved	0.0150		mg/l	0.0005	--	1	12/14/21 14:22	12/15/21 14:33	EPA 3005A	97,6020B	SV



Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 02,04,11 Batch: WG1582643-1									
Arsenic, Dissolved	ND	mg/l	0.0005	--	1	12/14/21 14:22	12/15/21 13:25	97,6020B	SV

Prep Information

Digestion Method: EPA 3005A



Lab Control Sample Analysis

Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 02,04,11 Batch: WG1582643-2 WG1582643-3								
Arsenic, Dissolved	102		102		80-120	0		20

Matrix Spike Analysis
Batch Quality Control

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 02,04,11 QC Batch ID: WG1582643-4 WG1582643-5 QC Sample: L2166365-02 Client ID: MW-706S												
Arsenic, Dissolved	0.0045	0.12	0.1217	98		0.1213	97		75-125	0		20

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Cooler Information

Cooler **Custody Seal**
A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2166365-01A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-01B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-01C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-02A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2166365-02A1	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2166365-02A2	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2166365-03A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-03B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-03C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-04A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2166365-05A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-05B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-05C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06A1	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06A2	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06B1	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06B2	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06C1	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-06C2	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-07A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)

Project Name: BIRD MACHINE

Project Number: 3651180087.0005

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2166365-07B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-07C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-08A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-08B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-08C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-09A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-09B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-09C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-10A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-10B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-10C	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-11A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		MCP-AS-6020S-10(180)
L2166365-12A	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)
L2166365-12B	Vial HCl preserved	A	NA		4.4	Y	Absent		MCP-8260-21(14)

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report



Project Name: BIRD MACHINE
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Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report



Project Name: BIRD MACHINE
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Lab Number: L2166365
Report Date: 12/16/21

Data Qualifiers

the identification is based on a mass spectral library search.

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: BIRD MACHINE
Project Number: 3651180087.0005

Lab Number: L2166365
Report Date: 12/16/21

REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D/8270E: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



CHAIN OF CUSTODY

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Date Rec'd in Lab: 12/2/21

ALPHA Job #: L2166365

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Project Information

Project Name: BIRD MACHINE

Project Location: WALPOLE, MA

Project #: 3651180087.0005

Project Manager: CRAIG KEATING

ALPHA Quote #:

Turn-Around Time

Standard RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

ADEX EMAIL

Billing Information

Same as Client Info PO #:

Client Information

Client: WOOD E & IS

Address: 271 MILL ROAD

CHELMSFORD, MA 01824

Phone: (978) 727-4005

Email: craig.keating@woodplc.com

Additional Project Information:
ORG #: 3651
GL CODE: 573000
PN: 3651180087.0005

PLEASE PUT THIS INFO ON INVOICE.

Regulatory Requirements & Project Information Requirements

Yes No MA MCP Analytical Methods Yes No CT RCP Analytical Methods
 Yes No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
 Yes No GW1 Standards (Info Required for Metals & EPH with Targets)
 Yes No NPDES RGP
 Other State /Fed Program Criteria

ANALYSIS	VOC: <input checked="" type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> 524.2
	SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH
	METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15
	METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PP13
	EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only
	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only
	PCB: <input type="checkbox"/> PEST
	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint
	DISSOLVED AS - 1020B

DISS AS ONLY

SAMPLE INFO

Filtration
 Field
 Lab to do
 Preservation
 Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials									Sample Comments	TOTAL # BOTTLES
		Date	Time												
66365.01	MW-704S	12/1/21	1510	GW	JEP	X									3
02	MW-706S	12/1/21	1605	GW	SPM									RUN MS/MSD	3
03	MW-714S	12/2/21	1030	GW	JEP	X									3
04	DUP-1	12/1/21	-	GW	SPM										1
05	MB-MW-374	12/2/21	1055	GW	SPM	X									3
06	MW-709S	12/2/21	1155	GW	JEP	X								RUN MS/MSD	9
07	DUP-2	12/2/21	-	GW	JEP	X									3
08	MB-MW-362	12/2/21	1155	GW	SPM	X									3
09	MW-713D	12/2/21	1310	GW	SPM	X									3
10	MW-710M	12/2/21	1325	GW	JEP	X									3

Container Type
 P= Plastic
 A= Amber glass
 V= Vial
 G= Glass
 B= Bacteria cup
 C= Cube
 O= Other
 E= Encore
 D= BOD Bottle

Preservative
 A= None
 B= HCl
 C= HNO₃
 D= H₂SO₄
 E= NaOH
 F= MeOH
 G= NaHSO₄
 H= Na₂S₂O₅
 I= Ascorbic Acid
 J= NH₄Cl
 K= Zn Acetate
 O= Other

Container Type	V						P
Preservative	B						C

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	12/2 1724	<i>[Signature]</i>	12/2/21 1700

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
 FORM NO: 01-01 (rev. 12-Mar-2012)



CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd In Lab: 12/2/21

ALPHA Job #: 22166365

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Project Information

Project Name: **BIRD MACHINE**
Project Location: **WALPOLE, MA**
Project #: **3651180087.0005**
Project Manager: **CRAIG KEATING**
ALPHA Quote #:

Report Information - Data Deliverables

ADEX EMAIL

Billing Information

Same as Client info PO #:

Client Information

Client: **WOOD E&IS**
Address: **271 MILL ROAD**
CHELMSFORD, MA 01824
Phone: **(978) 727-4005**
Email: **craig.keating@woodplc.com**

Turn-Around Time

Standard RUSH (only confirmed if pre-approved)

Date Due:

Regulatory Requirements & Project Information Requirements

Yes No MA MCP Analytical Methods Yes No CT RCP Analytical Methods
 Yes No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
 Yes No GW1 Standards (Info Required for Metals & EPH with Targets)
 Yes No NPDES RGP
 Other State /Fed Program Criteria

Additional Project Information:
ORG #: 3651
GL CODE: 573000
PN: 3651180087.0005

PLEASE PUT THIS INFO ON INVOICE.

ANALYSIS

VOC: 6260 624 524.2
SVOC: ABN PAH
METALS: MCP 13 MCP 14 RCP 15
METALS: RCRA5 RCRA8 PPT13
EPH: Ranges & Targets Ranges Only
VPH: Ranges & Targets Ranges Only
 PCB PEST
TPH: Quant Only Fingerprint

DISSOLVED AS - 60208

DISS AS ONLY

SAMPLE INFO

Filtration
 Field
 Lab to do

Preservation
 Lab to do

TOTAL BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
66365.11	LR-MW-122	12/0/21	1444	GW	SPM
12	TRIP BLANK	11/24/21	1500	GW	MD

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO₃
D= H₂SO₄
E= NaOH
F= MeOH
G= NaHSO₄
H= Na₂S₂O₃
I= Ascorbic Acid
J= NH₄Cl
K= Zn Acetate
O= Other

Container Type	V									P
Preservative	B									C

Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	12/2/21	<i>[Signature]</i>	12/2/21

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)

Method Blank Summary Form 4 Volatiles

Client	: Wood Env & Infrastructure Solutions	Lab Number	: L2166365
Project Name	: BIRD MACHINE	Project Number	: 3651180087.0005
Lab Sample ID	: WG1582368-5	Lab File ID	: VQ211211A04
Instrument ID	: QUIMBY		
Matrix	: WATER	Analysis Date	: 12/11/21 04:30

Client Sample No.	Lab Sample ID	Analysis Date
WG1582368-3LCS	WG1582368-3	12/11/21 03:03
WG1582368-4LCSD	WG1582368-4	12/11/21 03:32
MW-709S	L2166365-06	12/11/21 04:59
TRIP BLANK	L2166365-12	12/11/21 06:26
MW-704S	L2166365-01	12/11/21 06:55
MW-714S	L2166365-03	12/11/21 07:24
MB-MW-374	L2166365-05	12/11/21 07:54
DUP-2	L2166365-07	12/11/21 08:23
MB-MW-362	L2166365-08	12/11/21 08:52
MW-713D	L2166365-09	12/11/21 09:21
MW-710M	L2166365-10	12/11/21 09:50
MW-709SMS	WG1582368-6	12/11/21 13:43
MW-709SMSD	WG1582368-7	12/11/21 14:12

Calibration Verification Summary

Form 7

Volatiles

Client : Wood Env & Infrastructure Solutions	Lab Number : L2166365
Project Name : BIRD MACHINE	Project Number : 3651180087.0005
Instrument ID : QUIMBY	Calibration Date : 12/11/21 03:03
Lab File ID : VQ211211A01	Init. Calib. Date(s) : 12/07/21 12/07/21
Sample No : WG1582368-2	Init. Calib. Times : 08:51 13:44
Channel :	

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	83	0
Dichlorodifluoromethane	0.678	0.766	-	-13	20	89	0
Chloromethane	0.843	0.883	-	-4.7	20	84	0
Vinyl chloride	0.72	0.788	-	-9.4	20	89	0
Bromomethane	0.304	0.333	-	-9.5	20	94	0
Chloroethane	0.377	0.431	-	-14.3	20	94	0
Trichlorofluoromethane	0.749	0.859	-	-14.7	20	92	0
Ethyl ether	0.203	0.197	-	3	20	86	0
1,1-Dichloroethene	0.434	0.487	-	-12.2	20	92	0
Carbon disulfide	1.288	1.453	-	-12.8	20	92	0
Freon-113	0.428	0.496	-	-15.9	20	92	0
Iodomethane	0.589	0.555	-	5.8	20	81	0
Acrolein	0.042	0.039	-	7.1	20	84	0
Methylene chloride	0.499	0.536	-	-7.4	20	90	0
Acetone	0.069	0.07	-	-1.4	20	87	0
trans-1,2-Dichloroethene	0.524	0.575	-	-9.7	20	89	0
Methyl acetate	0.202	0.195	-	3.5	20	86	0
Methyl tert-butyl ether	0.913	0.864	-	5.4	20	84	0
tert-Butyl alcohol	0.018	0.015	-	16.7	20	76	0
Diisopropyl ether	1.842	1.946	-	-5.6	20	86	0
1,1-Dichloroethane	1.068	1.165	-	-9.1	20	88	0
Halothane	0.394	0.44	-	-11.7	20	90	0
Acrylonitrile	0.1	0.092	-	8	20	83	0
Ethyl tert-butyl ether	1.378	1.373	-	0.4	20	84	0
Vinyl acetate	0.943	0.944	-	-0.1	20	86	0
cis-1,2-Dichloroethene	0.569	0.611	-	-7.4	20	88	0
2,2-Dichloropropane	0.853	0.935	-	-9.6	20	88	0
Bromochloromethane	0.224	0.235	-	-4.9	20	87	0
Cyclohexane	1.066	1.186	-	-11.3	20	87	0
Chloroform	0.955	1.021	-	-6.9	20	91	0
Ethyl acetate	0.29	0.271	-	6.6	20	83	0
Carbon tetrachloride	0.722	0.825	-	-14.3	20	91	0
Tetrahydrofuran	0.11	0.095	-	13.6	20	82	0
Dibromofluoromethane	0.235	0.239	-	-1.7	20	83	0
1,1,1-Trichloroethane	0.836	0.934	-	-11.7	20	89	0
2-Butanone	0.116	0.104	-	10.3	20	83	0
1,1-Dichloropropene	0.766	0.817	-	-6.7	20	86	0
Benzene	2.25	2.527	-	-12.3	20	90	0
tert-Amyl methyl ether	1.031	0.98	-	4.9	20	81	0
1,2-Dichloroethane-d4	0.252	0.243	-	3.6	20	83	0
1,2-Dichloroethane	0.58	0.606	-	-4.5	20	88	0
Methyl cyclohexane	0.97	1.082	-	-11.5	20	86	0
Trichloroethene	0.559	0.608	-	-8.8	20	90	0

* Value outside of QC limits.



Calibration Verification Summary

Form 7

Volatiles

Client : Wood Env & Infrastructure Solutions	Lab Number : L2166365
Project Name : BIRD MACHINE	Project Number : 3651180087.0005
Instrument ID : QUIMBY	Calibration Date : 12/11/21 03:03
Lab File ID : VQ211211A01	Init. Calib. Date(s) : 12/07/21 12/07/21
Sample No : WG1582368-2	Init. Calib. Times : 08:51 13:44
Channel :	

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Dibromomethane	0.224	0.228	-	-1.8	20	86	0
1,2-Dichloropropane	0.571	0.6	-	-5.1	20	87	0
2-Chloroethyl vinyl ether	0.197	0.181	-	8.1	20	80	0
Bromodichloromethane	0.661	0.698	-	-5.6	20	87	0
1,4-Dioxane	0.00207	0.00209*	-	-1	20	91	0
cis-1,3-Dichloropropene	0.817	0.809	-	1	20	86	0
Chlorobenzene-d5	1	1	-	0	20	83	0
Toluene-d8	1.192	1.175	-	1.4	20	82	0
Toluene	1.516	1.65	-	-8.8	20	89	0
4-Methyl-2-pentanone	0.107	0.093	-	13.1	20	79	0
Tetrachloroethene	0.63	0.691	-	-9.7	20	89	0
trans-1,3-Dichloropropene	10	9.194	-	8.1	20	86	0
Ethyl methacrylate	0.461	0.428	-	7.2	20	80	0
1,1,2-Trichloroethane	0.302	0.306	-	-1.3	20	87	0
Chlorodibromomethane	0.431	0.434	-	-0.7	20	87	0
1,3-Dichloropropane	0.66	0.665	-	-0.8	20	87	0
1,2-Dibromoethane	0.335	0.342	-	-2.1	20	87	0
2-Hexanone	0.196	0.178	-	9.2	20	82	0
Chlorobenzene	1.562	1.69	-	-8.2	20	88	0
Ethylbenzene	2.858	3.148	-	-10.1	20	89	0
1,1,1,2-Tetrachloroethane	0.558	0.587	-	-5.2	20	89	0
p/m Xylene	1.055	1.212	-	-14.9	20	90	0
o Xylene	1.01	1.129	-	-11.8	20	90	0
Styrene	1.638	1.828	-	-11.6	20	89	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	86	0
Bromoform	0.406	0.418	-	-3	20	89	0
Isopropylbenzene	4.869	5.461	-	-12.2	20	88	0
4-Bromofluorobenzene	0.879	0.851	-	3.2	20	83	0
Bromobenzene	1.082	1.166	-	-7.8	20	89	0
n-Propylbenzene	5.779	6.655	-	-15.2	20	90	0
1,4-Dichlorobutane	1.265	1.296	-	-2.5	20	87	0
1,1,2,2-Tetrachloroethane	0.652	0.681	-	-4.4	20	90	0
4-Ethyltoluene	4.798	5.462	-	-13.8	20	91	0
2-Chlorotoluene	3.894	4.38	-	-12.5	20	90	0
1,3,5-Trimethylbenzene	4.147	4.69	-	-13.1	20	90	0
1,2,3-Trichloropropane	0.558	0.572	-	-2.5	20	88	0
trans-1,4-Dichloro-2-buten	0.238	0.238	-	0	20	88	0
4-Chlorotoluene	3.437	3.886	-	-13.1	20	90	0
tert-Butylbenzene	3.474	3.992	-	-14.9	20	90	0
1,2,4-Trimethylbenzene	4.094	4.571	-	-11.7	20	91	0
sec-Butylbenzene	5.209	6.118	-	-17.5	20	90	0
p-Isopropyltoluene	4.575	5.251	-	-14.8	20	90	0
1,3-Dichlorobenzene	2.192	2.44	-	-11.3	20	93	0

* Value outside of QC limits.



Calibration Verification Summary Form 7 Volatiles

Client : Wood Env & Infrastructure Solutions	Lab Number : L2166365
Project Name : BIRD MACHINE	Project Number : 3651180087.0005
Instrument ID : QUIMBY	Calibration Date : 12/11/21 03:03
Lab File ID : VQ211211A01	Init. Calib. Date(s) : 12/07/21 12/07/21
Sample No : WG1582368-2	Init. Calib. Times : 08:51 13:44
Channel :	

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,4-Dichlorobenzene	2.19	2.376	-	-8.5	20	91	0
p-Diethylbenzene	2.774	3.113	-	-12.2	20	89	0
n-Butylbenzene	4.039	4.79	-	-18.6	20	93	0
1,2-Dichlorobenzene	1.956	2.127	-	-8.7	20	92	0
1,2,4,5-Tetramethylbenzene	3.774	3.89	-	-3.1	20	86	0
1,2-Dibromo-3-chloropropan	0.102	0.095	-	6.9	20	84	0
1,3,5-Trichlorobenzene	1.762	1.848	-	-4.9	20	90	0
Hexachlorobutadiene	0.827	0.867	-	-4.8	20	90	0
1,2,4-Trichlorobenzene	1.457	1.462	-	-0.3	20	88	0
Naphthalene	2.211	2.146	-	2.9	20	85	0
1,2,3-Trichlorobenzene	1.222	1.258	-	-2.9	20	90	0

* Value outside of QC limits.





wood.