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120 St. James Avenue
5th Floor
Boston, MA 02116
United States
T +1.617.242.9222
F +1.617.242.9824
www.jacobs.com

February 20, 2024

Massachusetts Department of Environmental Protection
Attn: Stephen Johnson, Deputy Regional Director
Northeast Regional Office
150 Presidential Way
Woburn, Massachusetts 01801

Subject: Temporary Solution Statement and Phase IV Status Report, Former Varian Facility Site, Beverly, Massachusetts, MassDEP # 3-0485

Dear Mr. Johnson

On behalf of Varian Medical Systems, Inc., Jacobs Solutions Inc. (Jacobs) has prepared a Temporary Solution Statement and Phase IV Status Report, dated February 19, 2024, for the former Varian Facility Site in Beverly, Massachusetts. The submission of the Temporary Solution is the final action to be taken in response to Massachusetts Department of Environmental Protection's (MassDEP) *Termination of Remedy Operation Status, Notice of Noncompliance* letter dated February 18, 2022, and returns the former Varian Facility Site to compliance.

Previous actions that have been completed in response to the cited letter include:

- The submission of a Tier Classification in March 2022
- The submission of the final Phase II Comprehensive Site Assessment Addendum in March 2023
- The submission of the Revised Phase III Remedial Action Plan in March 2023 (finalized upon responding to comments in July 2023)
- The submission of Phase IV Remedy Implementation Plans in March 2023 (Part 1), September 2023 (Part 2), and November 2023 (Part 3) (finalized upon responding to comments in July 2023 and January 2024)

The Temporary Solution Statement and Phase IV Status Report is available at the MassDEP website (<https://eeaonline.eea.state.ma.us/Portal/#!/wastesite/3-0000485>). A hard copy of this report has also been provided to the subject site's Public Involvement Plan (PIP) repository at the Beverly City Library. A notice of availability for this document has been issued to the PIP mailing list established for this Site.

Please let us know if you have any questions related to this report.

Best regards.

Jacobs Solutions, Inc.

Raymond Cadorette, PMP
Project Manager
+1 774.571.1183
raymond.cadorette@jacobs.com

Matthew E. Hackman, P.E., CHMM, Inc.
Licensed Site Professional
+1 401.737.9211
matthewehackman@verizon.net

Date: 20 February 2024

Subject: Temporary Solution Statement and Phase IV Status Report, Former Varian Facility Site, Beverly, Massachusetts, MassDEP # 3-0485



Additional referenced documents:

Tier Classification:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=gcbiejcj>

Phase II Comprehensive Site Assessment Addendum:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=hehajcje>

Phase III Remedial Action Plan, December 2022:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=hjifbdbbe>

Revised Phase III Remedial Action Plan, March 2023:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=heifbigje>

Partial Phase IV Remedy Implementation Plan, Part 1:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=heifceej>

Partial Phase IV Remedy Implementation Plan, Part 2:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=hiibdbgj>

Partial Phase IV Remedy Implementation Plan, Part 3:

<https://eeaonline.eea.state.ma.us/EEA/fileviewer/FileViewer.aspx?fileEncryptionId=ijihafdj>

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Date: 20 February 2024

Subject: Temporary Solution Statement and Phase IV Status Report, Former Varian Facility Site, Beverly, Massachusetts, MassDEP # 3-0485



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Temporary Solution Statement and Phase IV Status Report

Version: Draft

Former Varian Facility Site, 150 Sohier Road, Beverly, Massachusetts 01915
MassDEP Site # 3-0485

February 19, 2024

Jacobs Solutions Inc.

120 St. James Avenue
5th Floor
Boston, MA 02116
United States

T +1.617.242.9222
F +1.617.242.9824
www.jacobs.com

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Acronyms and Abbreviations

1,1,1-TCA	1,1,1-trichloroethane
1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
AEPMM	Active Exposure Pathway Mitigation Measure
ATS	Akritas-Theil-Sen
AUL	Activity and Use Limitation
bgs	below ground surface
BWSC	MassDEP Bureau of Waste Site Cleanup
CAM	Compendium of Analytical Methods
cfm	cubic foot (feet) per minute
cis-1,2-DCE	cis-1,2-dichloroethene
CMR	Code of Massachusetts Regulations
COC	chemical of concern
CPI	Communications & Power Industries, Inc.
CRA	Comprehensive Response Action
CSA	Comprehensive Site Assessment
CSM	conceptual site model
DNAPL	dense nonaqueous phase liquid
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
ft/day	feet per day
GAC RCM	granular activated carbon reactive core mat
IRA	Immediate Response Action
ISB	in situ bioremediation
ISCO	in situ chemical oxidation
ISTR	in situ thermal remediation

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LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LSP	Licensed Site Professional
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MiHPT	membrane interface probe and hydraulic profile tool
mg/kg	milligram(s) per kilogram
mg/L	milligram(s) per liter
MS	matrix spike
MSD	matrix spike duplicate
NAPL	nonaqueous phase liquid
OHM	oil and/or hazardous material
OMM	operation, maintenance, and monitoring
QA	quality assurance
QC	quality control
PA/RB	permeable adsorptive/reactive barrier
PCE	tetrachloroethene
PDI	pre-design investigation
PID	photoionization detector
PIP	Public Involvement Plan
ppb	part(s) per billion
ppm	part(s) per million
PSL	Potential Source Location
PVC	polyvinyl chloride
RAA	remedial action alternative
RAM	Release Abatement Measure
RAP	Remedial Action Plan
ROS	Remedy Operation Status
ROW	right of way

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RTN	Release Tracking Number
SBGR	subgrade biogeochemical reactor
S mZVI PRZ	sulfidated micro zero-valent iron permeable reactive zone
SSDS	subslab depressurization system
SVE	soil vapor extraction
TBD	to be determined
TCE	trichloroethene
trans-1,2-DCE	trans-1,2-dichloroethene
UCL	upper concentration limit
VC	vinyl chloride
VOC	volatile organic compound

1. Introduction

Jacobs Solutions Inc. (Jacobs) has prepared this Temporary Solution Statement and Phase IV Status Report on behalf of Varian Medical Systems, Inc. (Varian) in accordance with the Massachusetts Contingency Plan (MCP) (Section 310 Code of Massachusetts Regulations [CMR] 40.0000) for the Former Varian Facility Site located at 150 Sohier Road, Beverly, Massachusetts (Site). This report combines the Temporary Solution Statement and Phase IV Status Report (the approach of combining these reports was approved by the Massachusetts Department of Environmental Protection [MassDEP]). Within this report, the term "Site" is used in accordance with the MCP, being any place or area where oil and/or hazardous material (OHM) from Varian's former facility have come to be located. The "facility" refers to Varian's former facility property. The Site location is shown on Figure 1-1. The Site has been the subject of multiple assessment activities, which have indicated that the release of OHM has occurred at the facility. The Site is listed as a disposal site under the MCP and was assigned Release Tracking Number (RTN) 3-0485 by MassDEP.

The Phase IV Status Report has been prepared in accordance with 310 CMR 40.0877(2), for sites where active operation and maintenance of a remedial action is conducted prior to the submittal of a Final Inspection Report and Phase IV Completion Statement. This report includes information collected during the period from July 1, 2023, to December 31, 2023. Appendix A of this report includes a copy of the MassDEP Bureau of Waste Site Cleanup (BWSC) transmittal form for this Phase IV Status Report (BWSC-108).

The Temporary Solution Statement has been prepared in accordance with 310 CMR 40.1057. This document summarizes the response actions conducted for the Site and references the associated documents prepared and submitted to MassDEP that support the conclusion that a Temporary Solution currently exists for the Site. As required by the MCP, this Temporary Solution Statement is being submitted electronically to MassDEP concurrently with a completed Permanent and Temporary Solution Statement Transmittal Form (BWSC-104) (Appendix B).

The Site is an active Public Involvement Plan (PIP) site under the MCP. Therefore, a copy of this report will be sent to the information repository established for the Former Varian Facility Site, and notice of availability will be issued to the PIP mailing list. In addition, this report will be presented at a public meeting and undergo a 20-day public comment period.

1.1 Disposal Site Name, Location, and Locus Map

Varian's former facility was located at 150 Sohier Road, Beverly, Essex County, Massachusetts. The property at 150 Sohier Road has the Universal Transverse Mercator coordinates of North 4,715,075 meters and East 345,475 meters (Longitude 70°52'57" West and Latitude 42°34'28" North). Figure 1-2, the Expanded Site Plan, identifies the location of 150 Sohier Road and the surrounding area.

The facility is located on approximately 24 acres of land and contains four large complexes of buildings covering approximately 250,000 square feet. The facility's southern portion includes an open field and a paved parking area. The central portion of the facility includes a building complex (Buildings 5, 5A, 8, and 10) (referred to as the Building 5 complex). North of the Building 5 complex is a paved parking area and to the northwest is another building complex (Buildings 1, 2, 3, 4, and 6) (referred to as the Building 3 complex). Northeast of the Building 3 complex is a wastewater treatment plant in Building 9. West of the Building 3 complex is former Building 7, which is now operated as Kelly Classics and Restoration. The estimated extent of the trichloroethene (TCE) groundwater plume above 0.005 milligrams per liter (mg/L)

is shown on Figure 1-3. This plume area represents an estimate of the current extent of the groundwater plume at the Site.

Currently, Communications & Power Industries, Inc. (CPI) maintains the use of Buildings 1 through 6, 8, 9, and 10 and other structures at the 150 Sohier Road property (Aptim 2023a).

1.2 Regulatory Reporting

On October 7, 2022, a Public Comment Draft Phase II Comprehensive Site Assessment (CSA) Addendum was submitted to MassDEP. The October 2022 Phase II CSA comprehensively assessed current Site conditions, including the nature and extent of volatile organic compounds (VOCs), which were identified as the primary compounds released at the facility, and provided an updated evaluation of risk based on these current Site conditions. A public meeting to present the October 2022 Phase II CSA took place on November 9, 2022. Comments were received during the public comment period, which ended on November 29, 2022, and responses to comments were provided on December 7, 2022. The Final Phase II CSA Addendum was submitted to MassDEP on March 10, 2023 (Aptim 2023b).

On December 7, 2022, a Public Comment Draft Phase III Remedial Action Plan (RAP) was submitted to MassDEP. A public meeting to present the Phase III RAP was held on January 24, 2023. Comments were received during the public comment period, which ended on February 14, 2023, and responses to comments were provided on March 16, 2023.

A Revised Phase III RAP was submitted to MassDEP on March 17, 2023 (Aptim 2023a). This report was presented at a public meeting on June 7, 2023. Comments were received during the public comment period, which ended on June 27, 2023, and responses to comments were provided on July 27, 2023. No changes to the Revised Phase III RAP were made as a result of the comments, and the document is considered final.

The Final Phase III RAP included the selected remedial action alternatives (RAAs) shown in Table 1-1.

Table 1-1. Selected Remedial Action Alternatives

Area	Selected Remedial Action Alternative
Building 3 Overburden Source Area	In situ thermal remediation (ISTR), In Situ Bioremediation (ISB) Polish, and Continued Soil Vapor Extraction (SVE) System Operation
Building 5 Overburden Source Area	ISB and Continued SVE System Operation
Bedrock	In Situ Chemical Oxidation (ISCO)
PSL10 Source Area	Reactive Treatment Zone
Downgradient Plume	Sulfidated Micro Zero-Valent Iron Permeable Reactive Zone (S mZVI PRZ) for Tozer Road and Granular Activated Carbon Reactive Core Mat (GAC RCM) for the Seep Areas

PSL = Potential Source Location

Along with the Revised Phase III RAP, a Public Comment Draft for the Phase IV Plan, Part 1 (*Partial Massachusetts Contingency Plan Phase IV Remedy Implementation Plan*), was submitted to MassDEP on March 17, 2023 (Aptim 2023c). This report included remedy implementation plans for the Building 3 Overburden Source Area (ISTR, ISB Polish, and Continued SVE System Operation) and the downgradient plume (Tozer Road S mZVI PRZ and Stream A Seep GAC RCM). The public meeting to present the Phase IV Plan, Part 1, was held on June 7, 2023 (in conjunction with the presentation of the Revised Phase III RAP).

Comments were received during the public comment period, which ended on June 27, 2023, and responses to comments were provided on July 27, 2023. No changes to the Phase IV Plan, Part 1, were made as a result of the comments, and the document is considered final.

A Public Comment Draft for the Phase IV Plan, Part 2 (*Partial Massachusetts Contingency Plan Phase IV Remedy Implementation Plan*), was submitted to MassDEP on September 20, 2023 (Jacobs 2023a). This report included remedy implementation plans for the Building 5 Overburden Source Area (ISB and Continued SVE System Operation) and the bedrock (ISCO).

A Public Comment Draft for the Phase IV Plan, Part 3 (*Partial Massachusetts Contingency Plan Phase IV Remedy Implementation Plan*), was submitted to MassDEP on November 7, 2023 (Jacobs 2023b). This report included the remedy implementation plan for PSL 10 (soil excavation and establishing a reactive treatment zone, specifically a subgrade biogeochemical reactor [SBGR]).

A public meeting to present the Phase IV Plan, Parts 2 and 3, took place on November 14, 2023. Comments were received during the public comment period, which ended on December 11, 2023. Responses to comments on the Phase IV Plan, Parts 2 and 3, were provided on January 9, 2024. No changes to the Phase IV Plan, Parts 2 and 3, were made as a result of the comments, and both documents are considered final.

1.3 Statement of Purpose and Report Organization for the Phase IV Status Report

In accordance with 310 CMR 40.0877(4), a Phase IV Status Report shall provide:

- *A description of the type and frequency of operation, maintenance and/or monitoring activities conducted;*
- *A description of any significant modifications of the operation, maintenance and/or monitoring program made since the [Remedy Implementation Plan] or any preceding Phase IV Status Report;*
- *An evaluation of the performance of the Comprehensive Remedial Alternative during the reporting period, including whether the initial implementation and operation of the Comprehensive Remedial Action indicates that the remedy is performing as designed to achieve the remedial goals of the Phase IV Remedy Implementation Plan described in 310 CMR 40.0874(3);*
- *A description of any conditions or problems noted during the period that are or may be affecting the performance of the Comprehensive Remedial Action;*
- *A description of any measures taken to correct conditions which are affecting the performance of the Comprehensive Remedial Action; and*
- *The name, license number, signature and seal of the [Licensed Site Professional (LSP)].*

The Phase IV Status Report has been developed in accordance with 310 CMR 40.0877(4) of the MCP to document the progress toward achieving a Permanent Solution for this Site. The report organization is shown in Table 1-2.

Table 1-2. Report Organization for Phase IV Status Report

310 CMR 40.0887	Description of Section	Report Section
(4)(a)	Type and frequency of operation, maintenance, and monitoring (OMM) activities conducted	2.1
(4)(b)	Significant modifications of the OMM program	2.2
(4)(c)	Evaluation of the performance of the Comprehensive Response Action (CRA) during the reporting period	2.3
(4)(d)	Conditions or problems affecting the performance of the CRA	2.5
(4)(e)	Measures taken to correct conditions which are affecting the performance of the CRA	2.6
(4)(f)	Name, license number, signature, and seal of the LSP	10.1 and Appendix A

1.4 Statement of Purpose and Report Organization for the Temporary Solution Statement

The Phase III RAP concluded that response actions to achieve a Permanent Solution are feasible at the Site and will be continued toward a Permanent Solution. In accordance with the MCP (310 CMR 40.1050(1)), the purpose of the Temporary Solution Statement is to accomplish the following:

- Demonstrate that a condition of No Substantial Hazard currently exists at the Site.
- Demonstrate that all sources of OHM contamination have been identified, characterized, and to the extent feasible, eliminated or controlled.
- Demonstrate that control of plumes of dissolved OHM in groundwater and vapor-phase OHM in the vadose zone has been achieved to the extent feasible.
- Demonstrate that non-stable nonaqueous phase liquid (NAPL), if present, has been addressed (removed and/or controlled to the extent feasible).

The report has been developed in accordance with 310 CMR 40.1057 of the MCP to support the conclusion that a Temporary Solution currently exists for the Site. The report organization is shown in Table 1-3.

Table 1-3. Report Organization for the Temporary Solution

310 CMR 40.1057	Description of Section	Report Section
(1)(a) and (2)(a)	Site description, location, and boundaries	Section 1.1
(2)(b)	Conceptual site model (CSM)	Section 3
(2)(c)	Sources of OHM	Section 3.2
(2)(d)	OHM migration	Section 3.4
(2)(e)	NAPL mobility	Section 3.4.4
(1)(b)	Methods used to characterize risk of harm to health, public welfare, and the environment	Section 3.5
(2)(g)	Substantial hazard statement	Section 4
(1)(f)	Active Exposure Pathway Mitigation Measures	Section 5
(2)(i)	OMM required to confirm conditions	Section 5.1
(1)(d)	Feasibility of the Permanent Solution	Section 6.1
(2)(j)	Definitive and enterprising steps to be taken to achieve a Permanent Solution	Section 6.2
(1)(e) and (2)(h)	Activity and Use Limitations (AULs)	Section 7
(1)(c)	Relationship of Temporary Solution to other Permanent or Temporary Solution Statements	Section 8
(1)(j) and (2)(k)	Data Usability Assessment and Data Representativeness Evaluation	Section 9
(1)(g)	Opinion from an LSP	Section 10.2
(1)(h)	Certification of the Temporary Solution Statement and all documents submitted	Appendix B

2. Phase IV Activities

This section includes Phase IV activities completed during the reporting period from July 1 to December 31, 2023.

2.1 Description of Type and Frequency of Operation, Maintenance, and Monitoring Activities Conducted (310 CMR 40.0877(4)(a))

The following sections describe the activities conducted during the reporting period from July 1 to December 31, 2023, with the following RAAs at the Site: ISTR for Building 3, SVE system operation for Buildings 3 and 5, permeable adsorptive/reactive barrier (PA/RB) for Tozer Road in the downgradient plume, GAC RCM for Stream A Seep in the downgradient plume, and reactive treatment zone for PSL10 Source Area. These activities are described in the following subsections.

2.1.1 Building 3 Overburden Source Area

The Building 3 SVE and ISTR systems are discussed in this section.

2.1.1.1 Soil Vapor Extraction System

The Building 3 SVE system was designed to reduce VOC concentrations in the vadose zone soil beneath Building 3 and to control potential vapor intrusion into the building. This SVE system currently includes four horizontal SVE wells and a treatment system trailer, as shown on Figures 2-1 and 2-2. SVE wells BLDG3-SVE1 and BLDG3-SVE2 were installed in December 2009 as part of an Immediate Response Action (IRA) Plan. The system installation and startup were completed in January 2010 (Shaw 2010a). The March 2010 IRA Status Report included an OMM manual developed so that the system is operated properly to meet the intended design criteria and to achieve Site remedial goals (Shaw 2010a). Two additional horizontal extraction wells, BLDG3-SVE3 and BLDG3-SVE4, were installed in 2014.

The SVE system currently consists of the following components:

- Four horizontal SVE wells (BLDG3-SVE1, BLDG3-SVE2, BLDG3-SVE3, and BLDG3-SVE4) installed beneath Building 3
- One 5-horsepower blower
- One moisture knock-out drum
- Remote monitoring (telemetry) of system operation with battery backup power
- Two 2,000-pound carbon vessels piped in series (with a spare third 2,000-pound carbon vessel)

As discussed in a previous report (Jacobs 2023c) and shown in Figure 2-3, mass recovery by the SVE system has reached asymptotic levels (meaning that the incremental amount of VOC mass removed by the SVE system over the reporting period is significantly smaller than historical VOC mass removal rates). This asymptotic mass recovery indicates that the system in its current configuration is now primarily functioning as a vapor intrusion mitigation system rather than a VOC mass removal SVE system. This is the expected progression for such systems during the final phase of their operation. The Building 3 SVE system continues to perform as a vapor intrusion mitigation system or subsurface depressurization system (SSDS) that provides protection against the migration of vapors into the building's indoor air by

depressurizing the subslab soil vapor to a slightly lower pressure than indoor air so that there is no pressure differential to cause vapor intrusion from the subslab to the building indoor air.

During the reporting period, regular, twice-monthly OMM Site visits were performed by personnel from Aptim Environmental and Infrastructure, LLC (Aptim) working in coordination with Jacobs. Activities performed during the OMM visits included checking and recording information from SVE system alarms, gauges, and meters and screening soil vapor recovered by the system with a photoionization detector (PID) to assess VOC recovery (influent) and off-gas treatment removal efficiency (effluent). The results of the SVE system monitoring conducted during the reporting period are summarized in Table 2-1 and VOC mass removal estimates are provided in Table 2-2. During this monitoring period, the total flow rate for the SVE system ranged from 126 to 165 cubic feet per minute (cfm), with some VOC detections (by PID) in extracted soil vapor (see Section 2.3.1).

For OMM visits with VOC concentrations in recovered soil vapor below detection limits, an estimated effluent reduction percentage across the carbon vessels could not be calculated. For OMM visits with detected VOC concentrations in recovered soil vapor, the corresponding effluent reading was nondetect, indicating 100% reduction in VOCs across the carbon vessels. For instances with VOC detections in the recovered soil vapor, the SVE system needs to demonstrate a greater than 95% reduction of VOCs across the carbon vessels (MassDEP 1994). In the absence of detection, however, that demonstration is unnecessary.

During this reporting period, the Building 3 SVE system experienced four short-term, unscheduled shutdowns. These shutdowns were the result of a high vacuum from condensate water buildup in the system lines. Planned system shutdowns occurred on November 24, 2023, for electrical maintenance and from December 4 to 15, 2023, for relocation of the SVE trailer during construction of the ISTR system. The system was fully operational for 163 days during the 183-day reporting period and did not have a prolonged amount of downtime (that is, greater than 25% of the reporting period).

2.1.1.2 In Situ Thermal Remediation System

To further define the northern edge of the thermal treatment area north of Building 3, two additional exterior soil borings, SB-501 and SB-504, were installed between September 6 and 8, 2023, north of Building 3. The locations of these borings are shown on Figure 2-1. Cascade Environmental completed the borings using a mini sonic drill with 4- and 6-inch drive casings. The soil samples were collected and screened with a PID at 2-foot intervals. Soil boring SB-501 was advanced to a total depth of 75 feet below ground surface (bgs), with soil headspace readings ranging from 0.2 parts per million (ppm) at a depth of 27 feet bgs, to the highest reading of 376.3 ppm at 50 feet bgs. Soil boring SB-504 was advanced to a total depth of 58 feet bgs, with soil headspace readings ranging from nondetect at 6 feet bgs, to the highest reading of 686 ppm from a sample collected at a depth of 38 feet bgs. Soil boring logs are provided in Appendix C. Following completion, the borings were grouted to the ground surface with a mixture of potable water, Quikrete Portland cement, and 5% Cetco high-solids powdered grout.

Soil samples were collected at multiple depths at each soil boring to assess the vertical distribution of VOCs in the soil. A total of eight samples from SB-501 and four samples from SB-504 were submitted for laboratory analysis of VOCs by U.S. Environmental Protection Agency (EPA) Method 8260 at SGS North America Inc (SGS). The results of these samples are summarized in Table 2-3 and indicate:

- At SB-501, TCE was detected at concentrations ranging from 0.0016 milligrams per kilogram (mg/kg) at 24 to 25 feet bgs to 4.95 mg/kg at 49 to 50 feet bgs.
- At SB-501, tetrachloroethene (PCE) was detected at concentrations ranging from 0.0058 mg/kg at 34 to 35 feet bgs to 0.766 mg/kg at 44 to 45 feet bgs.

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- At SB-504, TCE concentrations ranged from nondetect at 17 to 18 feet bgs and 51 to 52 feet bgs to 3.7 mg/kg at 37 to 38 feet bgs.
- At SB-504, PCE concentrations ranged from nondetect at 51 to 52 feet bgs to 1.95 mg/kg at 37 to 38 feet bgs.

A complete laboratory analytical report for the samples collected in September 2023 is included in Appendix D. These soil data were used to refine the ISTR wellfield design.

Wastes generated during soil boring installation were containerized in U.S. Department of Transportation (DOT)-approved drums and characterized. The material was subsequently transported offsite on November 18, 2023, under a hazardous waste manifest for appropriate disposal.

Field installation efforts for the Building 3 ISTR system have been underway since late November 2023. Parallel preconstruction efforts to prepare indoor spaces within the CPI facility for thermal treatment system installation have been underway since spring 2023. November 2023 outdoor construction efforts focused primarily on planning and Site preparation activities, which comprised the following tasks: waste container staging, ornamental vegetation removal, and placement of erosion control measures. The installation of piping and electrical services to support the relocation of the existing SVE and treatment equipment associated with Building 3 was completed in December 2023. Additional tasks included the relocation of the SVE equipment and the removal of a defunct storage shed (formerly used by the current facility operator, CPI) to provide drill rig access on the north side of the building for thermal treatment system installation.

On December 4, 2023, construction of the Building 3 thermal treatment system formally commenced. Initial construction efforts focused on two tasks: abandonment of historical monitoring wells that are incompatible with thermal treatment and subsurface utility clearance at outside locations where future installation of subsurface heating, extraction, or monitoring equipment is specified by the thermal contractor's design. As of December 31, 2023, the 21 historical monitoring wells slated for removal were successfully abandoned in place using a mixture of grout and lean cement. Additionally, more than 23 locations outside the building perimeter have been successfully cleared of utilities ahead of future subsurface drilling efforts.

Updated design drawings for the ISTR, including the final wellfield layout, are provided in Appendix E. The installation of temperature and pressure (TP) monitoring point TP-01, which commenced on December 12, 2023, marked the first day of installation of subsurface thermal treatment equipment. Since this time, four heaters and one multiphase extraction well have been installed. Through the end of December 2023, approximately 414 linear feet of drilling has been completed on the Site, which corresponds to roughly 4% of the total drilling footage necessary for system construction. In the months ahead, field construction efforts will be focused on the continued installation of system heaters and extraction and monitoring points in both vertical and angled configurations. Outdoor drilling completion is tentatively projected for April 2024 and will correspond with the transition of construction operations into the existing components stockroom located inside Building 3.

Efforts were made to limit the amount of waste generated during remedy implementation activities. Material disposal and waste generation was conducted in accordance with the general procedures described in this section. Wastes generated during Building 3 ISTR system installation activities have included soil, groundwater, and personal protective equipment. Wastes were characterized, and each waste was managed and disposed of in accordance with state and federal regulations. The first shipment of waste from this program was transported offsite on December 28, 2023, under a hazardous waste manifest for appropriate disposal (Appendix F).

2.1.2 Building 5 Overburden Source Area

The Building 5 SVE system and ISB are discussed in this section.

2.1.2.1 Soil Vapor Extraction System

The Building 5 SVE system was installed in December 2012 under a modified Phase III RAP and Phase IV Remedy Implementation Plan (Phase IV Plan) (Shaw 2012b). The system startup was completed in March 2013. Details regarding the Building 5 SVE installation, including a Final LSP Inspection and Phase IV Completion Statement, were included in the October 2013 Remedy Operation Status (ROS) Report (Shaw 2013). The SVE system was designed to reduce VOC concentrations in the vadose zone soil beneath Building 5. Having completed that function, this system is now being operated as an SSDS to mitigate potential vapor intrusion into the building's indoor air.

The SVE system initially included horizontal extraction wells BLDG5-SVE1 and BLDG5-SVE2. In August 2014, the SVE system was expanded to include horizontal extraction wells BLDG5-SVE3 and BLDG5-SVE4. Figure 2-4 illustrates the location of the horizontal extraction wells. The SVE system currently consists of the following components:

- Four horizontal soil vapor extraction wells (BLDG5-SVE1, BLDG5-SVE2, BLDG5-SVE3, and BLDG5-SVE4) installed beneath Building 5
- One 5-horsepower regenerative blower
- One moisture knock-out drum
- Remote monitoring (telemetry) of system operation with battery backup power

The October 2013 ROS Report included an operation manual developed so that the system is operated properly to meet the intended design criteria and achieve Site remedial goals (Shaw 2013). In an LSP Opinion, Removal of Off-Gas Controls, Buildings 3 and 5 SVE Systems (Aptim 2019), it was determined that exhaust/offgas treatment was no longer required for offgas from the Building 5 SVE based on a theoretical emission rate calculation. As a result, the granular activated carbon offgas treatment was removed from the system on September 27, 2019.

As discussed in previous reports (Jacobs 2023c) and shown in Figure 2-5, vapor recovery by the Building 5 system has reached asymptotic levels. This indicates that the SVE system in its current configuration has completed practicable removal of the VOCs in the vadose zone within its radius of influence and, thus, completed its function as an Active Remedial System. The Building 5 SVE system, now operating as an SSDS, continues to perform consistent with expectations and provides protection against the migration of vapors into the building's indoor air.

During the monitoring period, regular OMM Site visits were performed by Aptim personnel in coordination with Jacobs. Activities performed during regular OMM visits included checking and recording information from SVE system alarms, gauges, and meters and screening soil vapor extracted by the system with a PID to assess VOC removal from the subslab vapor. The results of regular OMM system monitoring conducted from July 1 to December 31, 2023, are summarized in Table 2-3, and VOC mass removal estimates are provided in Table 2-4. During this monitoring period, the total flow rate for the SVE system ranged from 132 to 188 cfm, with nondetectable (by PID) VOC concentrations in extracted soil vapor.

During the reporting period, the Building 5 SVE system experienced one short-term (one day), scheduled shutdown for facility electrical maintenance that lasted less than half a day. The system was fully

operational for 181 days during the 182-day reporting period and did not have a prolonged amount of downtime (that is, greater than 25% of the reporting period).

2.1.2.2 In Situ Bioremediation

As discussed in the Phase IV Plan, Part 2 (Jacobs 2023a), additional investigation work is planned to refine the design of the ISB remedy. Additional construction details and drawings for the Building 5 ISB remedy will be provided in subsequent Temporary Solution Status Reports. The anticipated schedule for the Building 5 Overburden Source Area ISB remedial implementation activities includes the following:

- Installation of performance monitoring and injection well network, baseline sampling, and data evaluation: spring to summer 2024
- Installation and baseline sampling of additional performance monitoring well or injection well network (if needed): summer 2024
- First round of ISB injections: fall to winter 2024
- Post-injection performance monitoring: monthly (winter 2024), followed by quarterly (winter 2025 to summer 2026), then semiannually for 2.5 years (2027 through 2028), and then annually (starting in 2029)
- Subsequent round(s) of ISB injections (if necessary): to be determined (TBD) based on monitoring data

2.1.3 Bedrock – In Situ Chemical Oxidation

As discussed in the Phase IV Plan, Part 2 (Jacobs 2023a), additional investigation work is planned to refine the design of the ISCO remedy. Additional construction details and drawings for the bedrock ISCO remedy will be provided in a subsequent Temporary Solution Status Report. The anticipated schedule for the bedrock ISCO remedial implementation activities includes the following:

- Installation of monitoring wells, baseline sampling, and data evaluation: spring to summer 2024
- Geophysical testing: spring and summer 2024
- Installation of injection well network: summer to fall 2024
- First round of ISCO injections: fall 2024
- Post-injection performance monitoring: fall 2024 to winter 2025
- Additional rounds of ISCO injections: TBD based on monitoring
- Continued post-injection performance monitoring: TBD, quarterly between injections

2.1.4 PSL10 – Reactive Treatment Zone

In September and October 2023, five new monitoring wells (OB-61-S, OB-62-DO, OB-63-DO, OB-64-DO, and OB-65-DO) were installed in the PSL10 Source Area based on results from the soil vapor survey conducted in August 2023, which warranted additional groundwater investigation in the area. Monitoring well locations are shown on Figure 1-2, and soil boring logs and well construction diagrams were provided in the Phase IV Plan, Part 3 (Jacobs 2023b). On October 12 and 13, 2023, four groundwater samples were collected from the newly installed PSL10 Source Area monitoring wells. Completion of monitoring well OB-61-S was delayed until October, and sampling was completed on December 7, 2023. The results are provided in Table 2-6 and can be summarized as follows:

- TCE was detected at concentrations ranging from 0.053 mg/L at OB-62-S to 18 mg/L at OB-63-DO.

- PCE was detected at concentrations ranging from 0.0093 mg/L at OB-62-S to 7.93 mg/L at OB-63-DO.
- cis-1,2-dichloroethene (cis-1,2-DCE) concentrations ranged from nondetect to 3.41 mg/L at OB-63-DO.
- Vinyl chloride (VC) was not detected above a reporting limit of 0.001 mg/L.

Groundwater samples were collected using low-flow sampling procedures, and field parameters, including depth to water, pH, oxidation reduction potential, specific conductivity, turbidity, temperature, and dissolved oxygen, were recorded along with visual observations. Groundwater samples were analyzed by a laboratory for VOCs via EPA Method 8260. Laboratory analytical reports are included in Appendix D.

Investigation-derived wastes generated during drilling in the PSL10 area were containerized in DOT-approved drums and characterized. The material was subsequently transported offsite on November 18, 2023, under a hazardous waste manifest for appropriate disposal (Appendix F).

The implementation plan for the PSL10 area was discussed in the Phase IV Plan, Part 3 (Jacobs 2023b), and the November 2023 PIP meeting. Additional construction details and drawings for the PSL10 remedy will be provided in a subsequent Temporary Solution Status Report. The anticipated schedule for the reactive treatment zone remedial implementation activities includes the following:

- Aquifer testing on existing wells and system design: winter to spring 2024
- Excavation and installation of the SBGR (with piping) and installation of extraction wells: spring to summer to fall 2024
- Baseline sampling and system startup: fall 2024
- Post-installation performance monitoring: monthly (fall 2024 to winter 2025), quarterly for 2 years (winter 2025 to winter 2027), then optimization of the monitoring network after 2 years

2.1.5 Downgradient Plume

The Tozer Road Right of Way and Stream A Seep areas are discussed in this section.

2.1.5.1 Tozer Road Right of Way – Permeable Adsorptive/Reactive Barrier

Jacobs is currently performing a pre-design investigation (PDI) to support the design and implementation of a PA/RB along Tozer Road to reduce the mass flux in overburden groundwater from source areas to the downgradient area. The PA/RB along Tozer Road will provide treatment of groundwater in the area and serve as a secondary treatment zone for potential VOC migration resulting from treatment in the source areas at 150 Sohier Road. As part of the PDI, a membrane interface probe and hydraulic profile tool (MiHPT) investigation is planned starting in February 2024.

In preparation for the MiHPT investigation, comprehensive scopes of work and supporting survey, utility clearance, and traffic control activities were completed, and subcontractors were procured for these services. A traffic management plan was prepared and approved by the City of Beverly Traffic Sergeant. A biological review and delineation report was conducted along a select stretch of Tozer Road to determine if species and habitats of special concern, and/or wetlands are in the vicinity of the planned PDI. Additionally, a courtesy notice was sent to the Beverly Conservation Commission to inform the commission that the activities to be conducted are exempt from the state and Beverly Wetlands Protection

Ordinance. A DigSafe ticket and a request to the City of Beverly for the water and sewer line mark out were made on January 3, 2024.

Varying outreach was performed to make the public and nearby properties aware of upcoming activities. Notifications of the upcoming work were sent to state and city officials on the PIP notification list and to property owners along the stretch of Tozer Road where work was to be conducted. On January 3, 2024, a robocall was sent to neighborhoods in the vicinity of Tozer Road to notify residents of the upcoming work and associated lane closures on Tozer Road.

Survey activities began on January 5, 2024, to identify the right of way (ROW) boundaries. Following the completion of the ROW boundary survey, a third-party utility mark out was conducted, followed by the MiHPT investigation which began on February 14, 2024. Upon completion of the MiHPT investigation, collocated soil and groundwater sampling will be conducted to correlate MiHPT results to VOC concentrations. Following the completion of soil and groundwater sampling, flux meters will be deployed down four existing monitoring wells for 2 weeks prior to retrieval to measure groundwater velocity.

The goal of the PDI is to characterize the VOC mass flux distribution along Tozer Road in the overburden aquifer. Data collected during the MiHPT investigation, collocated soil and groundwater sampling, and flux meter deployment will be used to refine and finalize the design of the PA/RB. Jacobs will be working with a subcontractor that has been selected to design and implement the PA/RB. Once the design is finalized, the PA/RB will be implemented via direct push technology injection points, with the injection of colloidal activated carbon and S mZVI. Prior to injections, performance monitoring wells will be installed and baseline sampling conducted. Following the completion of the PA/RB, additional performance wells will be installed through the barrier, and the PA/RB will be monitored through periodic groundwater sampling. It is anticipated that groundwater sampling will be conducted quarterly for year 1, semiannually for years 2 and 3, and annually for years 4 and 5.

2.1.5.2 Stream A Seep – Granular Activated Carbon Reactive Core Mat

To reduce the VOC concentrations found in a nearby seep in Stream A, GAC RCMs were successfully installed over two identified water seeps in October 2023. Figure 2-6 includes their locations. The permeable composite mat encapsulates a ¼-inch-thick layer of granular activated carbon between two layers of adhered, nonwoven geotextile. Based on vendor discussions and professional judgment, the expected GAC RCM changeout interval under these conditions is 2 years. To provide additional protection, three layers of mat were installed over each seep (¾-inch total thickness). The GAC RCM mats were specified for the Stream A Seep barrier control based on the VOC concentrations and seep water flow rate observed.

Sedimentation and erosion controls, including a silt fence and construction mats, and an equipment staging area were installed along with the GAC RCMs and will be maintained until natural stabilization of the bank is observed. Following installation, sedimentation and erosion controls were inspected by Jacobs field personnel on October 24, 2023, and have continued to be inspected regularly along with the GAC RCM inspections.

Regular inspections of the Stream A GAC RCMs following installation have been conducted monthly, with additional inspections conducted following major rain events as outlined in the Phase IV Plan, Part 1. The first inspection was conducted on November 16, 2023, and additional inspections were conducted on November 22 and 28 and December 5, 11, 20, and 28, 2023. Inspections will continue to be conducted for the first 6 months (that is, through April 2024) and then may be reduced in frequency.

Surface water samples will be collected quarterly for analysis of VOCs upstream, adjacent to the two GAC RCMs, and downstream of the mats for the first year after installation. After the first year, the sampling frequency will be reduced to semiannual. Results of the surface water sampling conducted following GAC RCM installation are discussed in Section 2.3.3 of this report. Surface water sampling locations are depicted on Figure 2-6.

During the installation of the two RCMs in October 2023, an unknown 4-inch-diameter clay drainpipe was identified within the southern work area. This drainpipe is likely associated with the former farm that existed in this location in the 1940s. The pipe appears to be receiving and directing groundwater toward the stream and is the likely seep source at the bank. One grab sample was collected from the drainpipe outwash and analyzed for VOCs by EPA Method 8260 at SGS. The laboratory analytical report for the sample is included in Appendix D. The sample indicated the presence of VOCs, including PCE (0.115 mg/L), TCE (0.391 mg/L), cis-1,2-DCE (0.34 mg/L), trans-1,2-dichloroethene (trans-1,2-DCE) (0.002 mg/L) and VC (0.0043 mg/L). These concentrations are similar to the water sample previously collected at the seep location GDS-03. For example, in May 2023, PCE and TCE were detected at GDS-03 at concentrations of 0.11 mg/l and 0.42 mg/L, respectively. Existing Site data have been evaluated, and VOC levels in the stream have been shown to pose No Significant Risk. The presence of this drainpipe does not change that conclusion. However, it does provide a better understanding of why water is seeping from the Stream A bank in this area. A video inspection of the drainpipe is planned to provide additional information on the discovered pipe. The GAC RCMs will remain in place to treat water and prevent access to the seep locations. Planned groundwater treatment at 150 Sohier Road and along Tozer Road are also expected to reduce VOC levels in groundwater near the stream.

To assess groundwater conditions in the area of the GAC RCMs, one shallow piezometer (P-32) was installed adjacent to the northern RCM. Well P-32 was constructed with a 4-foot steel well drive point set 7 feet below grade (Appendix C). A groundwater sample was collected from P-32 on December 7, 2023, and submitted for analysis of VOCs by EPA Method 8260 at SGS. Results of that sample indicate the presence of PCE (0.0013 mg/L), TCE (0.0046 mg/L), cis-1,2-DCE (0.263 mg/L), trans-1,2-DCE (0.0203 mg/L), and VC (0.0061 mg/L).

2.2 Significant Modifications to OMM Program (310 CMR 40.0877(4)(b))

Jacobs did not identify significant modifications to the OMM program during the reporting period that would affect the selected RAAs.

2.3 Performance of Remedial Action (310 CMR 40.0877(4)(c))

As stated in the Phase IV Plan, Parts 1, 2, and 3, the objective of the CRA is to maintain a Temporary Solution and continue to progress toward a Permanent Solution. The individual selected RAAs that collectively comprise the CRA were previously discussed in Section 1.3. The RAAs that were active and operating during the reporting period described in this report include the Building 3 and Building 5 SVE systems and the Stream A Seep GAC RCMs. The SVE systems were designed to reduce VOC concentrations in the vadose zone soils beneath the two facility buildings, as well as to mitigate potential vapor intrusion into the buildings. The Building 3 and Building 5 SVE systems previously operated at the Site under ROS and met the definition of an Active Exposure Pathway Mitigation Measure (AEPMM) established in the June 2014 revisions to the MCP. This report provides information confirming that the Building 3 and Building 5 SVE systems continue to meet the requirements for an AEPMM. Documentation is also provided

in Section 2.3.3 detailing the performance of the Stream A Seep GAC RCM. The CRA will continue to be evaluated, and RAAs modified, if necessary, to improve effectiveness and ability to achieve closure.

2.3.1 Building 3 – Soil Vapor Extraction System

Monitoring of the applied vacuum beneath the Building 3 slab is conducted at subslab vapor monitoring points installed inside the building (Figures 2-1 and 2-2). The monitoring data (Table 2-1) indicate that vacuum influence from the operation of the SVE system is observed at BLDG3-VP1, BLDG3-VP2, BLDG3-VP3, and BLDG3-VP5, demonstrating successful vapor intrusion mitigation beneath this portion of the Building 3 slab.

The PID measurements in extracted soil vapor are used to estimate the VOC mass removed by the treatment system. The VOC mass removal rate and total VOC mass removed by the Building 3 SVE system are presented in Table 2-2 and illustrated on Figure 2-3. Since its activation in December 2009, the Building 3 SVE system has removed an estimated 1,927 pounds of VOCs from beneath Building 3.

As noted in Section 2.1.1.1, during this reporting period (July 1 to December 31, 2023), the VOC concentrations in extracted soil vapor measured with the PID ranged from below detection to 0.9 ppm with a total of approximately 2 pounds of VOCs removed via the SVE system over the 6-month monitoring period. The mass removed during this reporting period is 0.1 percent of the total mass removed to date, indicating that vapor recovery has reached asymptotic levels, as discussed previously (see also Figure 2-3), and the concept that the SVE system has transitioned to an SSDS.

The existing SVE extraction wells are constructed of polyvinyl chloride (PVC), which is not compatible with ISTR temperatures. These wells will, therefore, be removed. Stainless steel extraction wells will be installed as part of the ISTR system, and when the ISTR system is activated, the ISTR vapor extraction system will be operated in place of the existing Building 3 SVE system. When ISTR is completed, select extraction wells will be connected to the existing SVE system and operated, as needed, for continued vapor recovery during ISB operations. A condition of No Significant Risk in indoor air will be maintained. The proposed remediation activities for the Building 3 Source Area (ISTR and ISB polish), which are described in the Revised Phase III RAP (Aptim 2023a) and the Phase IV Plan, Part 1 (Aptim 2023c), are expected to substantially reduce potential migration of VOCs into indoor air.

2.3.2 Building 5 – Soil Vapor Extraction System

Monitoring of the applied vacuum beneath the Building 5 slab is conducted at subslab vapor monitoring points installed inside the building (Figure 2-4). The monitoring data (Table 2-4) indicate that vacuum influence from the operation of the SVE system is observed at most of the vapor monitoring locations, demonstrating successful vapor intrusion mitigation beneath this portion of the Building 5 slab.

The PID measurements in extracted soil vapor are used to estimate the VOC mass removed by the treatment system. The VOC mass removal rate and total VOC mass removed by the Building 5 SVE system are presented in Table 2-4 and illustrated on Figure 2-5. Since its activation on March 11, 2013, the Building 5 SVE system has removed an estimated 131 pounds of VOCs from beneath Building 5.

As noted in Section 2.1.3, during this reporting period (July 1 to December 31, 2023), the VOC concentrations in extracted soil vapor measured with the PID were below its detection limit, such that no measurable amount of VOC was removed by the Building 5 SVE system from beneath the building. This is consistent with the finding that vapor recovery has reached asymptotic levels, as discussed previously (see also Figure 2-5), and the concept that the SVE system has transitioned to an SSDS.

2.3.3 Downgradient Plume, Stream A Seep – Granular Activated Carbon Reactive Core Mat

Sedimentation and erosion controls were inspected following installation on October 24, 2023. According to the erosion and sediment control inspections completed to date, the integrity of the sedimentation and erosion controls (silt fence, hay bales, construction mats, and equipment staging area) has not been compromised, and controls are operating as anticipated.

Regular inspections of the Stream A GAC RCM have been conducted to date. As discussed in Section 2.1.5.2, a total of seven inspections have been completed in November and December 2023. Inspections will continue to be conducted monthly and following major rain events for the first 6 months and then may be reduced in frequency. The inspection checklist used during inspections includes observations of conditions that may affect the performance of the GAC RCM, such as erosion, scouring, vandalism, or other signs of damage. So far, no issues have been identified that may affect the GAC RCM performance.

Analytical results of surface water samples collected from Stream A in December 2023, following GAC RCM installation, are summarized herein. Laboratory analytical reports for the samples are included in Appendix D. Analytical results for Stream A surface water samples collected since December 2022 are included in Table 2-7 and organized from upgradient to downgradient locations. Surface water samples were also collected from the Unnamed Stream (Table 2-8) and are discussed in Section 3.4.2.3.

On December 4, 2023, surface water samples were collected from Stream A at STRM-A-SCDS (upstream of the RCMs), at STR-19 (adjacent to the RCMs), and at STR-18 (downstream of the RCMs). Analytical results for these samples were generally consistent with the results of the May 2023 sampling event (Table 2-7).

Future sample results from these locations will be evaluated to assess potential trends following GAC RCM installation.

2.4 Data Usability Assessment for Phase IV Sampling Results

The following assessment was completed for laboratory analysis included in this document. The primary goal of this assessment is to confirm that the data relied upon are both scientifically valid and defensible. This evaluation included a review of available results for data appropriateness, analytical accuracy and precision, and data suitability. The following laboratory quality assurance (QA)/quality control (QC) parameters were evaluated:

- Holding times
- Laboratory blanks
- Laboratory control samples
- Laboratory duplicates
- Surrogate spike recoveries

Samples were collected using standard and appropriate field practices by qualified environmental consultants. Jacobs reviewed the laboratory reports to determine if samples were analyzed within holding times and to verify that surrogate recoveries, laboratory control samples (blank spike), method blank, and duplicates met performance criteria. Based on a review of the data collected by Jacobs, the data meets MassDEP Compendium of Analytical Methods (CAM) performance standards for Presumptive Certainty. As reported in the laboratory reports, some VOC results were flagged as estimated "J" and "UJ" based on potential sample or laboratory QA/QC issues, and five detected acetone results in the soil samples were flagged as nondetects due to associated trip blank contamination by acetone.

2.5 Conditions or Problems Affecting Performance of Corrective Measures (310 CMR 40.0877(4)(d))

Jacobs did not identify conditions or problems during the reporting period that would affect the selected RAAs.

2.6 Measures to Correct Conditions Affecting Performance of Comprehensive Remedial Action (310 CMR 40.0877(4)(e))

No corrective measures were required during this reporting period.

3. Conceptual Site Model (310 CMR 40.1057 (2)(b))

The previous section of this report (Section 2) presented the Phase IV Status Report. The remainder of this report (Sections 3 through 10) comprises the Temporary Solution Statement. Refer to Section 1.4 and Table 1-3 for a detailed outline.

Per 310 CMR 40.1057 (2)(b), a succinct summary of the CSM must be included in the Temporary Solution Statement. This CSM presents the Site characteristics, a summary of OHM sources, release mechanisms, the nature and extent of contamination, previous remedial actions, fate and transport pathways, and environmental receptors and potential risk.

3.1 Site Characteristics

Site characteristics are detailed in the following sections.

3.1.1 Land Use and Topography

Bomac Laboratories, Inc. (Bomac) initially developed the facility property in 1950. Bomac sold the operations to Varian in 1959. Varian continued operations at the facility until the sale of the business in 1995 to the current owner and operator, CPI.

The Site topography gently slopes from the southern portion of 150 Sohier Road at approximately 88 feet above mean sea level in elevation to the northern portion of the facility property near Route 128 at approximately 69 feet in elevation. To the east across the Brimbal Avenue exit, the topography is approximately 69 feet and then slopes gently up toward Brimbal Avenue. At the southwest, west, and northwest property lines, a steep embankment of approximately 30 feet slopes downward from Bomac Road to the abutting properties along Tozer Road.

The facility at 150 Sohier Road is predominantly covered with buildings and paved parking lots. An open grassy field is located on the southeast portion, and small strips of grass and landscaped areas surround some portions of the buildings and parking areas. Small trees and shrubs are located along the property line abutting Sohier Road and the embankment along the southwest, west, and northwest property lines. Additional information about the facility buildings is provided in Section 1.1.

A main drainage channel enters the 150 Sohier Road property at the northeast corner and directs stormwater runoff from Route 128 and areas north of Route 128 to the south (Figure 1-2). This open channel/stream is referred to as the Unnamed Stream. Storm sewers from the abutting roads and from an area across Sohier Road to the east also drain into the Unnamed Stream. This stream enters a buried culvert that runs south and connects to the main east-to-west drainage culvert. Surface runoff and rooftop drainage are collected in the facility's stormwater drainage system, which directs flow to this main drainage culvert.

The Unnamed Stream flows from the Site in a southwesterly direction between buildings located on 28 and 30 Tozer Road. From this point, it flows along Tozer Road in a channel with overgrown vegetation along its banks. The stream passes through a culvert below Tozer Road and past a small wetland area. At this point, it joins with another stream (Stream A) flowing in from the northwest. The combined stream then flows along the back property lines of residential homes located on Tudor Road and Jordan Street and next to the Beverly High School athletic fields (approximately 2,000 feet from the Site). There is a small fence between the stream and the high school's athletic fields. After flowing past the high school,

the stream flows in drainage pipes under a park and industrial facility before emerging between Shoe Pond and the Bass River (more than a mile from the Site) (Aptim 2023b).

3.1.2 Geology

As indicated in the March 2023 Final Phase II CSA Addendum:

The Site is typically underlain by till, sand and gravel, and silt and clay deposits. These soils generally increase in thickness from south to north and are characterized by six major lithological units: 1) till, 2) gravel, 3) medium to coarse sand, 4) fine sand, 5) silty sand/sandy silt, and 6) clay. The thickness, continuity, geographical distribution, and stratigraphic relations of these six lithological units are highly variable throughout the Site since they were put in place in rapidly changing glacial, postglacial, and coastal depositional environments (Aptim 2023b).

The depth to bedrock is highly variable throughout the Site. The bedrock is characterized by two major rock units: a gabbro in the western half of the Site and a granite in the eastern half. Observations on the bedrock fracturing indicate that the subhorizontal sheeting fractures in the granite represent the major groundwater flow pathway coupled with three groups of subvertical fractures trending north-south, east-northeast-west-southwest, and north-northwest-south-southeast and coincident with lineaments transecting the Site in like directions (Aptim 2023b).

3.1.3 Hydrogeology

The Site hydrogeology is characterized by the presence of two aquifers, the overburden and bedrock aquifers. The thickness of the overburden aquifer ranges from approximately 20 to 100 feet. As indicated in the March 2023 Final Phase II CSA Addendum:

The groundwater from the upper and lower parts of the overburden aquifer and from the bedrock flows with the same general pattern: 1) westerly flow from the former Varian facility property, 2) northwesterly flow from the north side of Route 128, and 3) southerly flow along the valley of the Unnamed Stream and Stream A west of Tozer Road. An approximately east-west groundwater divide, located to the north of and parallel with Route 128, diverts the westerly flow into a northwesterly flow component toward the drainage basin of Wenham Lake and into a southerly flow component toward the drainage basin of the Bass River (Aptim 2023b).

The shallow overburden aquifer can be characterized by medium-high hydraulic conductivity (30 to 50 feet per day [ft/day]). The deep overburden aquifer exhibits low to medium-high hydraulic conductivity (0.6 to 30 ft/day). The overburden aquifer is recharged directly by infiltration of rainwater and surface runoff through unpaved areas (Aptim 2023b).

With respect to the bedrock aquifer, the March 2023 Final Phase II CSA Addendum indicates the following:

In the bedrock aquifer, groundwater flows through interconnected fractures and faults in directions generally like those of the overburden aquifer. The overburden and bedrock aquifers are locally in communication. As a result, in addition to horizontal flow, which occurs primarily at the top of the overburden aquifer, a component of the groundwater flow at the base of the overburden aquifer and in the bedrock aquifer is vertical. It is generally downward from the overburden to the bedrock at the facility and to the north but is also upward from the bedrock to the overburden in the vicinity of the streams to the west and to the south of the facility. This is observed at BR-6 on Hill Street and at BR-7 located at 39 Tozer Road (Aptim 2023b).

The fractured granite exhibits low to medium hydraulic conductivity (4 to 12 ft/day), and the less fractured gabbro exhibits low hydraulic conductivity (1 and 6 ft/day) (Aptim 2023b).

Stream A and the Unnamed Stream appear to be generally in a gaining mode (that is, the shallow groundwater discharges to the streams). Certain sections of the Unnamed Stream, including the culvert sections, are gaining water from the shallow overburden aquifer while other sections are marginally losing water. Stream A appears to be in a gaining mode both upstream and downstream of its confluence with the Unnamed Stream. Those gains or losses are a function of the local topographical configuration, seasonal fluctuations, and important storm events (Aptim 2023b).

3.2 Potential Contaminant Sources

Since the facility's construction and during Varian's occupancy from 1959 to 1995, operations at the facility have consisted of research, development, and manufacturing of electronic equipment. As indicated in the March 2023 Final Phase II CSA Addendum:

During Varian's ownership, electron tubes were manufactured for radar applications under Standard Industrial Codes 3671 and 3673. The electron tubes were shipped off-site and primarily used by the United States Department of Defense. Manufacturing processes at the facility included electroplating, acid and alkali cleaning, painting, etching, and equipment maintenance.

During Varian's operations, various industrial processes were performed in the production areas of the facility buildings. These areas were locations where chemicals of concern (COCs) were present. Drywells and leaching fields associated with the production areas were reportedly used for waste disposal before the installation of the wastewater treatment system in 1972 (Aptim 2023b).

TCE, PCE, and 1,1,1-trichloroethane (1,1,1-TCA) were the three primary VOCs historically used at the former Varian facility (Aptim 2023b).

3.3 Previous Remedial Actions

The following remedial actions have taken place at the Site:

- Over 210,000 gallons of sodium permanganate have been injected at various locations across the Site from 2002 to 2019 (Aptim 2023b).
- Over 65,000 gallons of bioremediation solution have been injected at various locations across the Site from 2006 to 2020 (Aptim 2023b).
- An SVE system was installed and activated at Building 3 in December 2009. The SVE system was expanded in September 2014 (Aptim 2023b). The SVE system at Building 3 is still in operation. See Sections 2.1.1.1 and 2.3.1.
- An SVE system was installed and activated at Building 5 in 2012. The system was expanded in March 2014 (Aptim 2023b). The SVE system at Building 5 is still in operation. See Sections 2.1.2.1 and 2.3.2.
- Two seep mats were installed at the seeps identified in Stream A in October 2023. See Sections 2.1.5.2 and 2.3.3.

3.4 Environmental Fate and Transport of OHM

This section discusses the fate and transport of COCs at the Site.

3.4.1 OHM Identification, Characterization, and Control (310 CMR 40.1050 (1)(b) and 310 CMR 40.1057 (2)(c))

Per 310 CMR 40.1003 (5)(a and c), a Temporary Solution requires that all sources of OHM contamination are eliminated or controlled, to the extent feasible.

A total of 19 PSLs have been investigated for releases of OHM at the Site. Eight COCs have been identified at the Site, including three parent compounds (TCE, PCE, and 1,1,1-TCA) and five common degradation compounds ("daughter products") (cis-1,2-DCE, trans-1,2-DCE, 1,1-dichloroethene [1,1-DCE], 1,1-dichloroethane [1,1-DCA], and VC).

Releases of VOCs occurred historically at the Building 3 Source Area, Building 5 Source Area, and PSL10 Source Area. There are no ongoing sources or releases of OHM to the environment at the Site (Aptim 2023b).

3.4.2 Nature and Extent of OHM

The nature and extent of OHM in soil, groundwater, surface water, and sediment is discussed in this section.

3.4.2.1 OHM in Soil

Based on the March 2023 Phase II CSA Addendum, VOCs in soil in the Building 3 Source Area, Building 5 Source Area, and PSL10 Source Area are discussed in the following sections. VOC impacts to soil in the downgradient area have not been observed.

3.4.2.1.1 Building 3 Source Area

VOCs in the Building 3 Source Area shallow overburden have been detected at the highest concentrations beneath or adjacent to the building. In the 2019 sampling, the highest TCE and PCE concentrations measured in shallow overburden (28 and 320 mg/kg, respectively) were from samples collected in the eastern part of Building 3.

In 2019 and 2020, soil sampling in the Building 3 Source Area deep overburden soils showed elevated TCE and PCE concentrations in the soils beneath the eastern part of Building 3. The highest TCE and PCE concentrations were 110 and 14 mg/kg, respectively. VOC soil impacts in the Building 3 Source Area deep overburden extend to the west and southwest with the major groundwater flow pathway and likely extend to the top of bedrock directly beneath Building 3 (Aptim 2023b).

3.4.2.1.2 Building 5 Source Area

VOC concentrations in soil in the Building 5 Source Area are generally an order of magnitude less than those observed in the Building 3 Area, with the highest concentrations detected beneath Building 5. The downgradient extent of soil impacts in the shallow overburden in the Building 5 Source Area are defined by PID soil screening results from wells OB45-S and OB39-BR. The extent of soil impacts to the north in this area are defined by PID screening results and laboratory data collected at BLDG-SV-4. The extent of soil impacts to the south are defined by low soil vapor concentrations noted at BLDG5-SV12 and BLDG5-SV13. In recent (2022) sampling, TCE and PCE were detected in the shallow overburden at concentrations up to 1.4 and 13 mg/kg, respectively.

The highest VOC concentrations in the deep overburden from 2022 sampling were from samples collected beneath the building at well OB53-BR. TCE and PCE were detected at 35 and 11 mg/kg, respectively, at approximately 42 feet below grade. Concentrations decreased to nondetect at approximately 64 feet below grade and west of the previous sample. Downgradient to the northwest, the extents of soil impacts are defined by low soil screening or analytical results from wells OB45-S/DO, OB45-BR, and OB39-DO (Aptim 2023b).

3.4.2.1.3 PSL10

Previous investigation work identified low concentrations of PCE and TCE in shallow soils and groundwater, and sodium permanganate injections were performed to address VOC impacts (Aptim 2023b). Based on rebounding groundwater concentrations observed in 2022, additional investigation activities were performed to assess residual impacts.

A soil gas survey was performed in August 2023 to evaluate the area of residual VOC impacts in the vadose zone. The survey was focused on the parking lot area east of application wells AP-19, AP-20, AP-21, and AP-22. Soil vapor samples were collected from 18 locations from 2 to 5 feet bgs. VOCs were detected in soil vapor at concentrations up to 2,050,000 parts per billion (ppb) (PCE) and 30,900 ppb (TCE). Based on the results of the soil gas survey, the residual source area appears to extend farther to the east and is larger than that originally defined. However, the results of the soil vapor survey indicate there is a relatively small area of VOC-impacted vadose zone soil that is a source of VOCs in groundwater in this area (Jacobs 2023a). Based on the results of the soil gas survey, five soil borings (OB-61 through OB-65) were advanced in September 2023. The highest PCE concentration was detected at OB-61 at 13 to 15 feet bgs at 297 mg/kg. The highest TCE concentration was detected at OB-63 at 25 to 27 feet bgs at 2.22 mg/kg. The soil borings were completed as overburden groundwater monitoring wells OB-61-S, OB-62-DO, OB-63-DO, OB-64-DO, and OB-65-DO; groundwater analytical results indicate elevated concentrations of PCE and TCE in groundwater (Section 2.1.4) (Jacobs 2023b).

3.4.2.2 OHM in Groundwater

Based on samples collected from 2020 to 2022, the primary COCs in groundwater are TCE, PCE, and cis-1,2-DCE. The extent of TCE greater than 0.005 mg/L in the shallow overburden, deep overburden, and bedrock is shown in Figure 1-3. This figure illustrates the estimated extent of the groundwater plume at the Site.

As discussed in the March 2023 Phase II CSA Addendum, there are several noncontiguous TCE plumes in the shallow overburden. These plumes are located at the Building 5 Source Area (TCE concentrations up to 20 mg/L), the Building 3 Source Area (TCE concentrations up to 4 mg/L), the PSL10 area (TCE concentrations up to 0.0301 mg/L based on sampling the new PSL10 well in December 2023), the downgradient area (TCE concentrations up to 0.099 mg/L), and at wells P-19A and MW-005R. The noncontiguous nature of the shallow plume is likely the result of the multiple source areas, the treatment efforts conducted over the years, and the presence of vertical groundwater gradients (Section 3.1.3) (Aptim 2023b).

The main TCE plume in the deep overburden extends west from the Building 3 Source Area to Tozer Road, then to the south along the approximate path of the Massachusetts Bay Transportation Authority tracks and west of Tozer Road. Unlike the shallow aquifer, the distribution of TCE is generally contiguous. The plume follows the deep overburden flow of groundwater, which reflects the slope of the bedrock surface and bedrock valley. The highest TCE concentrations in the deep overburden aquifer are found in five areas, including:

- In the northeast area of Building 3
- Beneath Building 5
- In the PSL10 area near the newly installed well OB-63-DO
- In the north-south area west of Building 7 along Tozer Road
- In a northwest to southeast area north of the 39 Tozer Road property

The first three of these areas are associated with source areas at Building 3, Building 5, and PSL10. The last two of these areas coincide with bedrock depressions (Aptim 2023b) (see also Section 2.1.4).

The highest TCE concentrations detected in bedrock are observed between the Building 3 and Building 5 areas at OB-45-BR (600 mg/L, anomalously high result from November 2021), OB-42-BR (53 mg/L), OB-54-BR (53 mg/L), and OB-19-BR (32 mg/L). Like the deep overburden, TCE in the bedrock aquifer is present to the west in the bedrock valley along Tozer Road. Overall, the northern, southern, eastern, and western extents of the plume in bedrock are comparable to what is seen in the deep overburden (Aptim 2023b), with the highest concentrations in bedrock at the facility.

3.4.2.3 OHM in Surface Water and Sediment

While historical discharges to the Unnamed Stream likely impacted sediment, the data suggest current VOC impacts to the sediment have been minimized. Sediment sampling results from 2021 indicate VOC impacts (TCE, PCE, and cis-1,2-DCE) to sediment in the Unnamed Stream are limited to the northeast corner of the facility, where historical discharges to the stream likely occurred (Aptim 2023b). VOCs were also detected in two sediment samples collected from Stream A downstream of a seep water discharge point near Patton Park.

VOCs (TCE, PCE, and cis-1,2-DCE) were detected in surface water samples collected in 2023 in the Unnamed Stream and in Stream A. VOCs were detected at multiple locations along the Unnamed Stream, with the highest VOC concentrations in December 2023 (0.0097 mg/L of PCE, 0.0408 mg/L of TCE, and 0.0191 mg/L of cis-1,2-DCE) measured in a sample collected just west of the facility (STRHA-2). In Stream A, VOCs were not detected in surface water samples collected upstream of the culvert that passes below Patton Park. The groundwater discharge sample (GDS-03) collected from the seep water discharge point (Stream A Seep) near Patton Park historically had elevated VOC concentrations compared to surface water concentrations in Stream A. For example, PCE, TCE, and cis-1,2-DCE concentrations at GDS-03 in May 2023 were 0.11, 0.42, and 0.38 mg/L, respectively. The Stream A Seep GAC RCMs were installed over this location in October 2023. VOC concentrations were generally consistent downgradient of Patton Park and through the confluence of Stream A and the Unnamed Stream. A likely source of VOCs in the streams is the discharge of groundwater containing VOCs (for example, from GDS-03). The most recent surface water sampling results are presented in Tables 2-7 and 2-8, and the installation of the Stream A Seep GAC RCMs is discussed in Sections 2.1.5.2 and 2.3.3.

3.4.3 Migration Control (310 CMR 40.1050 (1)(c) and 310 CMR 40.1057 (2)(d))

Per 310 CMR 40.1003 (6)(b), a Temporary Solution requires that plumes of dissolved OHM in groundwater and vapor-phase OHM in the vadose zone are stable or contracting or otherwise controlled or mitigated to the extent feasible.

To determine if the VOC plumes in the overburden and bedrock are stable or contracting, a trend analysis of PCE and TCE concentrations was performed on a subset of wells that have been sampled at least eight times, are located in the central or distal portions of the plumes, and have not been used for injections.

Wells in the source areas were not used in this analysis because of the potential effects of various remedial actions on temporal trends. To be representative of current Site conditions, data collected in the past 10 years, from 2014 to present, were used in the analysis. For locations of interest that did not have eight samples collected from 2014 to present, earlier results were used to achieve the required eight data points. The trend analysis was performed on 10 wells in the shallow overburden, 11 wells in the deep overburden, 8 wells in bedrock, and 3 stream locations (Figure 3-1).

Trend analyses were performed using the Mann-Kendall test. For the Mann-Kendall test, EPA Unified Guidance (*Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance* [EPA 2009]) recommend that nondetects be included in the test by assigning them a common value that is less than the smallest measured value in the data set. The Mann-Kendall test was used to determine if there are significantly increasing or decreasing trends over time. The results of the trend analysis are shown in Table 3-1. Trend analysis details, summary statistics, and trend plots are included in Appendix G.

For TCE, most sample locations, including stream locations, either showed a decreasing trend with time (10 locations) or no significant trend (20 locations). Two locations immediately downgradient of the PSL10 Source Area (CL10-BR and CL10-DO) showed a significant increasing trend with time for TCE. Similarly for PCE, most locations, including stream locations, either showed a decreasing trend with time (6 locations) or no significant trend (24 locations). Two locations, CL10-DO (near PSL10) and OB-04-DO (at the northern end of Tozer Road, just south of Highway 128) showed a significant increasing trend with time for PCE. Two of the locations with increasing trends (CL-10-DO and CL-10-BR) are immediately downgradient of previous PSL10 ISCO injections, and the increasing concentrations reflect insufficient treatment of the source area. This area will be addressed via the PSL10 remedy being implemented in 2024. However, it is noteworthy that downgradient wells OB-08-DO and OB-08-S (upward hydraulic gradient at this well) have a decreasing concentration trend for TCE and no trend for PCE. While well OB-04-DO (at the northern end of Tozer Road) shows an increasing PCE trend, all of the monitoring wells downgradient of this location have either no trend or decreasing trends. Overall, the results of the trend analysis indicate the VOC groundwater plume at the Site is stable or contracting.

3.4.4 Nonaqueous Phase Liquid (310 CMR 40.1050 (1)(d) and 310 CMR 40.1057 (2)(e))

Where non-stable/mobile NAPL is or has been present, the Temporary Solution must demonstrate that response actions have been taken to adequately assess NAPL mobility and meet the requirements of 310 CMR 40.1003 (7)(b). NAPL is defined by the MCP as OHM that is present in the environment as a separate phase liquid. Non-stable NAPL is defined by the MCP as NAPL with a footprint that is expanding laterally or vertically. NAPL with micro-scale mobility is defined by the MCP as NAPL with a footprint that is not expanding but which is visibly present in the subsurface in sufficient quantities to migrate or potentially migrate as a separate phase over a short distance and visibly impact an excavation, boring, or monitoring well (310 CMR 40.0006).

Samples of dense nonaqueous phase liquid (DNAPL) were obtained from recovery wells RW-2 and RW-4 in 1993 and 1997, respectively. An analysis revealed the DNAPL to be composed of TCE and PCE in equal proportion. DNAPL has not been observed in gauging events since 1997. This has included at least semiannual gauging of Site wells in the source areas with an interface probe to the present time (Aptim 2023b). As NAPL has not been reported in monitoring wells since 1997, the DNAPL that was released is likely no longer mobile. This demonstrates that non-stable NAPL and NAPL with micro-scale mobility has been removed and/or controlled at the Site.

3.5 Exposure Assessment and Risk Characterization (310 CMR 40.1057 (1)(b) and (1)(i))

An MCP Method 3 risk assessment was completed in the 2000 Phase II CSA based on the understanding of the Site at that time (IT Corporation 2000). The risk assessment was updated in 2023 as part of the Phase II CSA Addendum (Aptim 2023b). This updated evaluation of risk was completed based on the current Site conditions, using the MCP Method 3 approach. A summary of the updated risk assessment in the March 2023 Phase II CSA Addendum is provided in the following sections.

3.5.1 Human Health Risk Characterization

For cumulative non-cancer health risks, the only receptor for which the MCP non-cancer limit is exceeded is future construction workers exposed to groundwater in the identified hot spot next to Building 3, primarily due to exposure to TCE. Therefore, a condition of No Significant Risk of harm has been demonstrated for both current and most future Site receptors based on non-cancer health effects. The Cumulative Cancer Risk for all current and future receptors is less than the Cumulative Cancer Risk Limit of 1×10^{-5} . Therefore, a condition of No Significant Risk of harm to current and future receptors exists at this Site based on cancer health effects (Aptim 2023b).

3.5.2 Risk to Safety

The MCP states the risk of harm to safety shall compare current and future foreseeable Site conditions to applicable or suitably analogous health standards, if available. However, for this Site, no applicable or suitable analogous safety standards were identified.

In 310 CMR 40.0960, the MCP has identified several additional criteria that need to be considered in the evaluation of safety, including:

- The presence of rusted or corroded drums or containers, open pits, lagoons, or other dangerous structures (310 CMR 40.0960(3)(a))
- The threat of fire or explosion (310 CMR 40.0960(3)(b))
- Uncontained material that exhibits the characteristics of corrosivity, reactivity, or flammability, as described in 310 CMR 40.0347

These materials and/or conditions were not observed during visits to the Site. Based upon the aforementioned evaluation, a condition of No Significant Risk of harm to safety exists at the Site because no threat of physical harm or bodily injury to people was observed at the Site or within the surrounding area (310 CMR 40.0960) (Aptim 2023b).

3.5.3 Risk to Public Welfare

As indicated in the March 2023 Final Phase II CSA Addendum:

The purpose of the characterization of risk to public welfare is to identify and evaluate nuisance conditions, which may be localized, and to identify and evaluate significant community effects. This is done by considering such factors as nuisance conditions, loss of active or passive property use, and non-pecuniary effects that may result from the degradation of public or private resources that are directly attributable to releases of OHM at this site (310 CMR 40.0094(2)). In addition, the risk of harm to public welfare is evaluated by comparing site concentrations of OHM to Upper

Concentration Limits (UCLs) in soil and groundwater (310 CMR 40.0996). During numerous site visits, no odors or other nuisance conditions have been identified at the site. In addition, no other public welfare impacts on the surrounding community related to releases at the site have been identified in accordance with the criteria specified at 310 CMR 40.0994(4) (Aptim 2023b).

The soil and groundwater concentrations were compared to the appropriate UCLs. Hot spots were identified for evaluation of shallow, overburden, and bedrock areas of the Site. The average and maximum concentrations in soil and groundwater for the entire Site and for hot spots were compared to UCLs. No average or maximum concentrations in soil or shallow overburden groundwater exceeded UCLs. No average groundwater concentration in deep overburden or bedrock exceeded UCLs. It was concluded that a level of No Significant Risk of harm to public welfare and the environment has been achieved based on the consideration of UCLs (Aptim 2023b).

3.5.4 Risk to the Environment

A comprehensive sampling program was undertaken in 2021, and sampling continued in 2022 in both Stream A and the Unnamed Stream. A Stage I Screening of Stream A and the Unnamed Stream was conducted. Based on the Stage I Screening results, it was concluded that the potential pathways of exposure of environmental receptors to surface water and sediment do not pose a significant risk associated with releases from the Former Varian Facility Site, and a Stage II Environmental Risk Characterization is not needed to further evaluate this pathway (Aptim 2021a, 2023b).

4. Substantial Hazard Evaluation (310 CMR 40.1050 (1)(a) and 40.1057 (2)(g))

The focus of a Substantial Hazard Evaluation will be on possible exposures to Human and Environmental Receptors, considering the current use(s) of the disposal site and the surrounding environment and, where applicable, any AULs for the Site.

4.1 Human Health Substantial Hazard Evaluation

Although additional remediation is required to achieve a Permanent Solution, a Temporary Solution exists at the Site because a condition of No Substantial Hazard to Health exists, considering the current Site uses (310 CMR 40.0956 (1)(a) and 310 CMR 40.0993(10)):

- No cumulative receptor cancer risk is above 1×10^{-5} for current and future receptors
- No cumulative receptor non-cancer risk (Hazard Index) is exceeding 1 for current receptors

Based on the results of the previously completed risk assessment (IT Corporation 2000; Aptim 2023b) and subsequent vapor intrusion sampling (Aptim 2023b) (Section 3.5), No Significant Risk exists for the evaluated human exposure scenarios (cumulative receptor cancer risk does not exceed 1×10^{-5}), and cumulative receptor non-cancer risk does not exceed 1 for current receptors. Therefore, a condition of No Substantial Hazard to human health exists at the Site.

4.2 Ecological Substantial Hazard Evaluation

The focus of an Ecological Substantial Hazard Evaluation will be on any environmental resource areas such as wetlands, aquatic and terrestrial habitats, and fisheries that exist at a site. For ecological receptors, No Substantial Hazard to the environment exists if steps have been taken to eliminate or mitigate (310 CMR 40.0956 (2)(a) through (f)):

- *Evidence of stressed biota attributable to the release at the disposal site including, without limitation, fish and wildlife kills or abiotic conditions;*
- *Visible presence of oil, tar, or other separate phase hazardous material in soil within three feet of the ground surface over an area equal to or greater than two acres, or over an area equal to or greater than 1,000 square feet in sediment within one foot of the sediment surface;*
- *Continuing discharge of contaminated groundwater to surface water where levels of the [OHM] attributable to the release already exceed Massachusetts Surface Water Standards;*
- *Continuing discharge of contaminated groundwater to surface water where surface water and/or sediment concentrations of [OHM] attributable to the release already pose a significant risk;*
- *Migration of [OHM] to additional environmental media or resource area where resultant exposures would have the potential to pose a significant harm in the future; and*
- *Ecological risk or harm such that recovery would be substantially more difficult or would require more time if conditions were to remain unremediated for even a short period of time.*

Some impacted groundwater at the Site discharges to surface water. Based on the Stage I Screening results, it was concluded that the potential pathways of exposure of environmental receptors to surface water and sediment do not pose a significant risk associated with releases from the Former Varian Facility Site, and a Stage II Environmental Risk Characterization is not needed to further evaluate this pathway

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(Aptim 2021a). Based on these results, a condition of No Substantial Hazard to the environment exists at the Site.

5. Use of Active Exposure Pathway Mitigation Measures (310 CMR 40.1057 (1)(f))

SVE systems are currently operated at Buildings 3 and 5. The SVE systems were designed to reduce VOC concentrations in the vadose zone soils beneath the two facility buildings as well as to control potential vapor intrusion into the buildings. The Building 3 and Building 5 SVE systems met the definition of an AEPMM established in the June 2014 revisions to the MCP. The operation of the SVE systems as AEPMMs was registered with MassDEP.

The conditions upon which the Substantial Hazard Evaluation are based include the continued operation of SVE systems at Buildings 3 and 5 as AEPMMs. As these AEPMMs have been operating continuously, it has not been demonstrated that No Substantial Hazard exists at the Site without the continued operation of these AEPMM systems. Therefore, at this time, the AEPMM systems are considered necessary to maintain the conditions of the Temporary Solution. The Building 5 AEPMM system will continue to operate under the CRA. The Building 3 AEPMM system will be replaced with the ISTR vapor extraction system (see Section 2.3.1 for details). Once remedies are completed at the Building 3 and Building 5 Overburden Source Areas, the source of VOC vapors will be removed, and these mitigation measures should no longer be required.

5.1 Operation, Maintenance, and Monitoring (310 CMR 40.1057 (2)(i))

Per 310 CMR 40.1057 (2)(i), a Temporary Solution must include a description of any OMM that will be required to confirm and/or maintain those conditions at the disposal site upon which the Temporary Solution is based.

As noted at the beginning of Section 5, the SVE systems at Buildings 3 and 5 are considered AEPMMs, the OMM associated with these AEPMM systems is required to maintain the conditions of the Temporary Solution. The OMM plans for Buildings 3 and 5 are provided in:

- Building 3 OMM plan is included in the *Immediate Response Action Status Report, Building 3* (Shaw 2010a).
- Building 5 OMM plan is included in the Phase V ROS report for October 2013 (Shaw 2013).

Additional details on the operation of the SVE systems are provided in Sections 2.1.1.1, 2.1.2.1, 2.3.1, and 2.3.2.

6. Plan to Achieve a Permanent Solution

The plan to achieve a Permanent Solution involves the implementation of the selected RAAs in the Building 3 Overburden Source Area, Building 5 Overburden Source Area, bedrock, PSL10 Source Area, and the downgradient plume, as identified in Table 1-1.

6.1 Feasibility of Permanent Solution (310 CMR 40.1057 (1)(d))

The March 2023 Revised Phase III RAP concluded the selected remedial alternatives are reasonably likely to achieve a Permanent Solution at the Site (Aptim 2023a). However, it is not expected that a Permanent Solution will be achieved in the near future (i.e., within the next five years). This conclusion is based on:

- The presence of dense, low-permeability soils in the overburden in the treatment areas (for both the Building 3 and Building 5 Source Areas) and associated back diffusion of VOCs from low-permeability soils
- The need to treat potential DNAPL in fractured bedrock located 60 to 90 feet below grade (for the bedrock)
- The long travel times associated with groundwater flow at the Site, with up to 2 years of post-remediation monitoring anticipated for some treatment approaches.

The implementation of the selected RAAs will result in a significant reduction in VOC mass. It will also significantly reduce the potential for VOC migration in downgradient areas to human and ecological receptors. It is anticipated that the implementation of the selected RAAs will eventually lead to a Permanent Solution.

6.2 Definitive and Enterprising Steps (310 CMR 40.1057 (2)(j))

The following definitive and enterprising steps are being or will be conducted to ensure that the RAAs will achieve a Permanent Solution:

- Building 3 Overburden Area: Phase IV Plan, Part 1, has been submitted and finalized, identifying the remedy as ISTR and ISB polish and continued operation of the SVE/AEPMM system or ISTR SVE/AEPMM system (Aptim 2023c). A subcontractor has been identified for remedy installation, and the installation is currently in progress. A Phase IV status update is included in Section 2.1.1.
- Building 5 Overburden Area: Phase IV Plan, Part 2, has been submitted identifying the remedy as ISB and continued operation of the SVE/AEPMM system (Jacobs 2023a). Additional sampling is planned in the Building 5 area for 2024 to finalize the remedy design. A Phase IV status update is included in Section 2.1.2.
- Bedrock: Phase IV Plan, Part 2, has been submitted, identifying the remedy as ISCO (Jacobs 2023a). Additional sampling is planned in the bedrock area for 2024 to finalize the remedy design. A Phase IV status update is included in Section 2.1.3.
- PSL10: Phase IV Plan, Part 3, has been submitted, identifying the remedy as establishing a reactive treatment zone by constructing an SBGR (Jacobs 2023b). Additional sampling has been completed in the PSL10 Source Area and the final remedy design is in progress. Installation of the remedy is anticipated in spring 2024. A Phase IV status update is included in Section 2.1.4.
- Downgradient plume: Phase IV Plan, Part 1, has been submitted and finalized, identifying the remedy as S mZVI PRZ (Tozer Road) and GAC RCM (Stream A Seep) (Aptim 2023c). The GAC RCM was installed

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in October 2023. Additional sampling is ongoing in the downgradient plume area to finalize the remedy design, and a subcontractor has been identified for remedy installation. A status report for Tozer Road and the Stream A Seep is included in Sections 2.1.5 and 2.3.3, respectively.

7. Implementation of AUL (310 CMR 40. 1057 (1)(e) and (2)(h))

There is no AUL at the Site, and an AUL is not anticipated to be needed during remedy design or implementation. One or more AULs may be used to achieve a Permanent Solution at the Site in the future.

8. Relationship of Temporary Solution to Other Permanent or Temporary Solution Statements (310 CMR 40.1057 (1)(c))

The Temporary Solution Statement will include information on the relationship of the Temporary Solution Statement to any other Permanent or Temporary Solution Statements that have been filed for a disposal site, if applicable, together with a statement as to whether any additional response actions are needed for any other portions of the disposal site.

The following sites have open MassDEP RTNs associated with the Former Varian Facility Site (RTN 3-0485):

- Site Name: 28 Tozer Road
 - RTN: 3-0033325
 - Address: 28 Tozer Road
 - Status: Downgradient Property Status
- Site Name: Off Sohier Rd
 - RTN: 3-0018347
 - Address: 30 Tozer Rd
 - Status: Downgradient Property Status
- Site Name: No Location Aid
 - RTN: 3-0030449
 - Address: 32 Tozer Road
 - Status: Utility Release Abatement Measure (RAM) – Completion Statement Received on May 21, 2012
- Site Name: Cell Signaling Technology
 - RTN: 3-0030796
 - Address: 32 Tozer Rd
 - Status: Downgradient Property Status
- Site Name: No Location Aid
 - RTN: 3-0023023
 - Address: 31 Tozer Rd
 - Status: Downgradient Property Status
- Site Name: Property
 - RTN: 3- 0002939
 - Address: 16 Tozer Rd
 - Status: Downgradient Property Status

In addition, RTNs 3-0028531 (linked March 5, 2013) and 3-0037172 (linked December 6, 2022) have been linked to RTN 3-0000485.

The sites identified as Downgradient Property Status sites may be closed after a Permanent Solution is reached at the Former Varian Facility Site (RTN 3-0000485).

9. Data Usability and Representativeness (310 CMR 40.1057 (1)(j) and (2)(k))

In accordance with 310 CMR 40.1057(2)(k), Temporary Solutions must be submitted with a Data Usability Assessment documenting that the data relied upon is scientifically valid and defensible and of sufficient level of precision, accuracy, and completeness to support the Temporary Solution and a Data Representativeness Evaluation documenting the adequacy of the spatial and temporal data sets to support the Temporary Solution.

The *MCP Representativeness Evaluations and Data Usability Assessments, Policy #WSC-07-350* (MassDEP 2007) provides guidance for these assessments. The data considered in this Data Usability Assessment includes data used to support the Temporary Solution Statement, which is the data used in the updated exposure assessment and risk characterization as presented in the March 2023 Phase II CSA Addendum (Aptim 2023b) and the data used in the plume stability evaluation presented in Section 3.4.3.

As outlined in the following sections, the results of this evaluation demonstrate:

- The number and types of samples collected are adequate for use in the MCP decision making regarding this Temporary Solution.
- The results are acceptable for inclusion in this Temporary Solution and are suitable for their intended use.

9.1 Representativeness Evaluation

Per the aforementioned MassDEP guidance (MassDEP 2007), the Representativeness Evaluation is an evaluation and demonstration of the adequacy of the spatial and temporal data sets used to support the Temporary Solution condition.

9.1.1 Conceptual Site Model

The CSM is presented in Section 3.

9.1.2 Field Screening Data

During the course of field investigation activities, field screening and observation data were collected during sample collection activities. This information includes qualitative and quantitative values from soil samples, such as visual and olfactory observations and impacts, and results of screening soil sample headspace for VOCs with a PID.

The field screening data were reviewed alongside laboratory and analytical data. Field screening data were found to be generally consistent with the associated laboratory results. The field screening data collected during the course of field investigation activities, as described herein and in prior submittals under RTN 3-0485, are considered to be sufficient and appropriate for the Temporary Solution.

9.1.3 Sampling Rationale

Decades of sampling have been conducted at the Site as part of previous Site investigations (Phase I Initial Site Investigation, Phase II CSA and Addendum, comprehensive remedy implementation, and RAM activities). These investigations included the collection and analysis of soil, groundwater, sediment, surface

water, and indoor air samples. The investigations were focused on assessing the nature and extent of VOCs at the Site, based on the CSM that the contamination was released to the environment at 150 Sohler Road and migrated to downgradient areas at the Site.

9.1.3.1 Samples Used in the Updated Exposure Assessment and Risk Characterization

The samples considered in this section are those used in the updated exposure assessment and risk characterization presented in the March 2023 Phase II CSA Addendum (Aptim 2023b), the results of which are used to establish No Substantial Hazard exists at the Site.

As identified in Table 7-8 of the Phase II CSA Addendum, 58 soil samples in non-hot spot areas and 19 soil samples in hot spot areas were used in the risk characterization. A summary of the soil samples used in the updated risk assessment is provided in the Phase II CSA Addendum:

Soil analytical data were collected from across the site in areas of potential concern from 1995 to the present. Table 7-1 provides summary statistics of the soil data collected at this site from 1995 to 2022. While some of this data represents older samples from areas where remedial actions have been conducted, and may not be indicative of current conditions, these data have been included as more recent data from these locations has not yet been collected. This table includes samples collected from all depths and locations that were not identified as upgradient or offsite. Most of these samples were collected from the former Varian facility, as this was the original source area. Some of these samples were collected from below the water table and are affected by dissolved VOCs in groundwaters (Aptim 2023b).

As identified in Table 7-11 of the Phase II CSA Addendum, groundwater samples from 156 locations were included in the risk characterization. A summary of the groundwater samples used in the updated risk assessment is provided in the Phase II CSA Addendum:

Groundwater samples have been collected from site monitoring wells since at least 1988. In order to provide a representation of current site groundwater conditions, this evaluation includes data collected from July 2020 to the present. There are varying numbers of rounds included for each sampling location. The most recent sampling was conducted in August 2022, which included a few newly installed wells, with the most recent comprehensive sampling completed in May 2022 (Aptim 2023b).

An overview of the surface water and sediment samples used in the updated risk assessment is provided in the Phase II CSA Addendum (Aptim 2023b), with additional details included in Appendix F of the January to June 2021 ROS Report (Aptim 2021a). Surface water and sediment samples were collected from 20 locations in March and May 2021 along Stream A and the Unnamed Stream upgradient and downgradient of the confluence with Stream A.

A summary of indoor air samples used in the updated risk assessment is provided in the Phase II Addendum:

Indoor air data has been collected from numerous buildings on the former Varian property, downgradient commercial buildings on Tozer Road, as well as in residential buildings. These data have been evaluated in detail with consideration of associated soil vapor data, as well as nearby shallow groundwater data, to determine if the vapor intrusion exposure pathways are complete (Aptim 2023b).

Indoor air samples used in the risk assessment were collected between 2019 and 2021. Samples were collected from former Varian facility buildings (Building 3 and Building 5), Tozer Road commercial buildings (28 Tozer Road, 30 Tozer Road, 31 Tozer Road, 32 Tozer Road, and 39 Tozer Road), and downgradient residential buildings (47 residential homes on Sonning Road, Longview Drive, Longview Terrace, Lexington Drive, Jordan Street, Tudor Road, Windsor Road, and Wendgail Court).

The sampling data set for soil, groundwater, sediment, surface water, and indoor air is considered adequate to characterize the current Site conditions and assess human health and ecological risk under the MCP. The number and locations of samples are considered sufficient to delineate disposal site boundaries, identify background levels, calculate exposure point concentrations (EPCs), identify hot spots, identify exposure pathways and receptors, and demonstrate source elimination or control in support of this Temporary Solution.

9.1.3.2 Samples Used in the Plume Stability Evaluation

As noted in Section 3.4.3, to determine if the VOC plume in the overburden and bedrock is stable or contracting, a trend analysis was performed. To be representative of current Site conditions, data collected in the past 10 years, from 2014 to present, were used in the analysis. For locations of interest that did not have eight samples collected from 2014 to present, earlier results were used to achieve the required eight data points. The data set used in this evaluation is considered sufficient to determine if the VOC concentrations at the Site are stable or contracting in support of this Temporary Solution.

9.1.4 Number, Spatial Distribution, and Handling of Samples

The number and spatial distribution of samples as described in Section 9.1.3 is considered sufficient to support this Temporary Solution. The data collected is considered to be representative of current conditions at the Site.

9.1.5 Temporal Distribution of Samples

As noted in MassDEP guidance (MassDEP 2007), an evaluation of the temporal distribution of samples is to be included for disposal site conditions that warrant monitoring over an extended period.

The data considered in this Data Usability Assessment for the Substantial Hazard Evaluation are generally from recent sampling events (2019 to 2022). Older soil data collected as far back as 1995 were also used when more recent data were not available. The purpose of the updated exposure assessment and risk characterization in the Phase II CSA Addendum was to present a characterization of current Site conditions and provide an updated evaluation based on those current conditions. Soil data used in the updated exposure assessment and risk characterization were from a single point in time; multiple sampling events from the same location did not occur. Groundwater data used in the assessment had varying numbers of samples for each location, generally from four to eight collected between 2020 and 2022. Indoor air and soil vapor data used in the assessment ranged from one to six samples at each location collected between 2019 and 2022. In general, average concentrations were calculated for EPCs used in the exposure assessment and risk characterization. Therefore, both spatial (multiple locations) and temporal (multiple times) distributions were considered in the updated exposure assessment and risk characterization.

The Data Usability Assessment for the evaluation of plume stability generally considers data collected over the past 10 years (2014 to present). A temporal analysis was completed as part of the plume stability evaluation and is presented in Section 3.4.3 and Appendix G.

9.1.6 Data Completeness

Data completeness is a measure of the amount of valid data obtained for the site being evaluated compared to the amount expected under normal conditions. Completeness targets are generally set to estimate the minimum amount of data required to support recommendations, such as those made in a Temporary Solution Statement. Any potential data gaps identified will be addressed during future response actions to support progress toward the achievement of a Permanent Solution.

No data were rejected, and the data set is suitably complete for use in this Temporary Solution Statement.

9.1.7 Inconsistency and Uncertainty

Data and information collected during the course of Site investigations were found to be generally consistent with Site history and past use, field screening data, and Site observations. The contaminants evaluated in the human health and ecological risk characterizations were also consistent with field and laboratory results and historical data.

Uncertainties identified in the exposure assessment and risk characterization include (Aptim 2021a, 2023b):

- For nondetect samples used in calculating EPCs, values of one-half the reporting limit were used. This could result in the overestimation of EPCs.
- It is assumed that the concentrations in the Site media are not changing over time. This conservative approach may result in an overestimation of the risk for the future receptors considered in this assessment given that some of the chemicals detected may attenuate (for example, dilution, biodegradation, or remediation) over time.
- For the most part, arithmetic mean concentrations are used as EPCs. These are likely to overestimate exposure since sampling has focused on areas with higher concentrations. Stage I Screening of surface water and sediment used maximum concentrations (rather than arithmetic mean) to estimate exposure, which provides an even more conservative estimate of exposure.
- There is uncertainty in the exposure assumptions and toxicity values used to calculate risk. There are also uncertainties associated with the use of benchmarks in the Stage I Screening.
- There is uncertainty associated with sample collection and analysis methods for surface water and sediment. However, results were generally similar between sample collection periods and sample areas.
- The surface water samples used in the exposure assessment and risk characterization were taken in March and May 2021 and do not reflect drier conditions of the later summer.

Collectively, the sources of uncertainty in sample data were not sufficient to undermine the exposure assessment and risk characterization and were conservatively biased. Therefore, the Substantial Hazard Evaluation for this Temporary Solution is also conservatively biased. In general, the conservative approach to the exposure assessment and risk characterization likely overestimates risks rather than underestimates them.

Uncertainties associated with the plume stability evaluation include:

- For the Mann-Kendall trend analysis, nondetect samples were assigned a common value that is less than the smallest measured value in the data set.

- A subset of locations across the Site were selected for trend evaluation based on spatial distribution. It is assumed that the sample locations chosen for the evaluation are representative of the entire plume, and trends observed at the chosen sample locations can be applied to the entire plume.
- For the statistical evaluation (Mann-Kendall test), the null hypothesis is that the data set does not exhibit sufficient evidence of any trend. For locations with nonsignificant results (that is, no trend [Table 3-1]), the null hypothesis cannot be accepted that there is no trend, simply that there is insufficient evidence to reject the null hypothesis of no trend at the stated confidence level.

Collectively, the sources of uncertainty associated with the plume stability evaluation are not sufficient to undermine the conclusion that the groundwater plume is stable or contracting.

9.1.8 Information Considered Unrepresentative

As discussed in Section 9.1.5, the data considered in this Data Usability Assessment for the updated exposure assessment and risk characterization are generally from recent sampling events (2019 to 2021). As such, the data are representative of current Site conditions.

The data considered in this Data Usability Assessment for the evaluation of plume stability generally consider data collected over the past 10 years (2014 to present) to be representative of current Site conditions and temporal trends.

9.2 Data Usability Assessment (310 CMR 40.1057 (2)(k))

QA/QC of data collected at the Site have been summarized in the reports in which the data were originally submitted:

- Soil samples collected in 1995 and 1999 were included in the original risk assessment and associated Data Usability Assessment (IT Corporation 2000)
- Soil samples collected in 2012 (Shaw 2012a)
- Groundwater samples collected between 2009 and 2013 (April 2009 to September 2009 [Shaw 2009]; April to September 2010 [Shaw 2010b]; October 2010 to March 2011 [Shaw 2011a]; April to September 2011 [Shaw 2011b]; October 2011 to March 2012 [Shaw 2012b]; April to September 2012 [Shaw 2012c]; October 2012 to March 2013 [CB&I 2013a])
- Groundwater and soil samples collected between April and September 2013 (CB&I 2013b)
- Groundwater and soil samples collected between October 2013 and March 2014 (CB&I 2014a)
- Groundwater samples collected between 2014 and 2018 (April to September 2014 [CB&I 2014b]; October 2014 to March 2015 [CB&I 2015a]; April to September 2015 [CB&I 2015b]; October 2015 to March 2016 [CB&I 2016a]; April to September 2016 [CB&I 2016b]; October 2016 to March 2017 [CB&I 2017a]; April to September 2017 [CB&I 2017b]; October 2017 to March 2018 [CB&I 2018])
- Groundwater and soil samples collected between April and September 2018 (Aptim 2018)
- Groundwater, soil, surface water, indoor air, and soil vapor samples collected between October 2018 and June 2019 (Aptim 2019)

- Groundwater, surface water, indoor air, and soil vapor samples collected between July and December 2019 (Aptim 2020a)
- Groundwater, surface water, indoor air, and soil vapor samples collected between January and June 2020 (Aptim 2020b)
- Groundwater, surface water, indoor air, and soil vapor samples collected between July and December 2020 (Aptim 2021b)
- Groundwater, soil, surface water, sediment, indoor air, and soil vapor samples collected between January and June 2021 (Aptim 2021a)
- Groundwater, surface water, indoor air, and soil vapor samples collected between July and December 2021 (Aptim 2022)
- Groundwater, soil, indoor air, and soil vapor samples collected between December 2021 and August 2022 (Aptim 2023b)
- Groundwater samples collected from September to December 2021 (Aptim 2023d)
- Groundwater samples collected from January to June 2023 (Jacobs 2023c)

As described in the QA/QC summaries, in general, the environmental data collected meet the “Presumptive Certainty” criteria described in MassDEP guidance (MassDEP 2017). The laboratory reports are reviewed to confirm that each sample was analyzed within holding times and to verify that surrogate recoveries and internal laboratory standards are within the QA/QC limits. Potential QA/QC issues identified are summarized in the QA/QC evaluations, laboratory case narratives, and Data Usability Worksheets.

9.2.1 Analytical Data Usability Assessments

All of the data used in support of the risk assessments were generated at accredited analytical laboratories using analytical methods listed in the MassDEP CAM (MassDEP 2010a) to achieve “Presumptive Certainty” of the results. Analytical laboratory reports associated with the data used in this Temporary Solution report were previously submitted to the MassDEP in the reports listed in Section 9.2.

9.2.2 Evaluation for CAM-compliant Data (310 CMR 40.1057 (1)(j))

MassDEP has developed specific analytical methods and offers a CAM-compliant (Presumptive Certainty) option for data that are derived using these methods and that meet certain other program requirements. CAM-compliant data are of known precision, accuracy, representativeness, comparability, completeness, and sensitivity.

The analytical laboratory methods and data have been reviewed and validated by a chemist to confirm QA/QC compliance with the requirements for Presumptive Certainty described in the MassDEP CAM (MassDEP 2010b). The reviewed data reports were qualified, as necessary, and all soil, groundwater, indoor air, surface water, and sediment data were determined to be CAM-compliant (Presumptive Certainty achieved) and acceptable for inclusion in the data set.

9.2.3 Evaluation for CAM-noncompliant Data, Non-CAM, and Pre-CAM Data

CAM-noncompliant data are analytical results determined using an “MCP Analytical Method” detailed in the CAM that: (1) is not in compliance with method-specific QC requirements specified in the CAM; (2)

does not include a narration of method-specific performance standard deficiencies, as necessary; and/or (3) does not include the required deliverables specified in the CAM for MCP analytical data. Data collected during the course of field investigations were generally considered to be CAM compliant. Any CAM-noncompliant data were noted in the laboratory case narratives provided in the previously submitted reports listed in Section 9.2.

Non-CAM data are analytical results determined using an analytical method that is not currently included in the CAM. No non-CAM analytical methods were used in the data evaluated in this Temporary Solution.

Pre-CAM Data are analytical results determined using any analytical method before August 1, 2003, for methods included in the CAM. Pre-CAM soil data collected in 1995 and 1999 were included in the updated risk assessment. The 1995 and 1999 soil data were evaluated in a Data Usability Assessment as part of the original risk assessment (IT Corporation 2000).

Data used in this evaluation were determined to be usable to support this Temporary Solution Statement.

9.2.4 Data Evaluation Criteria

9.2.4.1 Laboratory Reporting Limits (Sensitivity)

The reporting limits achieved by the laboratories for the analyses completed during the course of Site investigation work are generally below the applicable standards for COCs at the Site. Potential QA/QC issues identified are summarized in the QA/QC evaluations, laboratory case narratives, and Data Usability Worksheets in the original reports listed in Section 9.2.

9.2.4.2 Precision

Precision is the level of mutual agreement among individual measurements and may be evaluated either qualitatively or quantitatively. Qualitative assessments of precision are generally based on evaluations of larger data sets. Quantitative measurements of precision are generally based on the testing of duplicate samples. Laboratories used for Site samples evaluate precision through analysis of laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs). Potential QA/QC issues identified are summarized in the QA/QC evaluations, laboratory case narratives, and Data Usability Worksheets in the original reports listed in Section 9.2.

No data were rejected from these investigations, and the results are considered to be sufficiently precise for inclusion in this Temporary Solution.

9.2.4.3 Accuracy

Accuracy is the degree of agreement of a measurement with an accepted "true" value, wherein the difference between the measurement and the true value is usually expressed as a percentage. The accuracy of a testing method can be evaluated using LCS/LCSD. Accuracy evaluation in sample matrices can also be evaluated using matrix spikes (MS) and matrix spike duplicates (MSD). Potential QA/QC issues identified are summarized in the QA/QC evaluations, laboratory case narratives, and Data Usability Worksheets in the original reports listed in Section 9.2.

No data were rejected from these investigations, and the results are considered to be sufficiently accurate for inclusion in this Temporary Solution.

9.2.5 Field Data Usability Assessment

Field samples included in this assessment were collected in accordance with standard sampling methods, preserved at the Site, and delivered to the laboratory within acceptable holding times. Field QC samples included field duplicates and MS/MSDs. Field QC elements (sampling procedure, sample containers and preservation, holding times, field duplicates, MS/MSDs, and equipment and field blanks) were used in accordance with MassDEP QA/QC guidance (MassDEP 2017). Potential QA/QC issues identified are summarized in the QA/QC evaluations, laboratory case narratives, and Data Usability Worksheets in the original reports listed in Section 9.2.

9.2.6 Rejection of Analytical Data as the Result of Gross Failure

No data were deemed unusable or eliminated as the result of a “gross failure” of QC in the process of sampling or analysis as described in the MassDEP data usability guidance (MassDEP 2007).

9.3 Conclusions

A Representativeness Evaluation and Data Usability Assessment has been prepared for this Temporary Solution pursuant to 310 CMR 40.1057(2)(k) and MassDEP Policy #WSC-07-350 *MCP Representativeness Evaluations and Data Usability Assessments* (MassDEP 2007).

Soil, groundwater, indoor air, surface water, and sediment data collected at the Site in support of the Temporary Solution were evaluated as part of a Representativeness Evaluation and Data Usability Assessment, with the following conclusions:

- The number and types of samples collected are adequate for decision-making in this Temporary Solution.
- The results are acceptable for inclusion in this Temporary Solution and are suitable for their intended use.

10. Licensed Site Professional Statement and Opinion

10.1 Phase IV Status Report (310 CMR 40.0877(4)(f))

In accordance with 310 CMR 40.0877(4)(f), the original seal and signature of Matthew E. Hackman, LSP #9456, is provided in Section C of the Phase IV Transmittal Form BWSC-108, provided via electronic transmission with this report (Appendix A).

10.2 Temporary Solution (310 CMR 40.1057 (1)(g) and (1)(h))

Based on the results of the Phase II CSA Addendum (Aptim 2023b), surface water and sediment risk assessment (Aptim 2021a), and the Phase IV Plan (Aptim 2023c; Jacobs 2023a, 2023b), as well as the details provided in this document, the requirements of a Temporary Solution have been met.

The impacts at the Site are attributed to various industrial processes that were performed at the former Varian facility, which used TCE, PCE, and 1,1,1-TCA. An updated exposure assessment and risk characterization was completed, and based on this assessment, it is concluded that a condition of No Substantial Hazard currently exists at the Site.

Additional activities will continue to be evaluated and pursued as appropriate to achieve a Permanent Solution for the Site. These activities include:

- Additional sampling to finalize the remedy designs for the Building 5 Overburden Source Area, PSL10 Source Area, bedrock, and downgradient plume
- Continued remedy installation for Building 3 Overburden Source Area and the downgradient plume
- Remedy installation for the Building 5 Overburden Source Area, PSL10 Source Area, and bedrock

Semiannual Temporary Solution Status Reports will be submitted 6 months after this Temporary Solution is finalized. Additional interim reports may also be submitted as Phase IV design construction is completed. A Five-Year Periodic Review will be performed 5 years after this Temporary Solution Statement is submitted if a Permanent Solution has not been achieved beforehand.

In accordance with 310 CMR 40.1057(1)(g) and (1)(h), the original seal and signature of Matthew E. Hackman, LSP #9456, is provided in Section G of the Permanent and Temporary Solution Statement Transmittal Form BWSC-104, provided via electronic transmission with this report (Appendix B).

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Tables



Table 2-1. Building 3 Operation and Maintenance Data

Former Varian Facility Site
150 Sohier Road, Beverly, Massachusetts

Date	Extraction Well BLD3-SVE1		Extraction Well BLD3-SVE2		Extraction Well BLD3-SVE3		Extraction Well BLD3-SVE4		BLDG3-VP1		BLDG3-VP2		BLDG3-VP3		BLDG3-VP5		BLDG3-VP6		BLDG3-VP7		BLDG2-SV1		Carbon Influent	Carbon Midpoint	Carbon Effluent	Total Flow Rate ⁽¹⁾	Effluent Percent Reduction ⁽²⁾
	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	VOC (ppm)	VOC (ppm)	VOC (ppm)	cfm	
1/13/2023	---	ND	---	ND	---	ND	---	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	165	NA
1/24/2023	---	ND	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	160	NA
2/10/2023	---	ND	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	150	NA
2/21/2023	---	ND	---	0.3	---	CLOSED	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	150	NA
3/7/2023	-0.101	ND	-0.246	ND	-0.267	ND	-0.261	ND	-0.591	ND	+0.007	0.300	+0.005	0.200	+0.006	ND	+0.003	0.100	+0.004	0.800	+0.013	1.000	ND	ND	ND	150	NA
3/21/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	150	NA
4/4/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	126	NA
4/18/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	126	NA
5/2/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	138	NA
5/16/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	126	NA
5/30/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	126	NA
6/13/2023	---	CLOSED	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	160	NA
6/27/2023	--	CLOSED	--	ND	--	ND	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	160	NA
7/11/2023	---	CLOSED	--	0.1	--	0.2	--	0.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	ND	ND	155	NA
7/25/2023	--	CLOSED	--	ND	--	ND	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	150	NA
8/8/2023	--	CLOSED	-3.535	ND	-3.563	ND	-3.624	ND	-0.564	0.100	-0.033	ND	-0.015	ND	-0.026	ND	-0.061	ND	-0.001	0.400	+0.033	ND	ND	ND	160	NA	
8/25/2023	--	CLOSED	--	ND	--	0.2	--	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	ND	ND	155	NA
9/5/2023	--	CLOSED	--	ND	--	ND	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	ND	ND	138	NA
9/20/2023	---	CLOSED	--	0.1	--	0.2	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	ND	ND	142	NA
10/4/2023	--	CLOSED	--	ND	--	ND	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.1	0.1	ND	138	NA
10/18/2023	--	CLOSED	--	0.3	--	0.5	--	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.4	ND	ND	144	NA
11/1/2023	--	CLOSED	--	0.1	--	0.2	--	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.7	ND	ND	180	NA
11/14/2023	--	CLOSED	-7.778	ND	-7.706	ND	-9.829	ND	-0.822	ND	-0.041	ND	-0.017	ND	-0.056	ND	+0.022	ND	+0.002	ND	+0.016	ND	ND	ND	150	NA	
11/28/2023	--	CLOSED	--	0.1	--	ND	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	ND	ND	148	NA
12/26/2023	--	0.1	--	0.2	--	0.3	--	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.9	ND	ND	132	NA

Notes:

(1) = Not adjusted for temperature

(2)= Target off-gas VOC reduction is 95% per MassDEP policy (MassDEP, 1994)

--- Not collected

-/+ = negative or positive differential pressure reading. A negative differential pressure reading means the sub-slab pressure is lower than the indoor pressure, indicating that the SVE system is performing as a vapor intrusion mitigation system or sub-slab depressurization system (SSDS) that provides protection against migration of vapors into the building indoor air.

cfm = cubic feet per minute

NA = Not applicable

ND = Not-detected above instrument detection limit (0.1 ppm)

ppm = parts per million

VOC = volatile organic compounds measured with a photoionization detector

"wc = inches of water column

Table 2-2. Building 3 VOC Mass Removal Estimate

Former Varian Facility Site

150 Sohier Road, Beverly, Massachusetts

Sample Date	Vapor Influent Concentration (ppm(v))	Flow (scfm)	Days Operational	VOC Mass Removal Rate (lb./day)	Total VOC Mass Removed (lb.)	Comments
7/11/2023	0.20	141.34	4432	0.01	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
7/25/2023	ND	141.34	4446	0.01	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
8/8/2023	ND	146.59	4460	0.00	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
8/25/2023	0.20	143.14	4477	0.01	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
9/5/2023	ND	131.58	4488	0.01	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
9/20/2023	0.20	132.69	4503	0.01	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
10/4/2023	0.10	132.13	4517	0.01	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
10/18/2023	0.40	133.26	4531	0.02	1,925	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
10/25/2023	NM	129.65	4538	0.02	1,926	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
11/1/2023	0.70	166.00	4545	0.03	1,926	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
11/14/2023	ND	133.83	4558	0.03	1,926	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
11/28/2023	0.20	138.08	4572	0.01	1,926	Extracting from Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4
12/26/2023	0.90	122.58	4600	0.04	1,927	Extracting from Bldg3-SVE1, Bldg3-SVE2, Bldg3-SVE3 & Bldg3-SVE4

Notes:

ppm = parts per million

scfm = standard cubic feet per minute (see note 6)

lbs/day = pounds per day

lbs = pounds

VOC = volatile organic compounds

ND = non-detect

1. Vapor influent concentrations as measured with a photoionization detector (PID).

2. Total VOC mass removed (lbs) is calculated by multiplying the VOC Mass Removal Rate (lbs/day) on the sampling date by the # of operating days between visits.

3. VOC mass removal rate (lbs/day) = average VOC level between current and previous monitoring (ppm)/
 $10E6 \times 1 \text{ lbmole}/379.4 \text{ cu ft} \times (158 \text{ lbs}/\text{lbmole}) \times \text{flow (ft}^3/\text{min)} \times (1440 \text{ min}/\text{day})$

4. 158 lbs/lbmole is the weighted average molecular weight of the primary contaminants in the soil vapor (80% Tetrachloroethene, 19% Trichloroethene, and 1% acetone based on analytical results from recovered soil vapor).

5. VOC concentration not monitored on 2/4/10, assumed concentration noted on 2/18/10.

6. Flow rate (scfm) is calculated with the following equation: $128.8 \times \text{Flow coefficient (K)} \times \text{pipe diameter}^2 \text{ (in)} \times \sqrt{\text{psia} \times \text{differential pressure (IWC)} / (\text{Temp (F)} + 460) \times \text{Sp Gr @ 60}^\circ\text{F}}$ to adjust for system operating temperature

Table 2-3. Building 3 Soil Analytical Results
Former Varian Facility Site,
150 Sohler Road, Beverly, Massachusetts

Sample ID	SB501_20230907_39-40_FD_SO	SB501_20230907_24-25_N_SO	SB501_20230907_34-35_N_SO	SB501_20230907_39-40_N_SO	SB501_20230907_44-45_N_SO	SB501_20230907_49-50_N_SO	SB501_20230907_54-55_N_SO	SB501_20230908_55-56_N_SO	SB501_20230908_62-63_N_SO	SB504_20230906_17-18_N_SO	SB504_20230906_37-38_N_SO	SB504_20230906_46-47_N_SO	SB504_20230907_51-52_N_SO
Location	SB-501	SB-501	SB-501	SB-501	SB-501	SB-501	SB-501	SB-501	SB-501	SB-504	SB-504	SB-504	SB-504
Sample Date	09/07/2023	09/07/2023	09/07/2023	09/07/2023	09/07/2023	09/07/2023	09/07/2023	09/08/2023	09/08/2023	09/06/2023	09/06/2023	09/06/2023	09/07/2023
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Parameter	Units												
p-Isopropyltoluene	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
sec-Butylbenzene	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
Styrene	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
tert-Amyl methyl ether	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
tert-Butylbenzene	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
Tetrachloroethene	mg/kg	0.403	0.0059	0.0058	0.472	0.766	0.123	< 0.099 U	0.492	0.15	0.0022	1.95	0.122
Tetrahydrofuran	mg/kg	< 0.53 U	< 0.0079 U	< 0.0088 U	< 0.54 U	< 0.56 U	< 0.45 U	< 0.49 U	< 0.51 U	< 0.46 U	< 0.0087 U	< 0.0091 U	< 0.0094 U
Toluene	mg/kg	< 0.053 U	< 0.00079 U	< 0.00088 U	< 0.054 U	< 0.056 U	< 0.045 U	< 0.049 U	< 0.051 U	< 0.046 U	< 0.00087 U	< 0.00091 U	< 0.00094 U
trans-1,2-Dichloroethene	mg/kg	< 0.053 U	< 0.00079 U	< 0.00088 U	< 0.054 U	< 0.056 U	< 0.045 U	< 0.049 U	< 0.051 U	< 0.046 U	< 0.00087 U	< 0.00091 U	< 0.00094 U
trans-1,3-Dichloropropene	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
Trichloroethylene	mg/kg	0.374	0.0016	0.0018	0.395	1.36	4.95	1.96	1.65	0.97	< 0.00087 U	3.7	3.29
Trichlorofluoromethane	mg/kg	< 0.27 U	< 0.0039 U	< 0.0044 U	< 0.27 U	< 0.28 U	< 0.22 U	< 0.25 U	< 0.26 U	< 0.23 U	< 0.0043 U	< 0.0045 U	< 0.0047 U
Vinyl Chloride	mg/kg	< 0.11 U	< 0.0016 U	< 0.0018 U	< 0.11 U	< 0.11 U	< 0.089 U	< 0.099 U	< 0.1 U	< 0.092 U	< 0.0017 U	< 0.0018 U	< 0.0019 U
Xylene, o-	mg/kg	< 0.053 U	< 0.00079 U	< 0.00088 U	< 0.054 U	< 0.056 U	< 0.045 U	< 0.049 U	< 0.051 U	< 0.046 U	< 0.00087 U	< 0.00091 U	< 0.00094 U
Xylenes, m- & p-	mg/kg	< 0.053 U	< 0.00079 U	< 0.00088 U	< 0.054 U	< 0.056 U	< 0.045 U	< 0.049 U	< 0.051 U	< 0.046 U	< 0.00087 U	< 0.00091 U	< 0.00094 U
Xylenes, Total	mg/kg	< 0.053 U	< 0.00079 U	< 0.00088 U	< 0.054 U	< 0.056 U	< 0.045 U	< 0.049 U	< 0.051 U	< 0.046 U	< 0.00087 U	< 0.00091 U	< 0.00094 U

Notes:

mg/kg = milligram(s) per kilogram

U = analyte was analyzed for, but was not detected above the reportable detection limit

UJ = analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation

Table 2-4. Building 5 Operation and Maintenance Data
Former Varian Facility Site
150 Sohier Road, Beverly, Massachusetts

Date	Extraction Well BLDG5-SVE1		Extraction Well BLDG5-SVE2		Extraction Well BLDG5-SVE3		Extraction Well BLDG5-SVE4		BLDG5-SV1		BLDG5-SV2		BLDG5-SV3		BLDG5-SV4		BLDG5-SV5		BLDDG5-SV6		OB44-S		Effluent	
	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	Pressure ("wc)	VOC (ppm)	VOC (ppm)	Total Vapor Flow (cfm) ⁽¹⁾
7/11/2023	---	0.3	---	ND	---	0.2	---	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	140
7/25/2023	---	ND	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	143
8/8/2023	-6.107	ND	-5.715	ND	-5.774	ND	-0.809	ND	-0.512	ND	-0.198	ND	-0.003	ND	+0.003	ND	-0.331	ND	+0.032	ND	-0.002	ND	ND	143
8/25/2023	---	0.3	---	0.1	---	0.2	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	143
9/5/2023	---	ND	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	140
9/20/2023	---	ND	---	ND	---	0.2	---	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	143
10/4/2023	---	0.7	---	0.2	---	0.1	---	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	143
10/18/2023	---	ND	---	0.1	---	0.1	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	132
11/1/2023	---	0.2	---	ND	---	0.2	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	188
11/14/2023	-5.969	ND	-5.57	ND	-5.572	ND	-0.867	ND	-0.479	ND	-0.184	ND	-0.001	ND	+0.004	ND	-0.299	ND	+0.22	ND	+0.001	ND	ND	143
11/28/2023	---	0.2	---	ND	---	0.1	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	141
12/13/2023	---	0.2	---	ND	---	ND	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	152
12/26/2023	---	ND	---	ND	---	0.3	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND	143

Notes:
(1) = Not adjusted for temperature
--- = Not collected
-/+ = negative or positive differential pressure reading. A negative differential pressure reading means the sub-slab pressure is lower than the indoor pressure, indicating that the SVE system is performing as a vapor intrusion mitigation system or sub-slab depressurization system (SSDS) that provides protection against migration of vapors into the building indoor air.
cfm = cubic feet per minute
ND = Not detected above instrument detection limit (0.1 ppm)
ppm = parts per million
VOC = Volatile organic compounds measured with a photoionization detector
"wc = inches of water column

Table 2-5. Building 5 VOC Mass Removal Estimate

Former Varian Facility Site
150 Sohier Road, Beverly, Massachusetts

Sample Date	Vapor Influent Concentration (ppm(v))	Flow (scfm)	Days Operational	VOC Mass Removal Rate (lb/day)	Total VOC Mass Removed (lb)	Comments
7/11/2023	ND	135	3103	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
7/25/2023	ND	135	3117	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
8/8/2023	ND	136	3131	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
8/25/2023	ND	140	3148	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
9/5/2023	ND	136	3159	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
9/20/2023	ND	140	3174	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
10/4/2023	ND	138	3188	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
10/18/2023	ND	139	3202	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
11/1/2023	ND	139	3216	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
11/14/2023	ND	139	3229	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
11/28/2023	ND	139	3243	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
12/13/2023	ND	141	3258	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4
12/26/2023	ND	142	3271	0.00	130.7	System extracting from Bldg5-SVE1, Bldg5-SVE2, Bldg5-SVE3 & Bldg5-SVE4

Notes:

ppm = parts per million

scfm = standard cubic feet per minute (see note 5)

lbs/day = pounds per day

lbs = pounds

VOC = volatile organic compounds

ND = non-detect

- Vapor influent concentrations as measured with a photoionization detector (PID).
- Total VOC mass removed (lbs) is calculated by multiplying the VOC Mass Removal Rate (lbs/day) on the sampling date by the # of operating days between visits.
- VOC mass removal rate (lbs/day) = average VOC level between current and previous monitoring (ppm) / $10E6 \times 1 \text{ lbmole} / 379.4 \text{ cu ft} \times (134 \text{ lbs} / \text{lbmole}) \times \text{flow (ft}^3 / \text{min)} \times (1440 \text{ min} / \text{day})$
- 134 lbs/lbmole is the weighted average molecular weight of the primary contaminants in the soil vapor (93% Trichloroethene and 7% Tetrachloroethene based on analytical results from recovered soil vapor).
- Flow rate (scfm) is calculated with the following equation: $128.8 \times \text{Flow coefficient (K)} \times \text{pipe diameter}^2 \text{ (in)} \times \sqrt{(\text{psia} \times \text{differential pressure (IWC)}) / (\text{Temp (F)} + 460)} \times \text{Sp Gr @ 60}^\circ\text{F}$ to adjust for system operating temperature

Table 2-6

Select Groundwater Analytical Results

Former Varian Facility Site

150 Sohler Road, Beverly, Massachusetts

Location	OB-61-S	OB-62-DO	OB-63-DO	OB-64-DO	OB-65-DO	P-32
Sample Date	12/07/2023	10/13/2023	10/13/2023	10/13/2023	10/12/2023	12/07/2023
Volatiles (mg/L)						
1,1,1,2-Tetrachloroethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,1,1-Trichloroethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	0.001 U	0.001 U	0.1 U	0.001	0.001 U	0.0011
1,1-Dichloroethene	0.001 U	0.001 U	0.1 U	0.0016	0.001 U	0.001 U
1,2,3-Trichlorobenzene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Bromoform	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Bromomethane	0.002 U	0.002 U	0.2 U	0.002 U	0.002 U	0.002 U
Carbon tetrachloride	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Chlorodibromomethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Chloroethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.0024	0.1 U	0.001 U	0.001 U	0.001 U
Chloromethane	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	0.001 U	0.001 U	3.41	0.0385	0.001	0.263
cis-1,3-Dichloropropene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Dichloromethane	0.002 U	0.002 U	0.2 U	0.002 U	0.002 U	0.002 U
Hexachlorobutadiene	0.002 UJ	0.002 U	0.2 U	0.002 U	0.002 U	0.002 UJ
Tetrachloroethene	0.0162	0.0093	7.93	0.0129	0.046	0.0013
trans-1,2-Dichloroethene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.0203
trans-1,3-Dichloropropene	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.001 U
Trichloroethylene	0.0301	0.0053	18	0.254	0.0931	0.0046
Trichlorofluoromethane	0.002 U	0.002 U	0.2 U	0.002 U	0.002 U	0.002 U
Vinyl Chloride	0.001 U	0.001 U	0.1 U	0.001 U	0.001 U	0.0061

Notes:

mg/L = milligram(s) per liter

U = the analyte was analyzed for, but was not detected above the reportable detection limit

UJ = analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation

Table 2-7. Stream A Surface Water Analytical Results
 December 2022 to December 2023
 Former Varian Facility Site
 150 Sohier Road, Beverly, Massachusetts

Location	STR-20		STRM-A-SCDS			STR-19			STR-18			CULVERT_OUTFALL			STR-17		STRHA-07A			
	Sample Date	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/05/2023	12/14/2022	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/04/2023	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/04/2023
Volatiles (mg/L)																				
1,1,1,2-Tetrachloroethane	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
1,1,1-Trichloroethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1,2,2-Tetrachloroethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1,2-Trichloroethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
1,2,4-Trichlorobenzene	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
1,2-Dibromoethane	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
1,2-Dichlorobenzene	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
1,2-Dichloroethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
1,2-Dichloropropane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
1,3-Dichlorobenzene	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
1,4-Dichlorobenzene	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U	--	0.001 U	--	--	0.001 U	0.001 U
Bromodichloromethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Bromoform	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Bromomethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon tetrachloride	0.002 U	0.001 UJ	0.002 U	0.002 U	0.001 UJ	0.002 U	0.002 U	0.001 UJ	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 UJ	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Chlorobenzene	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Chlorodibromomethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Chloroethane	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Chloroform	0.003	0.0023	0.002 U	0.002 U	0.0017	0.002 U	0.002 U	0.0012	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Chloromethane	0.002 U	0.001 U	0.047	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.025	0.002 U	0.002 U	0.001 U
cis-1,2-Dichloroethene	0.002 U	0.001 U	0.021	0.005	0.0068	0.018	0.007	0.0049	0.04	0.014	0.0104	0.003	0.004	0.0077	0.008	0.0066	0.012	0.007	0.0082	0.0082
cis-1,3-Dichloropropene	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Dichloromethane	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.002 U	0.005 U	0.005 U	0.005 U	0.002 U
Hexachlorobutadiene	--	0.002 U	--	--	0.002 U	--	--	0.002 U	--	--	0.002 U	--	--	0.002 U	--	0.002 U	--	--	0.002 U	0.002 U
Tetrachloroethene	0.002 U	0.001 U	0.005	0.002 U	0.0013	0.004	0.002 U	0.001 U	0.005	0.002 U	0.0012	0.002 U	0.002 U	0.0011	0.002 U	0.001 U	0.002	0.002 U	0.0041	0.0041
trans-1,2-Dichloroethene	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
trans-1,3-Dichloropropene	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U
Trichloroethylene	0.002 U	0.001 U	0.013	0.003	0.0033	0.012	0.004	0.0024	0.017	0.006	0.0037	0.002	0.002 U	0.0046	0.006	0.0036	0.012	0.006	0.0167	0.0167
Trichlorofluoromethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Vinyl Chloride	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.001 U

Notes:
 mg/L = milligrams per liter = parts per million or ppm
 U = the analyte was analyzed for, but was not detected above the reportable detection limit
 UJ = analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation

**Table 2-8. Unnamed Stream Surface Water Analytical Results
December 2022 to December 2023**
Former Varian Facility Site
150 Sohier Road, Beverly, Massachusetts

Location Sample Date	STR-03			STR-02			STRMH-02		
	12/14/2022	05/24/2023	11/29/2023	12/14/2022	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/04/2023
Volatiles (mg/L)									
1,1,1,2-Tetrachloroethane	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,1,1-Trichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1,2,2-Tetrachloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1,2-Trichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	--	--	0.001 UJ	--	--	0.001 U	--	--	0.001 U
1,2,4-Trichlorobenzene	--	--	0.001 UJ	--	--	0.001 U	--	--	0.001 U
1,2-Dibromoethane	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,2-Dichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,2-Dichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,2-Dichloropropane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,3-Dichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,4-Dichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
Bromodichloromethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Bromoform	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Bromomethane	0.002 U	0.002 U	0.002 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon tetrachloride	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 UJ	0.002 U	0.002 U	0.001 U
Chlorobenzene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chlorodibromomethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chloroform	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chloromethane	0.053	0.002 U	0.001 U	0.065	0.002 U	0.001 U	0.044	0.002 U	0.001 U
cis-1,2-Dichloroethene	0.013	0.037	0.0011	0.002	0.018	0.0175	0.003	0.023	0.0191
cis-1,3-Dichloropropene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Dichloromethane	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U
Hexachlorobutadiene	--	--	0.002 U	--	--	0.002 U	--	--	0.002 U
Tetrachloroethene	0.019	0.02	0.001 U	0.002 U	0.004	0.0094	0.003	0.012	0.0097
trans-1,2-Dichloroethene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
trans-1,3-Dichloropropene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Trichloroethylene	0.006	0.007	0.001 U	0.002 U	0.002 U	0.0274	0.005	0.029	0.0408
Trichlorofluoromethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Vinyl Chloride	0.002 U	0.006	0.001 U	0.002 U	0.007	0.0034	0.002 U	0.005	0.0029

Notes:

mg/L = milligrams per liter = parts per million or ppm

U = the analyte was analyzed for, but was not

detected above the reportable detection limit

UJ = analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation

**Table 2-8. Unnamed Stream Surface Water Analytical Results
December 2022 to December 2023**
Former Varian Facility Site
150 Sohier Road, Beverly, Massachusetts

Location Sample Date	STR-05			STRHA-04			STRHA-07B		
	12/14/2022	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/04/2023	12/14/2022	05/24/2023	12/04/2023
Volatiles (mg/L)									
1,1,1,2-Tetrachloroethane	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,1,1-Trichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1,2,2-Tetrachloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1,2-Trichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ
1,2,3-Trichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,2,4-Trichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,2-Dibromoethane	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,2-Dichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,2-Dichloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,2-Dichloropropane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
1,3-Dichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
1,4-Dichlorobenzene	--	--	0.001 U	--	--	0.001 U	--	--	0.001 U
Bromodichloromethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Bromoform	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Bromomethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon tetrachloride	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chlorobenzene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chlorodibromomethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chloroethane	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chloroform	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Chloromethane	0.002 U	0.002 U	0.001 U	0.002	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
cis-1,2-Dichloroethene	0.021	0.023	0.0118	0.017	0.019	0.0087	0.012	0.012	0.0092
cis-1,3-Dichloropropene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Dichloromethane	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U
Hexachlorobutadiene	--	--	0.002 U	--	--	0.002 U	--	--	0.002 U
Tetrachloroethene	0.016	0.013	0.0046	0.012	0.01	0.0028	0.009	0.008	0.0069
trans-1,2-Dichloroethene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
trans-1,3-Dichloropropene	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.001 U
Trichloroethylene	0.06	0.062	0.0194	0.046	0.048	0.0125	0.037	0.032	0.0275
Trichlorofluoromethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Vinyl Chloride	0.002 U	0.003	0.0021	0.002 U	0.002 U	0.0013	0.002 U	0.002 U	0.001 U

Notes:

mg/L = milligrams per liter = parts per million or ppm

U = the analyte was analyzed for, but was not

detected above the reportable detection limit

UJ = analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation

Table 2-8. Unnamed Stream Surface Water Analytical Results
December 2022 to December 2023
Former Varian Facility Site
150 Sohier Road, Beverly, Massachusetts

Location	STRHA-08		STR-28		
	Sample Date	12/14/2022	05/24/2023	12/14/2022	05/24/2023
Volatiles (mg/L)					
1,1,1,2-Tetrachloroethane	--	--	--	--	0.001 U
1,1,1-Trichloroethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1,2,2-Tetrachloroethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1,2-Trichloroethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
1,1-Dichloroethene	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	--	--	--	--	0.001 U
1,2,4-Trichlorobenzene	--	--	--	--	0.001 U
1,2-Dibromoethane	--	--	--	--	0.001 U
1,2-Dichlorobenzene	--	--	--	--	0.001 U
1,2-Dichloroethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
1,2-Dichloropropane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
1,3-Dichlorobenzene	--	--	--	--	0.001 U
1,4-Dichlorobenzene	--	--	--	--	0.001 U
Bromodichloromethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Bromoform	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Bromomethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Carbon tetrachloride	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Chlorobenzene	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Chlorodibromomethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Chloroethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Chloroform	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Chloromethane	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
cis-1,2-Dichloroethene	0.003	0.004	0.003	0.004	0.0041
cis-1,3-Dichloropropene	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Dichloromethane	0.005 U	0.005 U	0.005 U	0.005 U	0.002 U
Hexachlorobutadiene	--	--	--	--	0.002 U
Tetrachloroethene	0.002 U	0.002 U	0.002 U	0.002 U	0.0021
trans-1,2-Dichloroethene	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
trans-1,3-Dichloropropene	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U
Trichloroethylene	0.008	0.008	0.007	0.008	0.0092
Trichlorofluoromethane	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Vinyl Chloride	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U

Notes:

mg/L = milligrams per liter = parts per million or ppm

U = the analyte was analyzed for, but was not

detected above the reportable detection limit

UJ = analyte was reported as not detected by the laboratory; however, the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation

Table 3-1: Results of the Trend Analysis for Plume Mobility Evaluation
Former Varian Facility Site
 150 Sohler Road, Beverly, Massachusetts

Monitoring Location	May 2023 Results (mg/L)		MK Trends	
	PCE	TCE	PCE	TCE
Groundwater Samples				
AP-15-S	0.002 U	0.002 U	NT	NT
CL02-BR	0.002 U	0.002 U	NT	NT
CL04-BR	0.002 U	0.002 U	NT	NT
CL04-DO	0.00400	0.019	NT	-
CL10-BR	0.002 U	0.008	NT	+
CL10-DO	2.10	1.70	+	+
CL10-S ⁽¹⁾	0.310	0.0110	NT	NT
CL11-DO	0.002 U	0.03	-	NT
CL11-S	0.0081	0.003	NT	NT
MW-2_32Tozer	0.002	0.002 U	NT	NT
OB-04-DO	0.15	0.51	+	NT
OB-05-BR	0.02 U	0.02 U	NT	NT
OB-05-DO	0.160	0.59	-	-
OB-05-S ⁽¹⁾	0.001 U	0.0003 J	NT	NT
OB-06-BR	0.014	0.028	-	-
OB-06-DO	0.003	0.015	-	-
OB-08-DO	0.210	1.40	NT	-
OB-08-S ⁽¹⁾	0.0028	0.0097	NT	-
OB-09-BR	0.28	0.11	NT	NT
OB-09-DO	0.01 U	0.01 U	NT	NT
OB-09-S	0.002 U	0.005	NT	NT
OB-18-DO	0.002 U	0.006	NT	NT
OB-18-S	0.002 U	0.002 U	NT	NT
OB-20-BR	0.002 U	0.002 U	NT	-
OB-20-DO	0.002 U	0.002 U	NT	NT
OB-23-BR	0.002 U	0.002 U	NT	NT
OB-41-S	0.017	0.087	-	-
OB-42-S	0.056	1.80	NT	NT
P-19A	0.002 U	0.002 U	NT	-
Stream Samples				
STRHA-07A	0.002 U	0.006	-	-
STRHA-07B	0.008	0.032	NT	NT
STRM-A-SCDS	0.002 U	0.003	NT	NT

Notes:

"-" = decreasing trend

"+" = increasing trend

J = estimated value

mg/L = milligram(s) per liter

MK = Mann-Kendall

NT = no trend

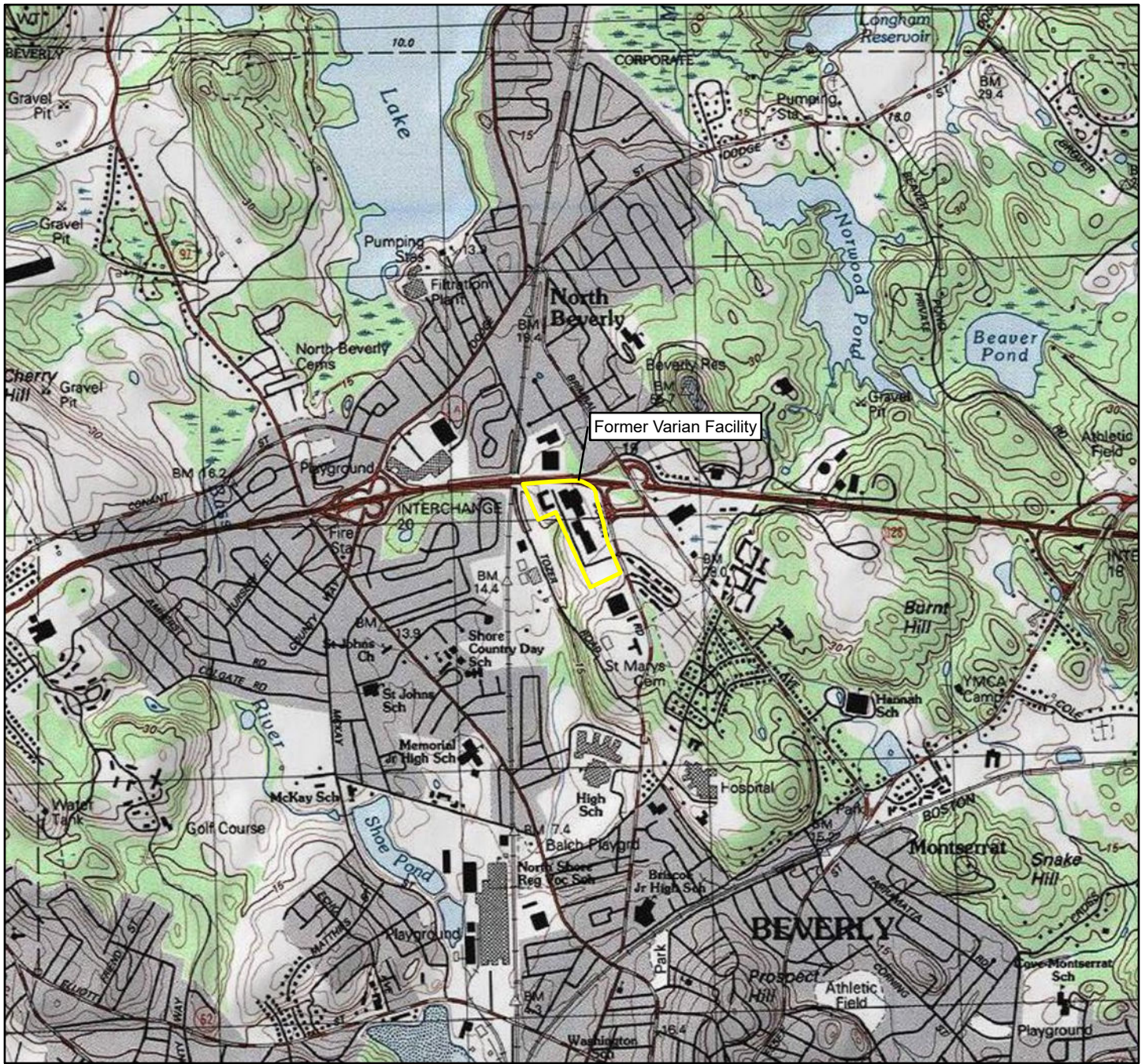
U = non-detect at reporting limit

Mann-Kendall trend analysis performed using single-tailed test at 0.05 significance level.

⁽¹⁾ Locations that required using data prior to January 2014 to obtain 8 sample results.

Figures

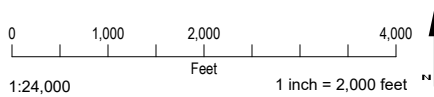




LEGEND

Former Varian Facility

VICINITY MAP



Service Layer Credits: World Street Map: Esri, HERE, Garmin, NGA, USGS, NPS
 USA_Topo_Maps: Copyright:© 2013 National Geographic Society, i-cubed

FIGURE 1-1
Site Location Map
 Temporary Solution
 Beverly, Massachusetts



LEGEND

● Abandoned or Destroyed Well	● Angled Bioremediation Injection Well	— Fence Line
● Angled Well	● Cone Penetrometer Testpoint (CPT)	— Water and Marsh Area
● Bioremediation Injection Well	● Hand Auger Sample Location (HA)	— Vegetation
● Monitoring Well (MW)	● Adjacent to a Stream (STRHA)	— Water
● Piezometer (P)	● Surface Water Stream (STR) Sample Location	— Marsh
● Recovery Well (RW)	● Benchmark Location (MSL)	— Former Varian Facility
● Temporary Permanganate Injection Point	— Approximate Location of Stream in Culvert	— Approximate Building Location
	— Approximate Stream Location	

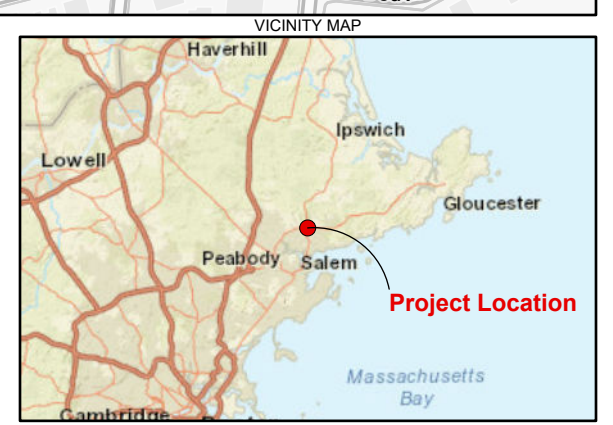
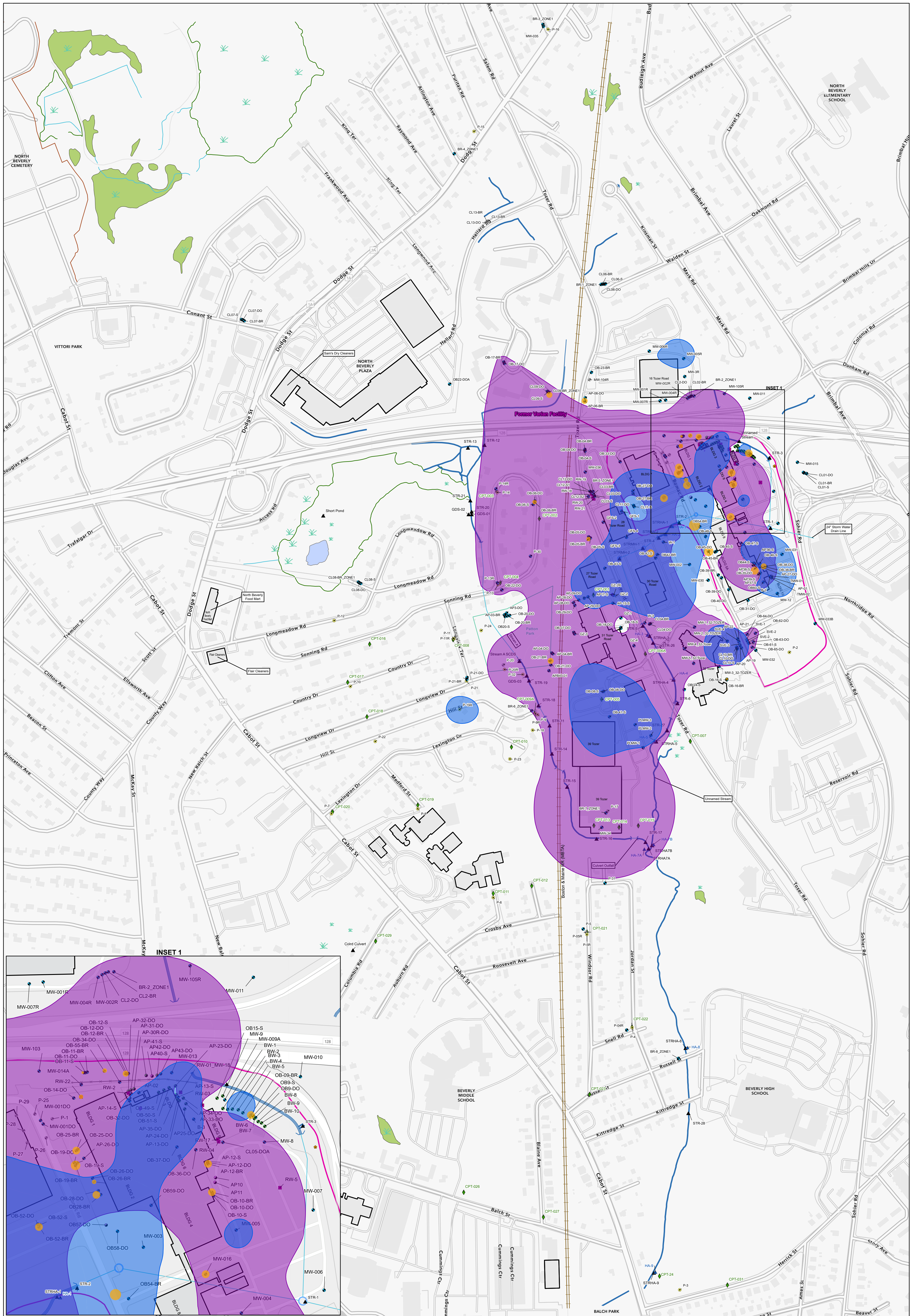


FIGURE 1-2
Expanded Site Plan
Temporary Solution
Beverly, Massachusetts



LEGEND

Abandoned or Destroyed Well	Temporary Permanganate Injection Point	Benchmark Location (MSL)	Water	Trichloroethene Concentration	
Angled Well	Angled Bioremediation Injection Well	Approximate Location of Stream in Culvert	Marsh		Bedrock Groundwater Plume ≥ 0.005 mg/L
Bioremediation Injection Well	Cone Penetrometer Testpoint (CPT)	Approximate Stream Location	Former Varian Facility		Deep Overburden Plume ≥ 0.005 mg/L
Monitoring Well (MW)	Hand Auger Sample Location (HA)	Fence Line	Approximate Building Location		Shallow Groundwater Plume ≥ 0.005 mg/L
Piezometer (P)	Surface Water Stream (STR) Sample Location	Water and Marsh Area	Vegetation	Overlap of Shallow and Deep Overburden Plumes	
Recovery Well (RW)					

Notes:
1. Plume source - Phase II Addendum (Aptim, 2023a)

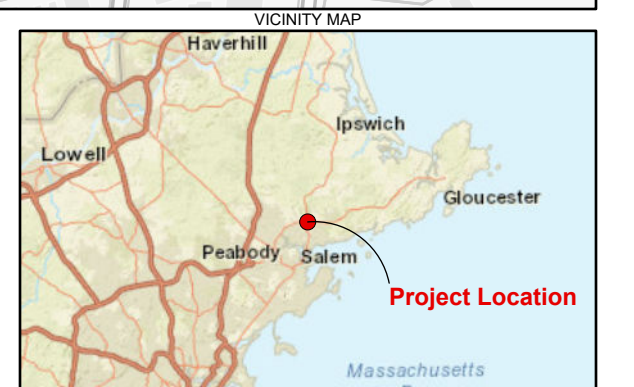
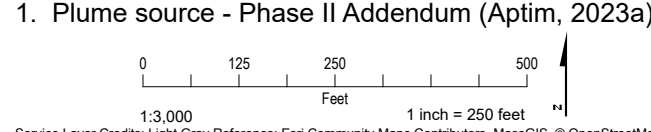
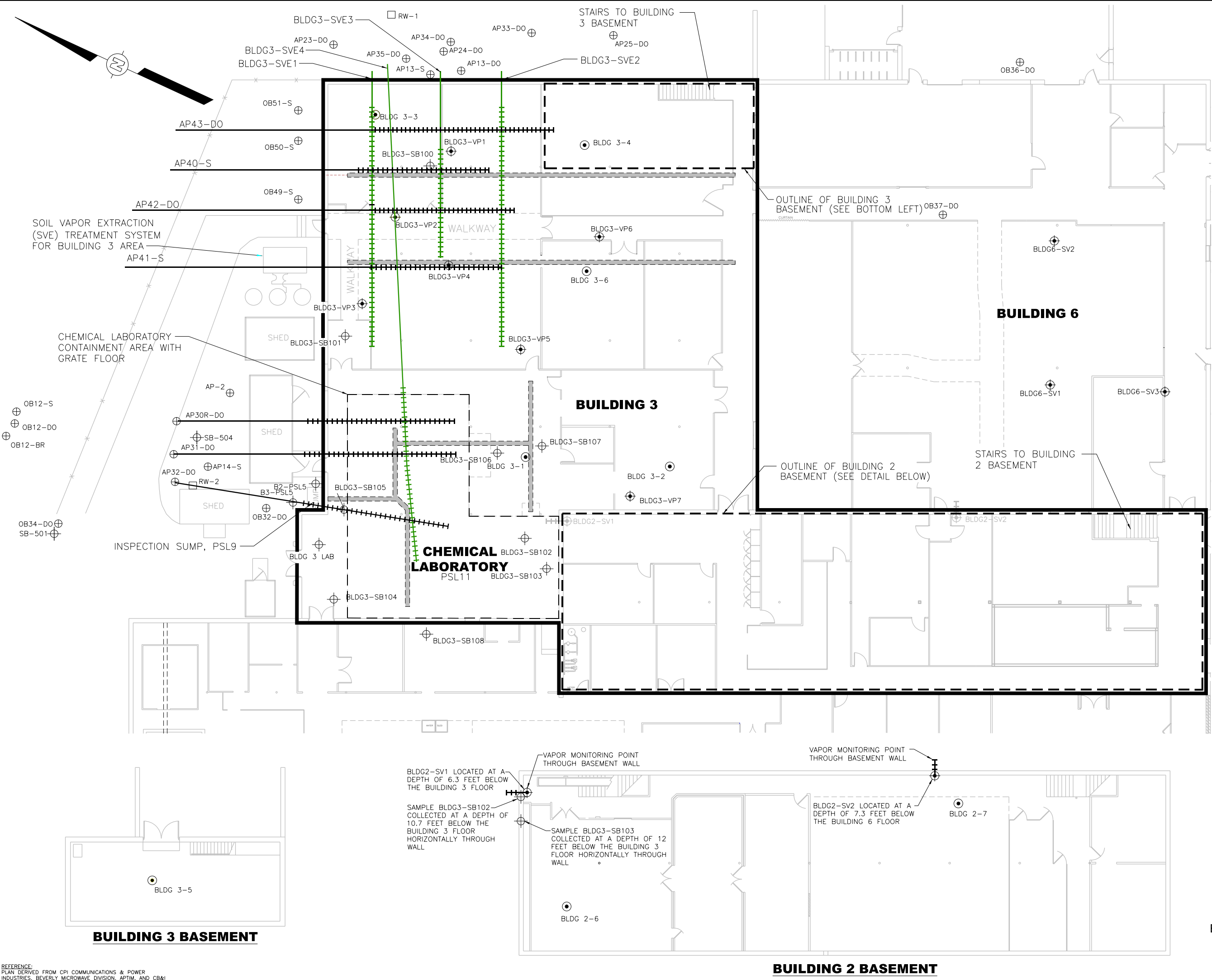


FIGURE 1-3
Trichloroethene Plume above 0.005 mg/L
Temporary Solution
Beverly, Massachusetts

DRAWING NUMBER: 631237905-D1
 APPROVED BY: [Signature]
 CHECKED BY: JP 09/22/17
 DRAWN BY: CD 09/22/17
 OFFICE: CANTON

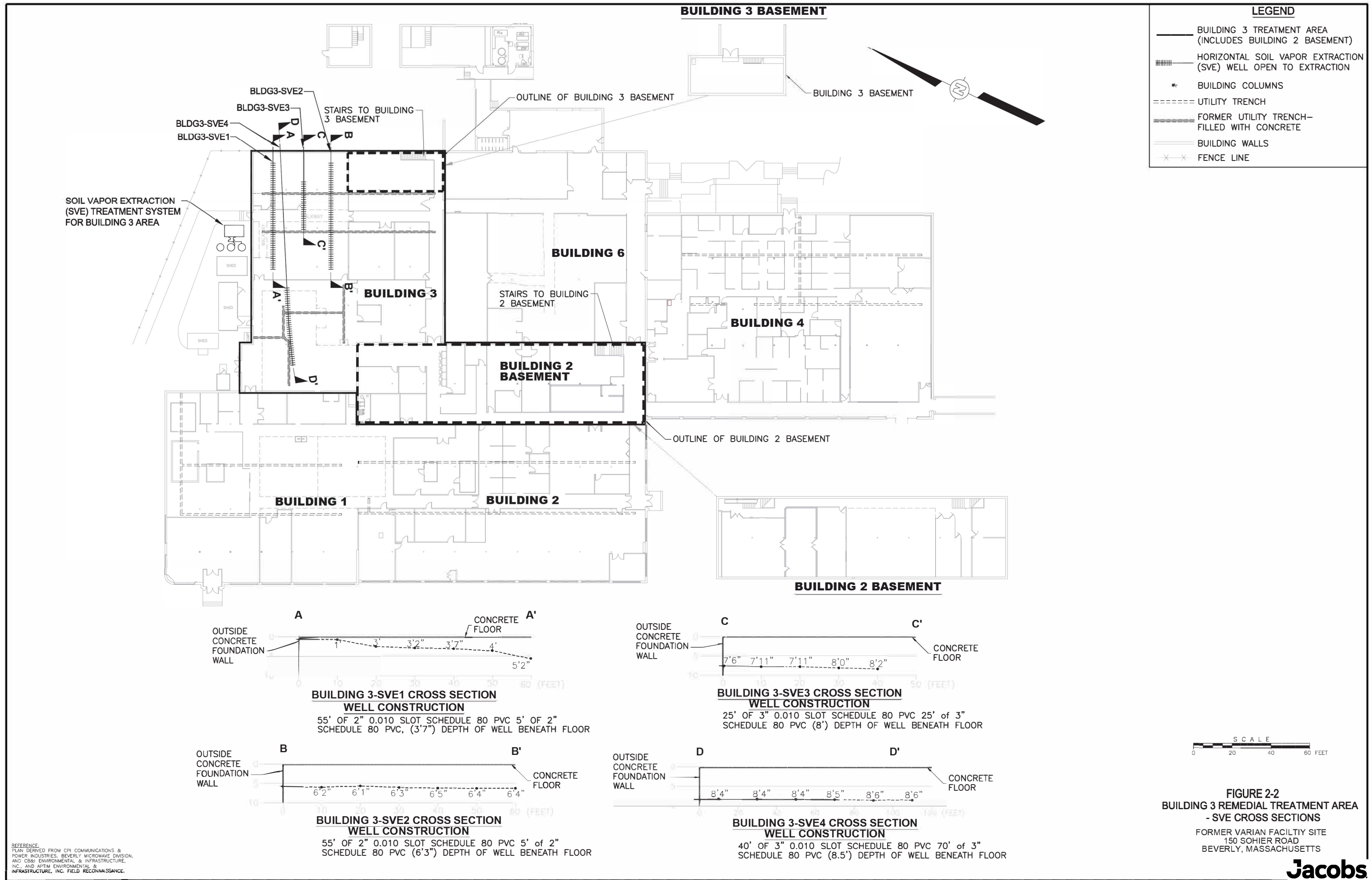


- LEGEND**
- BUILDING 3 TREATMENT AREA
 - ▤ ANGLED AND HORIZONTAL WELL
 - ▨ HORIZONTAL SOIL VAPOR EXTRACTION (SVE) WELL LOCATION
 - ⊕ SUB-SLAB SOIL VAPOR MONITORING POINT
 - ⊕ SOIL BORING LOCATION
 - ⊙ INDOOR AIR SAMPLE LOCATION
 - ⊕ MONITORING WELL
 - RECOVERY WELL
 - * BUILDING COLUMNS
 - UTILITY TRENCH
 - FORMER UTILITY TRENCH-FILLED WITH CONCRETE
 - BUILDING WALLS
 - × × FENCE LINE
 - PSL POTENTIAL SOURCE LOCATION AS DESCRIBED IN PHASE II CSA FOR RTN 3-0485

INDOOR AIR SAMPLE ID	ROOM
BLDG 2-6	ENVIRONMENTAL TESTING ROOM BUILDING 2 BASEMENT
BLDG 2-7	STORAGE ROOM BUILDING 2 BASEMENT
BLDG 3-1	MAIN CHEMICAL LABORATORY
BLDG 3-2	CHEMISTRY LABORATORY BENCH TESTING ROOM
BLDG 3-3	MID STOCK ROOM
BLDG 3-4	BUILDING 3 MACHINE SHOP
BLDG 3-5	BOILER ROOM BUILDING 3 BASEMENT
BLDG 3-6	BUILDING 3 STORAGE ROOM

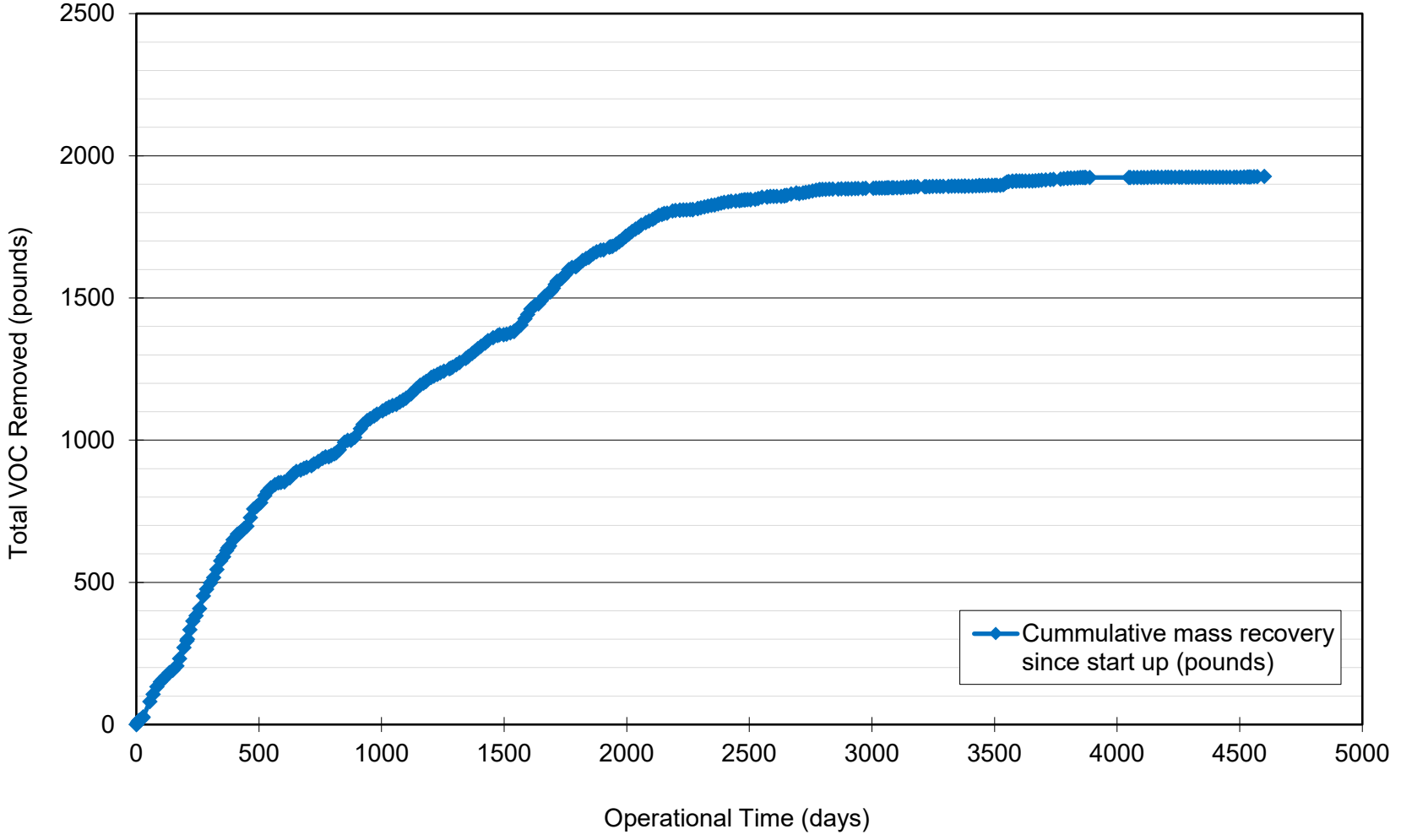
VAPOR MONITORING POINT THROUGH BASEMENT WALL
 BLDG2-SV1 LOCATED AT A DEPTH OF 6.3 FEET BELOW THE BUILDING 3 FLOOR
 SAMPLE BLDG3-SB102 COLLECTED AT A DEPTH OF 10.7 FEET BELOW THE BUILDING 3 FLOOR HORIZONTALLY THROUGH WALL
 SAMPLE BLDG3-SB103 COLLECTED AT A DEPTH OF 12 FEET BELOW THE BUILDING 3 FLOOR HORIZONTALLY THROUGH WALL
 VAPOR MONITORING POINT THROUGH BASEMENT WALL
 BLDG2-SV2 LOCATED AT A DEPTH OF 7.3 FEET BELOW THE BUILDING 6 FLOOR

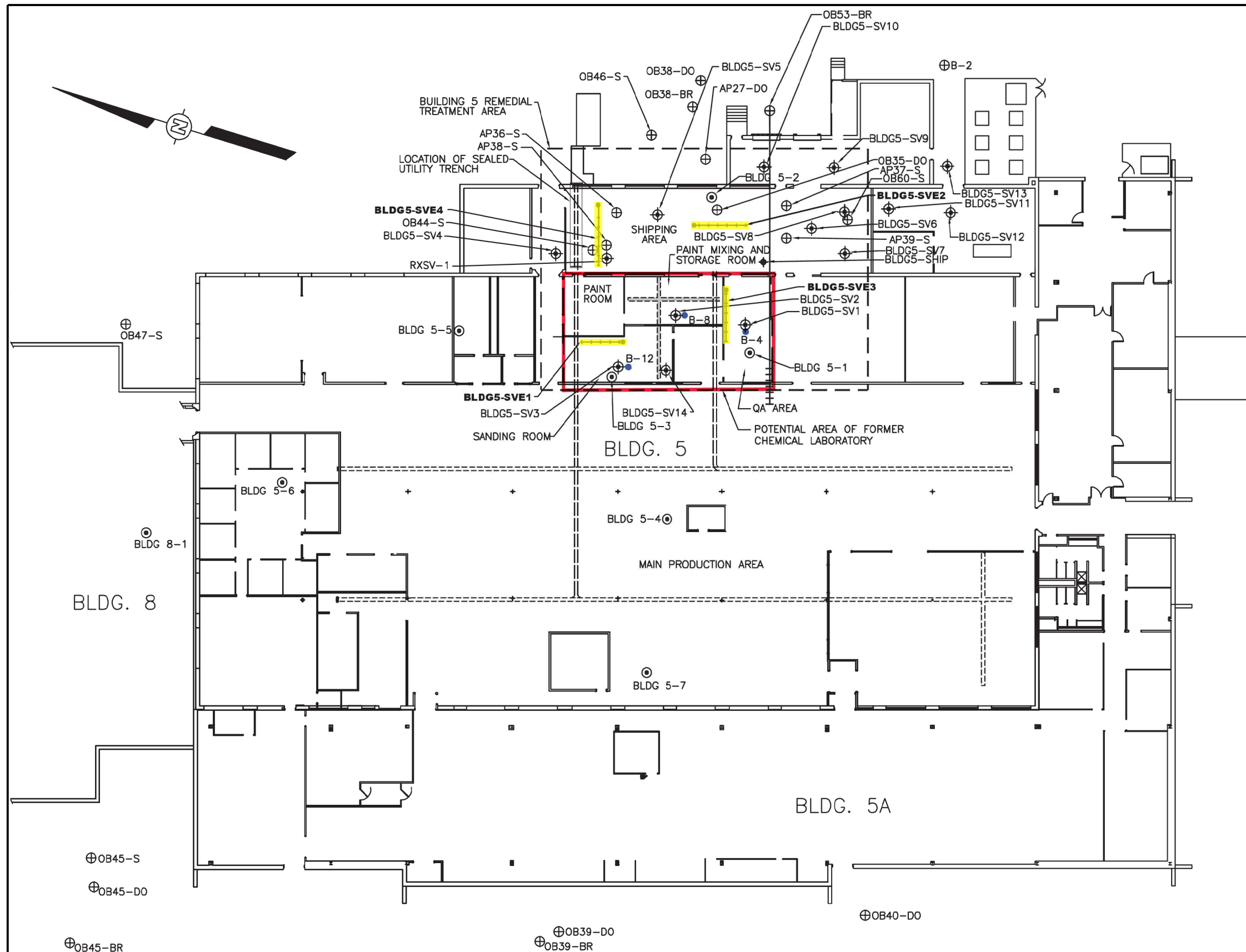
FIGURE 2-1
BUILDING 3 REMEDIAL TREATMENT AREA
SAMPLE LOCATIONS
 FORMER VARIAN FACILITY SITE
 150 SOHIER ROAD
 BEVERLY, MASSACHUSETTS



REFERENCE:
PLAN DERIVED FROM CPI COMMUNICATIONS & POWER INDUSTRIES, BEVERLY MICROWAVE DIVISION, AND CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC. AND ARTIM ENVIRONMENTAL & INFRASTRUCTURE, INC. FIELD RECONNAISSANCE.

Figure 2-3
VOC Mass Removal Estimate
Building 3 Sub-Slab SVE System
Former Varian Facility Site
150 Sohier Road
Beverly, Massachusetts





LEGEND

- ⊕ SUB-SLAB SOIL VAPOR SAMPLE LOCATION (2011-2014)
- ⊙ INDOOR AIR SAMPLE LOCATION (2011-2014)
- SUB-SLAB SOIL VAPOR SAMPLE LOCATION (1995)
- ⊕ MONITORING WELL
- ◆ SOIL BORING
- FORMER UTILITY TRENCH FILLED WITH CONCRETE
- ==== UTILITY TRENCH
- SVE TRENCH WELL
- ⊕ ANGLD WELL AND SCREEN

INDOOR AIR SAMPLE ID	ROOM
RTN 3-0485	
BLDG 5-1	QA AREA
BLDG 5-2	SHIPPING AREA
BLDG 5-3	SANDING ROOM
BLDG 5-4	PRODUCTION AREA
BLDG 5-5	CATHODE SPRAY ROOM
BLDG 5-6	COMMON OFFICE AREA
BLDG 5-7	DEGREASER AREA
BLDG 8-1	HIGH POWER TESTING BUILDING 8 BASEMENT

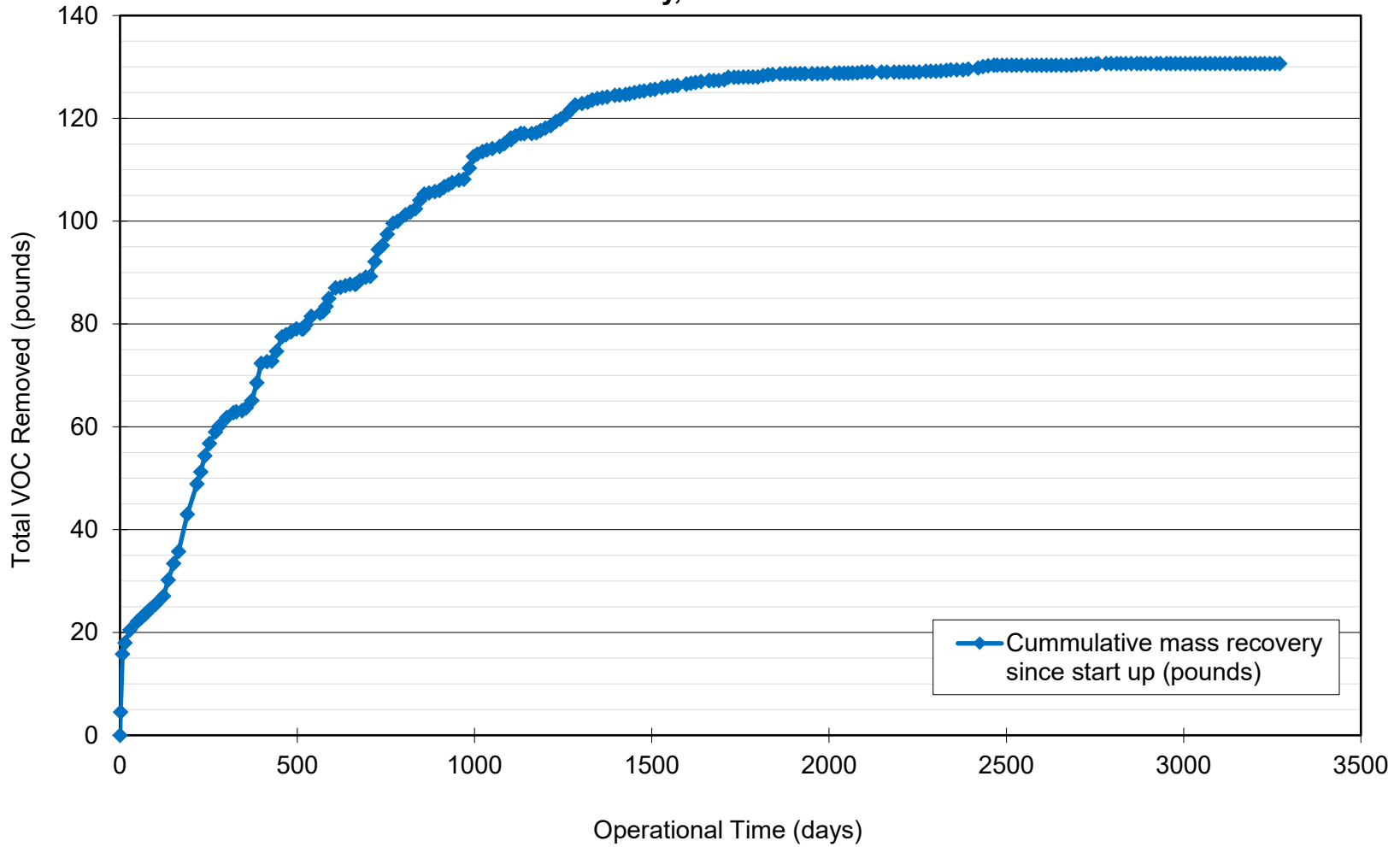


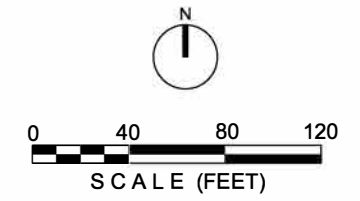
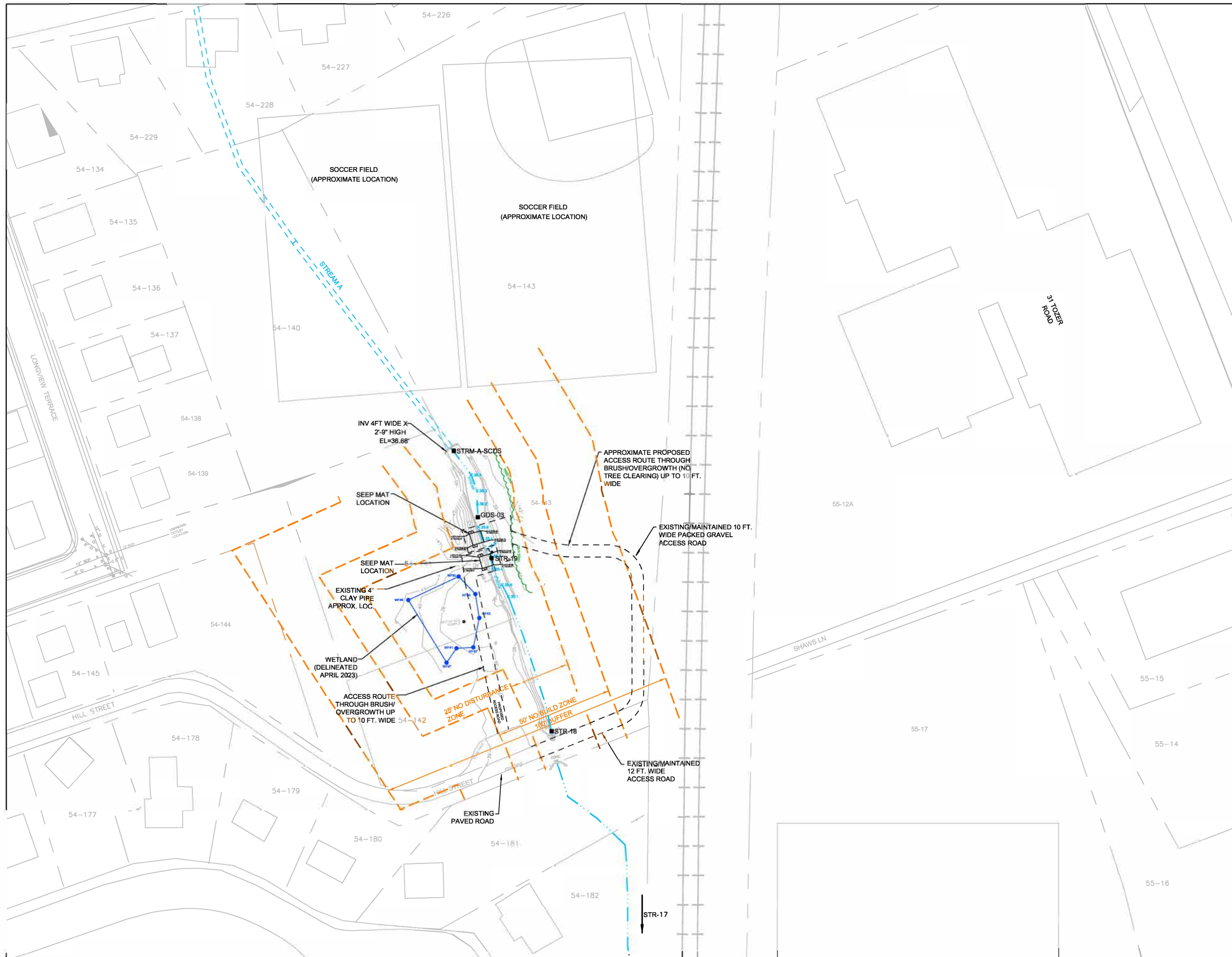
FIGURE 2-4
BUILDING 5 REMEDIAL TREATMENT AREA
SAMPLE LOCATIONS
 FORMER VARIAN FACILITY
 150 SOHIER ROAD
 BEVERLY, MASSACHUSETTS

REFERENCE:
 PLAN DERIVED FROM COMMUNICATIONS & POWER INDUSTRIES MAP, DATED 07/11/03, CLEAN HARBORS ENVIRONMENTAL SERVICES, INC. MAP TITLED "1962-BUILDING 5", CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC., AND APTIM ENVIRONMENTAL & INFRASTRUCTURE, INC. FIELD RECONNAISSANCE, JULY 2012, APRIL 2014 AND AUGUST 2018.



Figure 2-5
VOC Mass Removal Estimate
Building 5 Sub-Slab SVE System
Former Varian Facility Site
150 Sohier Road
Beverly, Massachusetts





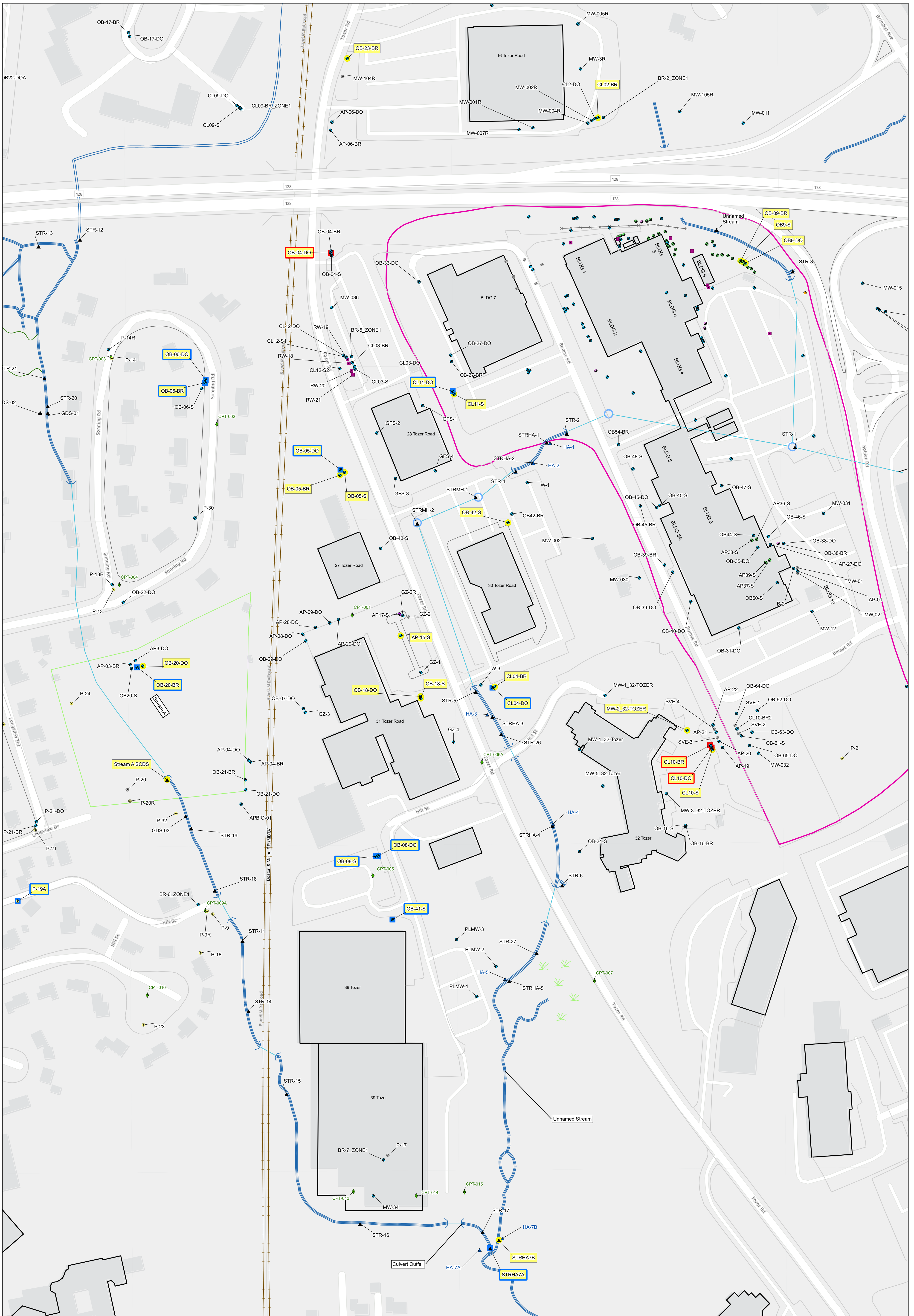
- LEGEND:**
- 22— EXISTING CONTOUR
 - ==== STREAM A
 - ~~~~ TREE LINE
 - STREAM SAMPLE LOCATION

- SURVEY NOTES:**
1. HORIZONTAL DATUM IS MASSACHUSETTS NORTH AMERICAN DATUM OF 1927 (NAD27).
 2. VERTICAL DATUM SHOWN IS BASED ON SITE WELL DATUM.
 3. PROPERTY LINES ARE SHOWN FOR GRAPHICAL USE ONLY.

- REFERENCES:**
1. EXISTING CONDITIONS PLAN, LONGVIEW TERRACE STREAM, BEVERLY, MASS. A-PLUS CONSTRUCTION SERVICES CORP. 17 ACCORD PARK DRIVE, NORWELL, MA, FILE: 4280 BEVERLY STREAM EXISTING SURVEY 2-17-23, REV 0, FEBRUARY 17, 2023, ADDITIONAL SURVEY ADDED FOR PROP. ACCESS ROAD, REV 1, APRIL 20, 2023.
 2. BASE MAP FROM APTIM ENVIRONMENTAL & INFRASTRUCTURE, INC., TITLED: LONGVIEW/HILL STREET TREATMENT AREA, DATED: 11 NOVEMBER 2023, DRAWING NUMBER: 631010764-B203.
 3. NATIONAL FLOOD HAZARD LAYER FIRMETTE. BASE MAP USGS NATIONAL MAP: ORTHOIMAGERY DATA REFRESHED 2020.
 4. PROPERTY LINE DERIVED FROM MAPGEO CITY OF BEVERLY.

Figure 2-6
**Stream A Seep Reactive
 Core Mat and Surface
 Water Sample Locations**
 Former Varian Facility Site
 Beverly, Massachusetts





- LEGEND**
- Abandoned or Destroyed Well
 - Angled Well
 - Bioremediation Injection Well
 - Monitoring Well (MW)
 - Piezometer (P)
 - Recovery Well (RW)
 - Temporary Permanganate Injection Point
 - Angled Bioremediation Injection Well
 - ◆ Cone Penetrometer Testpoint (CPT)
 - ▲ Hand Auger Sample Location (HA) Adjacent to a Stream (STRHA)
 - ▲ Surface Water Stream (STR) Sample Location
 - Benchmark Location (MSL)
 - Locations used in trend analysis, no trend
 - Locations with a significant increasing concentration trend for TCE or PCE
 - Locations with a significant decreasing concentration trend for TCE or PCE
 - Approximate Location of Stream in Culvert
 - Approximate Stream Location
 - Fence Line
 - Former Varian Facility
 - Approximate Building Location

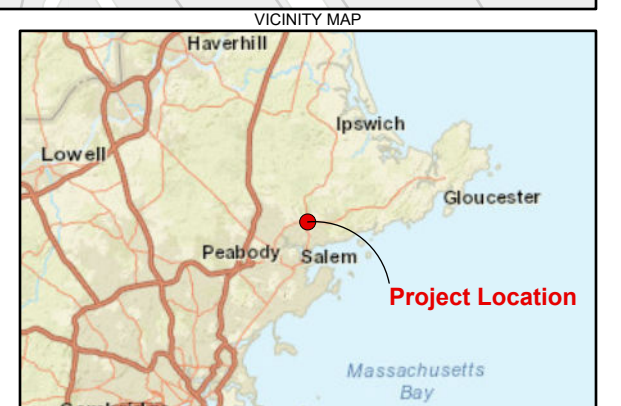


FIGURE 3-1
Sample Locations Used in Plume Mobility Evaluation
 Temporary Solution
 Beverly, Massachusetts

**Appendix A. Comprehensive Response
Action Transmittal Form & Phase I
Completion Statement (BWSC-108)**





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

Release Tracking Number

3 - 485

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

A. SITE LOCATION:

1. Site Name: VARIAN-MICROWAVE DIV

2. Street Address: 150 SOHIER RD

3. City/Town: BEVERLY 4. ZIP Code: 019150000

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

3 - 485

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: _____

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

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COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT

Release Tracking Number

3 - 485

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

C. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

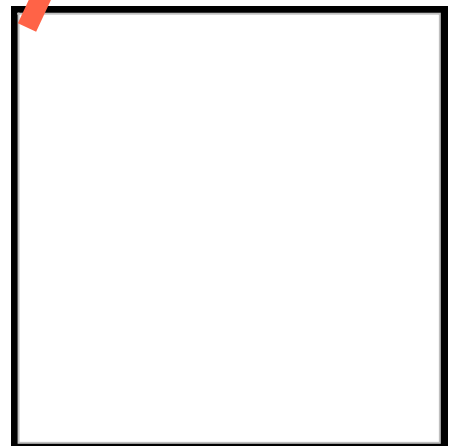
> if Section B indicates that a **Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement** and/or a **Termination of a Remedy Operation Status** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B indicates that a **Phase II Scope of Work** or a **Phase IV Remedy Implementation Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B indicates that an **As-Built Construction Report, a Remedy Operation Status, a Phase IV, Phase V or Temporary Solution Status Report, a Status Report to Maintain a Remedy Operation Status, a Transfer or Modification of Persons Maintaining a Remedy Operation Status** and/or a **Remedial Monitoring Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be inaccurate or materially incomplete.

- 1. LSP#: 9456
- 2. First Name: MATTHEWE
- 3. Last Name: HACKMAN
- 4. Telephone: 4017379211
- 5. Ext.:
- 6. Email: matthewehackman@verizon.net
- 7. Signature:
- 8. Date: (mm/dd/yyyy)
- 9. LSP Stamp:



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COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT

Release Tracking Number

3 - 485

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: VARIAN MEDICAL SYSTEMS INC
- 3. Contact First Name: MATTHEW 4. Last Name: GILLIS
- 5. Street: 801 PENNSYLVANIA AVE NW STE 73 6. Title:
- 7. City/Town: WASHINGTON 8. State: DC 9. ZIP Code: 200040000
- 10. Telephone: 11. Ext: 12. Email:

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

- [x] 1. RP or PRP [] a. Owner [] b. Operator [] c. Generator [] d. Transporter [x] e. Other RP or PRP Specify: NON-SPECIFIED PRP
- [] 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:

- [x] 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.
- [x] 9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

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

Release Tracking Number

3 - 485

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

G. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTIONS:

1. I, _____, 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: _____ 3. Title: _____
Signature

4. For: VARIAN MEDICAL SYSTEMS INC 5. Date: _____
(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:)

[Empty box for Date Stamp]

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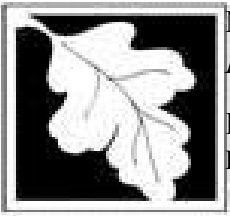
Attachment to BWSC 104 and 108
150 Sohier Road, Beverly, MA
RTN 3-0485

Approvals from the Massachusetts Department of Environmental Protection that this submittal is subject to include:

- Massachusetts Department of Environmental Protection Termination of Remedy Operation Status Notice of Noncompliance, dated February 18, 2022.
- Massachusetts Department of Environmental Protection approval of extension request, letter to Varian Medical Systems, Inc., dated July 6, 2022.
- Public Comment Draft Phase II Addendum Reporting Schedule, Aptim Environmental and Infrastructure, LLC letter to Massachusetts Department of Environmental Protection, dated September 12, 2022

**Appendix B. Permanent and Temporary
Solution Statement Transmittal Form
(BWSC-104)**





PERMANENT AND TEMPORARY SOLUTION STATEMENT
Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number
3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

A. SITE LOCATION:

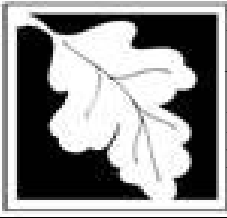
- 1. Site Name/Location Aid: VARIAN-MICROWAVE DIV
- 2. Street Address: 150 SOHIER RD
- 3. City/Town: BEVERLY 4. ZIP Code: 019150000
- 5. Coordinates: a. Latitude: N 42.57335 b. Longitude: W 70.88167
- 6. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category:
 a. Tier I b. Tier ID c. Tier II

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

- 1. List Submittal Date of the Permanent or Temporary Solution Statement, or RAO Statement (if previously submitted): _____ mm/dd/yyyy
- 2. Submit a **Permanent or Temporary Solution Statement**
 - a. Check here if this Permanent or Temporary Solution Statement covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Tier Classified Primary RTN do not need to be listed here.
 - b. Provide the additional Release Tracking Number(s) covered by this Permanent or Temporary Solution Statement. - -
- 3. Submit a **Revised Permanent or Temporary Solution Statement** (or revised RAO Statement)
 - a. Check here if this Revised Permanent or Temporary Solution Statement covers additional Release Tracking Numbers (RTNs), not listed on the Permanent or Temporary Solution Statement or previously submitted Revised Permanent or Temporary Solution Statements. RTNs that have been previously linked to a Tier Classified Primary RTN do not need to be listed here.
 - b. Provide the additional Release Tracking Number(s) covered by this Permanent or Temporary Solution Statement. - -
- 4. Submit a **Permanent or Temporary Solution Partial Statement**
Check above box, if any Response Actions remain to be taken to address conditions associated with this disposal site having the Primary RTN listed in the header section of this transmittal form. This Permanent or Temporary Solution Statement will record only a Permanent or Temporary Solution-Partial Statement for that RTN. A final Permanent or Temporary Solution Statement will need to be submitted that references all Permanent or Temporary Solution-Partial Statements and, if applicable, covers any remaining conditions not covered by the Permanent or Temporary Solution-Partial Statements.

Also, specify if you are an Eligible Person or Tenant pursuant to M.G.L. c. 21 s.2, and have no further obligation to conduct response actions on the remaining portion(s) of the disposal site:
 a. Eligible Person b. Eligible Tenant
- 5. Submit a **Revised Permanent or Temporary Solution Partial Statement** (or revised RAO-Partial Statement)
- 6. Submit an optional **Phase I Completion Statement** supporting the Permanent or Temporary Solution Statement
- 7. Submit a **Periodic Review Opinion evaluating the status of a Temporary Solution**, as specified in 310 CMR 40.1051 (Section F is optional)
- 8. Submit a **Retraction** of a previously submitted **Permanent or Temporary Solution Statement** (or RAO Statement) (Sections E & F are not required)

(All sections of this transmittal form must be filled out unless otherwise noted above)



PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

C. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply; for volumes, list cumulative amounts)

- 1. Assessment and/or Monitoring Only
- 2. Temporary Covers or Caps
- 3. Deployment of Absorbent or Containment Materials
- 4. Treatment of Water Supplies
- 5. Structure Venting System/HVAC Modification System
- 6. Engineered Barrier
- 7. Product or NAPL Recovery
- 8. Fencing and Sign Posting
- 9. Groundwater Treatment Systems
- 10. Soil Vapor Extraction
- 11. Remedial Additives
- 12. Air Sparging
- 13. Active Exposure Pathway Mitigation System
- 14. Passive Exposure Pathway Mitigation System
- 15. Monitored Natural Attenuation
- 16. In-Situ Chemical Oxidation
- 17. Removal of Contaminated Soils

- a. Re-use, Recycling or Treatment
 - i. On Site Estimated volume in cubic yards _____
 - ii. Off Site Estimated volume in cubic yards _____

ii. Facility Name: _____ Town: _____ State: _____

iii. Describe: _____

b. Landfill _____

i. Cover Estimated volume in cubic yards _____

Facility Name: _____ Town: _____ State: _____

ii. Disposal Estimate volume in cubic yards _____

Facility Name: _____ Town: _____ State: _____

18. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

b. Facility Name: _____ Town: _____ State: _____

c. Facility Name: _____ Town: _____ State: _____

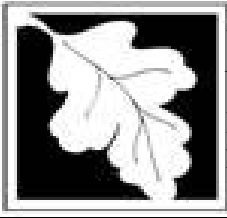
19. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

b. Facility Name: _____ Town: _____ State: _____

c. Facility Name: _____ Town: _____ State: _____

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PERMANENT AND TEMPORARY SOLUTION STATEMENT
Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

C. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply; for volumes, list cumulative amounts)

20. Other Response Actions:

Describe: _____

21. Use of Innovative Technologies:

Describe: _____

D. SITE USE:

1. Are the response actions that are the subject of this submittal associated with the *redevelopment, reuse* or the *major expansion of the current use* of property(ies) impacted by the presence of oil and/or hazardous materials?

- a. Yes b. No c. Don't know

2. Is the property a *vacant or under-utilized commercial or industrial* property ("a brownfield property")?

- a. Yes b. No c. Don't know

3. Will funds from a state or federal brownfield incentive program be used on one or more of the property(ies) within the disposal site?

- a. Yes b. No c. Don't know If Yes, identify program(s): _____

4. Has a Covenant Not to Sue been obtained or sought?

- a. Yes b. No c. Don't know

5. Check all applicable categories that apply to the person making this submittal:

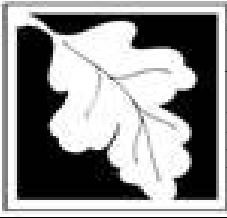
- a. Redevelopment Agency or Authority
 b. Community Development Corporation c. Economic Development and Industrial Corporation
 d. Private Developer e. Fiduciary f. Secured Lender g. Municipality
 h. Potential Buyer (non-owner) i. Other, describe: _____

This data will be used by MassDEP for information purposes only, and does not represent or create any legal commitment, obligation or liability on the part of the party or person providing this data to MassDEP.

E. PERMANENT OR TEMPORARY SOLUTION CATEGORY:

Specify the category of Solution that applies to the Disposal Site, or Site of the Threat of Release. Select either **1, 2, or 3.**

- 1. Permanent Solution with No Conditions** (check one)
 a. A threat of release has been eliminated.
 b. All contamination has been reduced to Natural Background levels.
 c. A condition of No Significant Risk exists or has been achieved with no Activity and Use Limitation or other limitations, assumptions, or conditions (310 CMR 40.1013).



PERMANENT AND TEMPORARY SOLUTION STATEMENT
Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

E. PERMANENT OR TEMPORARY SOLUTION CATEGORY (cont.):

- 2. Permanent Solution with Conditions** (check a and/or b):
 - a. **An AUL has been implemented** pursuant to 310 CMR 1012(2) (check one)
 - i. Required pursuant to 310 CMR 40.1012(2)

Is the AUL required because the Permanent Solution relies on an Active Exposure Pathway Mitigation Measure pursuant to CMR 310 40.1025?

1. Yes 2. No
 - ii. Optionally implemented pursuant to 310 CMR 40.1012(3)
 - b. **Limitations or conditions apply** pursuant to 310 CMR 40.1013 (check all that apply):
 - i. Gardening Best Management Practices (BMPs) for non-commercial gardening in a residential setting
 - ii. Concentrations of Oil and Hazardous Material consistent with Anthropogenic Background
 - iii. Residual contamination in a Public or Railroad Right-of-Way
 - iv. Groundwater contamination would exceed GW-2 Standards except for the absence of an occupied building or structure
- 3. Temporary Solution** (check a or b /and c)
 - a. Response actions to achieve a Permanent Solution **are not currently feasible**
 - b. Response actions to achieve a Permanent Solution **are feasible** and are being continued toward a Permanent Solution
 - c. Does the Temporary Solution rely on an Active Exposure Pathway Mitigation Measure pursuant to 310 CMR 40.1026?
 - i. Yes ii. No

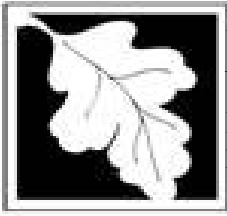
F. PERMANENT AND TEMPORARY SOLUTION INFORMATION:

1. Specify the Risk Characterization Method(s) used to achieve the Permanent or Temporary Solution, described above:
 - a. Method 1 b. Method 2 c. Method 3
 - d. Method Not Applicable-Contamination reduced to or consistent with background, or Threat of Release abated
2. Specify all Soil Category(ies) applicable. More than one Soil Category may apply at a Site. Be sure to check off all **APPLICABLE** categories:

<input type="checkbox"/> a. S-1/GW-1	<input type="checkbox"/> d. S-2/GW-1	<input type="checkbox"/> g. S-3/GW-1	<input type="checkbox"/> j. Not Applicable
<input type="checkbox"/> b. S-1/GW-2	<input checked="" type="checkbox"/> e. S-2/GW-2	<input checked="" type="checkbox"/> h. S-3/GW-2	
<input type="checkbox"/> c. S-1/GW-3	<input checked="" type="checkbox"/> f. S-2/GW-3	<input checked="" type="checkbox"/> i. S-3/GW-3	
3. Specify all Groundwater Category(ies) impacted. A site may impact more than one Groundwater Category. Be sure to check off all **IMPACTED** categories:

<input type="checkbox"/> a. GW-1	<input checked="" type="checkbox"/> b. GW-2	<input checked="" type="checkbox"/> c. GW-3	<input type="checkbox"/> d. No Groundwater Impacted
----------------------------------	---	---	---

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PERMANENT AND TEMPORARY SOLUTION STATEMENT
Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

F. PERMANENT AND TEMPORARY SOLUTION INFORMATION (cont.):

- 4. Check here if the risk assessment includes any changes to the groundwater category pursuant to 310 CMR 40.0932(5)(a) through (e). Check all conditions that apply:
 - a. An Interim Wellhead Protection Area does not apply based on a hydrogeologic evaluation (310 CMR 40.0932(5)(a))
 - b. Groundwater was determined not to be in a Potentially Productive Aquifer or is not feasible to be developed as a drinking water supply (310 CMR 40.0932(5)(b))
 - c. A Non-Potential Drinking Water Source Area determination was made (310 CMR 40.0932(5)(c))
 - d. Existing private wells were permanently closed (310 CMR 40.0932(5)(d))
 - e. Groundwater is located within a Zone A, but is not hydrogeologically connected to a drinking water supply (310 CMR 40.0932(5)(e))
- 5. Check here if the Permanent or Temporary Solution supports a finding of No Significant Risk for petroleum in a GW-1 area pursuant to 310 CMR 40.0924(2)(b)3.

6. Specify whether remediation was conducted:

- a. Check here if soil remediation was conducted.
- b. Check here if groundwater remediation was conducted.
- c. Check here if other remediation was conducted.

Specify:
SOIL VAPOR

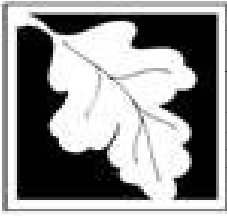
7. Specify whether the analytical data used to support the Permanent or Temporary Solution used the Compendium of Analytical Methods (CAM):

- a. CAM used to support all analytical data.
- b. CAM used to support some of the analytical data.
- c. CAM not used.

8. Check here to indicate that the Permanent or Temporary Solution Statement includes a Data Usability Assessment and Data Representativeness Evaluation pursuant to 310 CMR 40.1056.

9. Estimate the number of acres this Permanent or Temporary Solution Statement applies to: _____

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PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

G. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B indicates that either a **Permanent or Temporary Solution Statement, Phase I Completion Statement and/or Periodic Review Opinion** is being provided, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

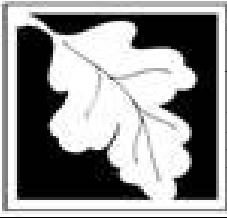
1. LSP#: 9456
2. First Name: MATTHEWE 3. Last Name: HACKMAN
4. Telephone: 4017379211 5. Ext.: _____ 6. Email: matthewehackman@verizon.net
7. Signature: _____
8. Date: _____ 9. LSP Stamp: _____
mm/dd/yyyy

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H. PERSON MAKING SUBMITTAL:

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: VARIAN MEDICAL SYSTEMS INC
3. Contact First Name: MATTHEW 4. Last Name: GILLIS
5. Street: 801 PENNSYLVANIA AVE NW STE 73 6. Title: _____
7. City/Town: WASHINGTON 8. State: DC 9. ZIP Code: 200040000
10. Telephone: _____ 11. Ext.: _____ 12. Email: _____



PERMANENT AND TEMPORARY SOLUTION STATEMENT
Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number
3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

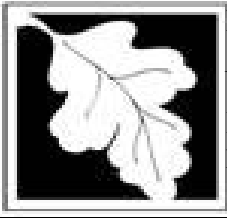
I. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON MAKING SUBMITTAL:

- Check here to change relationship
- 1. RP or PRP a. Owner b. Operator c. Generator d. Transporter
- e. Other RP or PRP Specify: NON-SPECIFIED PRP
- 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 Making Submittal Specify Relationship: _____

J. REQUIRED ATTACHMENT AND SUBMITTALS:

- 1. Check here if the Permanent or Temporary Solution 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 a Permanent or Temporary Solution Statement that relies on the public way/rail right-of-way exemption from the requirements of an AUL.
- 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of a Permanent or Temporary Solution Statement with instructions on how to obtain a full copy of the report.
- 4. Check here to certify that documentation is attached specifying the location of the Site, or the location and boundaries of the Disposal Site, subject to this Permanent or Temporary Solution Statement. If submitting a Permanent or Temporary Solution Statement for a PORTION of a Disposal Site, you must document the location and boundaries for both the portion subject to this submittal and, to the extent defined, the entire Disposal Site.
- 5. Check here to certify that, pursuant to 310 CMR 40.1406, notice was provided to the owner(s) of each property within the disposal site boundaries, or notice was not required because the disposal site boundaries are limited to property owned by the party conducting response actions. (check all that apply)
 - a. Notice was provided prior to, or concurrent with the submittal of a Phase II Completion Statement to the Department.
 - b. Notice was provided prior to, or concurrent with the submittal of this Permanent or Temporary Solution Statement to the Department.
 - c. Notice not required.
 - d. Total number of property owners notified, if applicable: 67
- 6. Check here if you are submitting one or more AULs. You must submit an AUL Transmittal Form (BWSC113) and a copy of each implemented AUL related to this Permanent Solution or Temporary Solution Statement. Specify the type of AUL(s) below: (required for Permanent Solution with Conditions Statements where an AUL is being implemented)
 - a. Notice of Activity and Use Limitation b. Number of Notices submitted: _____
 - c. Grant of Environmental Restriction d. Number of Grants submitted: _____
- 7. If a Permanent Solution Compliance Fee is required for any of the RTNs listed on this transmittal form, check here to certify that a Permanent Solution Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.
- 8. Check here if any non-updatable information provided on this form is incorrect, e.g. Site 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.

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PERMANENT AND TEMPORARY SOLUTION STATEMENT

Pursuant to 310 CMR 40.1000 (Subpart J)

Release Tracking Number

3 - 485

For sites with multiple RTNs, enter the Primary RTN above.

K. CERTIFICATION OF PERSON MAKING SUBMITTAL:

1. I, _____, 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.

2. By: _____ 3. Title: _____
Signature

4. For: VARIAN MEDICAL SYSTEMS INC 5. Date: _____
(Name of person or entity recorded in Section H) mm/dd/yyyy

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

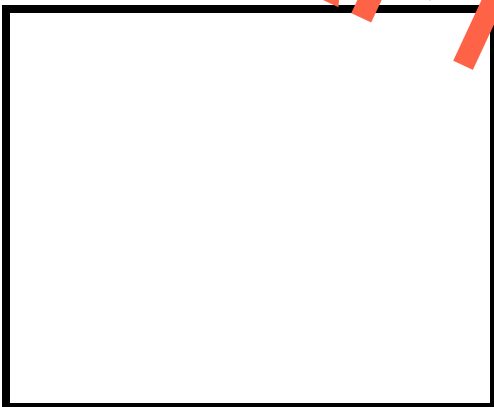
7. Street: _____

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):



DRAFT COPY

Attachment to BWSC 104 and 108
150 Sohier Road, Beverly, MA
RTN 3-0485

Approvals from the Massachusetts Department of Environmental Protection that this submittal is subject to include:

- Massachusetts Department of Environmental Protection Termination of Remedy Operation Status Notice of Noncompliance, dated February 18, 2022.
- Massachusetts Department of Environmental Protection approval of extension request, letter to Varian Medical Systems, Inc., dated July 6, 2022.
- Public Comment Draft Phase II Addendum Reporting Schedule, Aptim Environmental and Infrastructure, LLC letter to Massachusetts Department of Environmental Protection, dated September 12, 2022

Appendix C. Soil Boring Logs and Well Completion Diagrams





Challenging today.
Reinventing tomorrow.

PROJECT NUMBER

BORING NUMBER

SB-501

SHEET 1 OF 5

SOIL BORING LOG (UNCONSOLIDATED)

PROJECT :	Varian Medical System	DRILLING CONTRACTOR :	Cascade
LOCATION :	150 Sohier Rd, Beverly, MA	DRILLING METHOD AND EQUIPMENT USED :	mini sonic long stroke 100
DATE :	9/7/2023	ELEVATION :	
START TIME :	1350	WATER LEVEL :	
END TIME :	1345 9/8/23	LOGGER :	Steve Fox

DEPTH BELOW SURFACE (FT)		USCS Description	STRAT COLUMN	COMMENTS
INTERVAL (FT)	RECOVERY (FT)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID	Lithology, Grain Size, and <-F Vertical Gradation C->	SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
		Hole was air knifed to 5 ft below ground surface (bgs).		
	3.2			
	5.2			headspace 9-10' 0.0 ppm
4'	4'	(6 to 26 feet bgs) Poorly Graded Sand (SP), dark yellowish orange (10 YR 5/4), fine grained with minor cobbles and gravel, angular, loose, dry		
	8			
	9.1			
10				
	4.1			
	6.4	Fine Grained Sand (SP). Same as above with very angular to angular gravel and cobbles, slightly moist, loose		
5'	5'			headspace 14-15 0.0 ppm
	6			
	11.8			
15				
	17.5			



PROJECT NUMBER

BORING NUMBER

SB-501

SHEET 2 OF 5

SOIL BORING LOG (UNCONSOLIDATED)

DEPTH BELOW SURFACE (FT)		USCS Description		STRAT COLUMN	COMMENTS
INTERVAL (FT)	RECOVERY (FT)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID	Lithology, Grain Size, and <-F Vertical Gradation C->		SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
			Lig/Coal Clay Silt F Sand M Sand C Sand F Gravel M Gravel C Gravel Cobble Fill		
5'	4.5'	9 same as above with a very pale orange, (10 YR 6/2), 5 inch layer gravel and fine to medium sand, loose dry. (15.5-16). Below cobbles and gravel, angular			
		92.8			below 16 ft, color change to moderate yellowish brown (10 YR 5 YR 5/4)
		71.3			headspace 16-17 3.2 ppm
		40.1			
20		45.2			
		11			
		13.8			headspace 24-25 0.0 ppm
5'	4.8'	18			
		20.7			
25		20.9			
		0.2	(26-29) Silty Sand (SM) dark yellowish orange (10YR 6/6), fine grained sand, firm, slightly moist. at 29' decrease in silt increase in angular gravel		
		1.7			24-25 analysis for VOC, 0.0 head space initial screening 20.9 ppm
5'	5'	5.4			headspace 29-30' 1.5 ppm
		6.8			
30		9.3	(29-35) Poorly Graded Sand with gravel (SP). moderate yellowish brown (10 YR 5/4), very fine to fine grained sand. medium dense, slightly moist at 31', increase in gravel, fine grained sand, dark yellowish orange (10YR 6/60)		
		0			
		4.7			
32.5					



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PROJECT NUMBER

BORING NUMBER

SB-501

SHEET 3 OF 5

SOIL BORING LOG (UNCONSOLIDATED)

DEPTH BELOW SURFACE (FT)			USCS Description	STRAT COLUMN	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID	Lithology, Grain Size, and <-F Vertical Gradation C-> Lig/Coal Clay Silt F Sand M Sand C Sand F Gravel M Gravel C Gravel Cobble Fill	SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
	INTERVAL (FT)	Head Space			
		(ppm)			
35	5'	5'	10.9 at 33' increase in cobbles and gravel, firm, damp		angular cobbles and gravel
			25.8		headspace 34-35 0.0 ppm. sample collected SB501_20230907_34-35_N_SO
	5'	5'	28.7 (35-45) Silt (till) with minor sand, pale yellowish brown, (10 YR 6/2), firm to stiff, dry		headspace 39-40 18.5 ppm. sample collected SV501_20230907_39-40_N_SO, SB501_20230907_39-40_FD_SO
			3.9		
			22		
			27.6		
			37.9		
			45.1 minor laminations 2-cm in thickness, no sand or gravel present, firm to dense - dry to damp		sampled from 39-40, duplicate sample
	5'	5'	9.1		
			10.5		
10.9			headspace 44-45 61.2 ppm. sample collected SV501_20230907_44-45_N_SO		
29.5					
5'	5'	88 (45-53) Lean Clay (CL), light olive gray 5 Y 5/2, non plastic, hard dry. 46.5-47.5 gravel up to 1 inch. 47.5-53 Lean Clay			
		48.9			
		83.5			
		202.5			
50	5'	5'	246.7	headspace 49-50 142.9 ppm. sample collected SV501_20230907_40-50_N_SO	
			376.3		



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PROJECT NUMBER

BORING NUMBER

SB-501

SHEET 4 OF 5

SOIL BORING LOG (UNCONSOLIDATED)

DEPTH BELOW SURFACE (FT)			USCS Description	STRAT COLUMN	COMMENTS
INTERVAL (FT)	RECOVERY (FT)	Head Space (ppm)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID	Lithology, Grain Size, and	SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
				<-F Vertical Gradation C->	
				Lig/Coal Clay Silt F Sand M Sand C Sand F Gravel M Gravel C Gravel Cobble Fill	
		15.1			
5'	5'	8.6	lean clay (CL) with gravel and minor sand, light olive 5 Y 5/2, hard, dry		headspace 54-55 129.8 ppm. sample collected SV501_20230907_54-55_N_SO
		24.4			
		81.9			
55		103.2	(53-56) Silt with Gravel (ML), same color, firm with gravel		
		19.6	(56-61.6) Lean Clay with gravel and sand (CL), very stiff, dry		
	5'	12.2			58-59 silty (ML) light olive gray 5 Y 5/2 loose
	4.7'	9.8			headspace 55-56 78.2 ppm. sample collected SV501_20230907_55-56_N_SO
		12			
60		12			
		80.3	Same as above, gravel, minor sand, very stiff to hard, 61.6-62.5 pulverized cobble		
		66.6			headspace 62-63 32.9 ppm. sample collected SV501_20230907_62-63_N_SO
	5'	209.8			
	5'	182.4			
65		134.5	62.5-68 well graded sand with sand / gravel (SW) fine to coarse gravel, wet		
	3'	43			
	2'				
67.5					



Challenging today.
Reinventing tomorrow.

PROJECT NUMBER

BORING NUMBER

SB-501

SHEET 5 OF 5

SOIL BORING LOG (UNCONSOLIDATED)

DEPTH BELOW SURFACE (FT)		USCS Description		STRAT COLUMN	COMMENTS
INTERVAL (FT)	RECOVERY (FT)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID		Lithology, Grain Size, and <-F Vertical Gradation C->	SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
70		60.7	Fractured bedrock to 68 feet bgs that was chewed up during drilling. (68-70) Silty Sand (SM), light olive gray, 5Y 5/2		68-70' silty sand (SM) light olive gray (5 Y 5/2)
	5'	5'	70-75' bedrock core / pieces from 70 to 75 mixed in with slough		
75			TD= 75'		driller cased off boring and was able to recover core
80					
85					



Challenging today.
Reinventing tomorrow.

PROJECT NUMBER

BORING NUMBER

SB-504

SHEET 1 OF 4

SOIL BORING LOG (UNCONSOLIDATED)

PROJECT :	Varian Medical System	DRILLING CONTRACTOR :	Casade
LOCATION :	150 Sohier Rd, Beverly, MA	DRILLING METHOD AND EQUIPMENT USED :	mini sonic long stroke 100
DATE :	9/6/2023	ELEVATION :	
START TIME :	1350	WATER LEVEL :	
END TIME :	1345 9/7/23	LOGGER :	Steve Fox

DEPTH BELOW SURFACE (FT)		USCS Description	STRAT COLUMN		COMMENTS
INTERVAL (FT)	RECOVERY (FT)		Lithology, Grain Size, and <-F Vertical Gradation C->		
	Head Space (ppm)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID	Lig/Coal	Silt	SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
			Clay	F Sand	
			M Sand	C Sand	
			F Gravel	M Gravel	
			C Gravel	Cobble	
			Fill		
5		Hole was air knifed to 5 feet below ground surface before drilling			
	5'	(5-7) Sandy Silt (ML), moderate yellowish brown, 10 YR 5/4, fine grained sand, loose			
	5'	(7-8.5) gravel with silt pale yellow brown, loose. gravel up to 2" loose, slightly moist			
10		(8.5-13.5) Poorly Graded Sand with gravel (SP), moderate yellowish brown, (10 YR 5/4), fine grained sand, gravel up to 2", loose, slightly moist			
	5'				
	4.5'				
15		13.5 dark yellowish brown 10 YR 4/3 hard, very dense			



Challenging today.
Reinventing tomorrow.

PROJECT NUMBER

BORING NUMBER

SB-504

SHEET 3 OF 4

SOIL BORING LOG (UNCONSOLIDATED)

DEPTH BELOW SURFACE (FT)			USCS Description	STRAT COLUMN	COMMENTS
DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID	Lithology, Grain Size, and <-F Vertical Gradation C-> Lig/Coal Clay Silt F Sand M Sand C Sand F Gravel M Gravel C Gravel Cobble Fill	SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
	INTERVAL (FT)	Head			
		Space (ppm)			
35	5'	5'	21.5		
			29		
			99.9		
			135.9		
	5'	5'	334.7		37-38' sample collected SB504_20230906_37-38_N_SO headspace 566.3 ppm
			686.6		
40			470		
			27.3		
			34.1		
	5'	4.5'	27		at 43.5' Lean Clay (CL), light olive gray (5 Y 5/2), stiff to firm, slightly plastic, damp to moist (till)
			15.5		
45			8.6		
			40		46-47' same color, non plastic, subrounded cobble present, moist to wet
			170.4		
	5'	5'	165		headspace 46-47' 428 ppm sample collected SB504_20230906_46-47_N_SO
			74.5		47-50' same as 43.5 to 46' interval
50			159.3		



Challenging today.
Reinventing tomorrow.

PROJECT NUMBER

BORING NUMBER

SB-504

SHEET 4 OF 4

SOIL BORING LOG (UNCONSOLIDATED)

DEPTH BELOW SURFACE (FT)		USCS Description		STRAT COLUMN		COMMENTS
INTERVAL (FT)	RECOVERY (FT)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, PLASTICITY SAMPLE ID		Lithology, Grain Size, and		SEDIMENTARY STRUCTURES, FOSSILS/BIO MARKERS, DRILL RATE, RIG CHATTER, FLUID GAIN /LOSS, DRILLER COMMENTS
				<-F Vertical Gradation C->		
	Head Space (ppm)			Lig/Coal	Clay Silt	
				F Sand	M Sand	C Sand
				F Gravel	M Gravel	C Gravel
				Cobble	Fill	
60.2						
234.9			till from 50-51' . 51-54.5 silt with gravel / sand (ML) moderate brown (5 YR 4/4), subrounded gravel up to 1.5 inches diameter, dry to dense			large cobble greater than 4" in bottom of core
193.1						
111.6						headspace 51-52 12.6 ppm. sampled collected SB504_20230907_51-52_N_SO
70.2						
55	5'	5'				
			55 to 58' bedrock comprised of quartz. sodium feldspar, hornblende. Portion of core pulverized into dust			
	3'	2'				
			TD= 58'			
60						
65						
67.5						

WELL COMPLETION DIAGRAM

PROJECT : Varian Medical Services

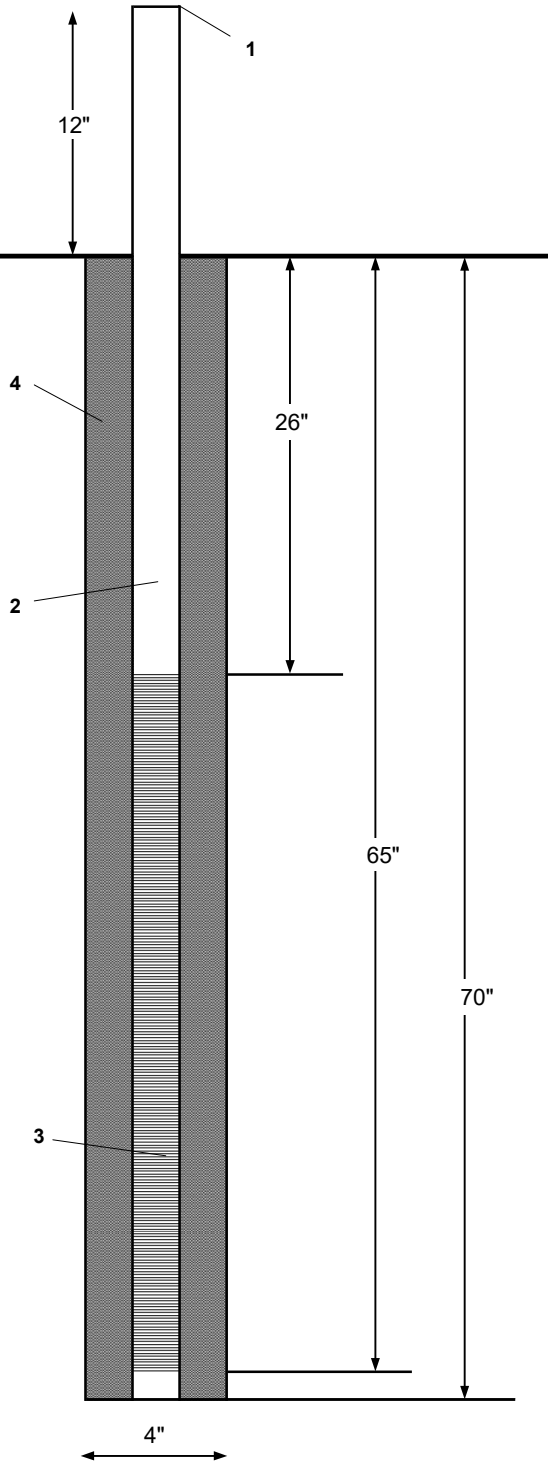
DRILLING CONTRACTOR : US Ecology

DRILLING METHOD AND EQUIPMENT USED : Pre-packed piezometer installation

START : 10/24/2023

END : 10/24/2023

LOGGER : Deirdre Kearney



- 1- Wellhead protection cover type Casing cap
- 2- Dia./type of well casing 2" Dia. Steel casing
- 3- Type/slot size of screen 0.010" mil-slot screen
- 4- Type of seal Native material

Comments: _____

Appendix D. Laboratory Analytical Reports



The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS108.A.CS.EV.4.SA PO#148048288

SGS Job Number: JD72282

Sampling Date: 09/06/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorette@jacobs.com; Bernice.Kidd@jacobs.com
ATTN: Raymond J. Cadorette

Total number of pages in report: 65



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

A handwritten signature in blue ink, appearing to read "D. Chastain".

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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2

3

4

5

6



Sample Summary

Jacobs Engineering

Job No: JD72282

Varian, Beverly, MA

Project No: VARMS108.A.CS.EV.4.SA PO#148048288

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
---------------	----------------	---------	----------	-------------	------	------------------

This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD72282-1	09/06/23	14:00	DK	09/06/23	SO	Soil	SB504_20230906_17-18_N_SO
JD72282-2	09/06/23	15:40	DK	09/06/23	SO	Trip Blank Methanol	TB-20230906_SO-01M
JD72282-3	09/06/23	15:40	DK	09/06/23	SO	Trip Blank Soil	TB-20230906_SO-01L
JD72282-4	09/06/23	15:40	DK	09/06/23	SO	Soil	SB504_20230906_37-38_N_SO

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD72282

Site: Varian, Beverly, MA

Report Date 9/13/2023 4:45:10 PM

On 09/06/2023, 2 sample(s), 2 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 1 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD72282 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: SO

Batch ID: V1C8501

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Acetone are outside control limits.
- JD72282-4 for tert-Butyl Ethyl Ether: Associated CCV outside of control limits high, sample was ND.
- V1C8501-BS for Acetone: Outside in house control limits.
- JD72282-1 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- JD72282-1 for Chloromethane: Associated CCV outside of control limits high, sample was ND.
- JD72282-1 for Di-Isopropyl ether: Associated CCV outside of control limits high, sample was ND.
- JD72282-1 for tert-Butyl Ethyl Ether: Associated CCV outside of control limits high, sample was ND.
- JD72282-1 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD72282-1 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72282-4 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- JD72282-4 for Di-Isopropyl ether: Associated CCV outside of control limits high, sample was ND.
- JD72282-4 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD72282-4 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72282-4 for Chloromethane: Associated CCV outside of control limits high, sample was ND.

Matrix: SO

Batch ID: V1C8503

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Acetone, n-Butylbenzene, 1,2-Dichlorobenzene, Bromodichloromethane, cis-1,3-Dichloropropene, 1,2-Dibromo-3-chloropropane are outside control limits.
- V1C8503-BSD for cis-1,3-Dichloropropene: Outside in house control limits.
- JD72282-3 for 1,2-Dibromo-3-chloropropane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD72282-3 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72282-3 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.

Wednesday, September 13, 2023

Page 1 of 2

MS Volatiles By Method SW846 8260D

Matrix: SO

Batch ID: V1C8503

- V1C8503-BSD for o-Xylene: Outside in house control limits.
- V1C8503-BSD for 1,2-Dichlorobenzene: Outside in house control limits.
- V1C8503-BS for n-Butylbenzene: Outside control limits.
- V1C8503-BS for cis-1,3-Dichloropropene: Outside of in house control limits, but within reasonable method recovery limits.
- V1C8503-BS for Acetone: High percent recovery and no associated positive reported in the QC batch.
- V1C8503-BS for Bromodichloromethane: Outside of in house control limits, but within reasonable method recovery limits.
- V1C8503-BS for 1,2-Dichlorobenzene: Outside of in house control limits, but within reasonable method recovery limits.
- JD72282-3 for 1,2-Dichloroethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- V1C8503-BSD for Styrene: Outside in house control limits.
- V1C8503-BS for 1,2-Dibromo-3-chloropropane: Outside of in house control limits, but within the marginal exceedance limits.

Matrix: SO

Batch ID: V3D8040

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD72282-4: Dilution required due to high concentration of target compound.
- JD72282-2 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72282-2 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- V3D8040-BSD for Acetone: Outside in house control limits.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO

Batch ID: GN45783

- The data for SM2540 G 18TH ED MOD meets quality control requirements.

Matrix: SO

Batch ID: GN45807

- The data for SM2540 G 18TH ED MOD meets quality control requirements.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Summary of Hits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

Lab Sample ID	Client Sample ID	Result/ Analyte	RL	MDL	Units	Method
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JD72282-1 SB504_20230906_17-18_N_SO

Acetone ^a	10.6	8.7	ug/kg	SW846 8260D
Tetrachloroethene	2.2	1.7	ug/kg	SW846 8260D

JD72282-2 TB-20230906_SO-01M

No hits reported in this sample.

JD72282-3 TB-20230906_SO-01L

Acetone ^b	17.6	10	ug/kg	SW846 8260D
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JD72282-4 SB504_20230906_37-38_N_SO

Acetone ^a	14.0	9.1	ug/kg	SW846 8260D
Chloroform	5.0	1.8	ug/kg	SW846 8260D
cis-1,2-Dichloroethene	1.1	0.91	ug/kg	SW846 8260D
Tetrachloroethene ^c	1950	100	ug/kg	SW846 8260D
1,1,1-Trichloroethane	2.4	1.8	ug/kg	SW846 8260D
Trichloroethene ^c	3700	50	ug/kg	SW846 8260D

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Dilution required due to high concentration of target compound.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SB504_20230906_17-18_N_SO	Date Sampled:	09/06/23
Lab Sample ID:	JD72282-1	Date Received:	09/06/23
Matrix:	SO - Soil	Percent Solids:	94.6
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196207.D	1	09/08/23 16:59	JN	n/a	n/a	V1C8501
Run #2							

Run #1	Initial Weight
Run #1	6.1 g
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	10.6	8.7	ug/kg	
71-43-2	Benzene	ND	0.43	ug/kg	
108-86-1	Bromobenzene	ND	4.3	ug/kg	
74-97-5	Bromochloromethane	ND	4.3	ug/kg	
75-27-4	Bromodichloromethane	ND	1.7	ug/kg	
75-25-2	Bromoform	ND	4.3	ug/kg	
74-83-9	Bromomethane	ND	4.3	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	8.7	ug/kg	
104-51-8	n-Butylbenzene	ND	1.7	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.7	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.7	ug/kg	
75-15-0	Carbon disulfide	ND	1.7	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.7	ug/kg	
108-90-7	Chlorobenzene	ND	1.7	ug/kg	
75-00-3	Chloroethane	ND	4.3	ug/kg	
67-66-3	Chloroform	ND	1.7	ug/kg	
74-87-3	Chloromethane ^c	ND	4.3	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.7	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.7	ug/kg	
108-20-3	Di-Isopropyl ether ^c	ND	1.7	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	ug/kg	
124-48-1	Dibromochloromethane	ND	1.7	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.87	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.87	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.87	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.87	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.3	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.87	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.87	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.87	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.87	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.87	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB504_20230906_17-18_N_SO
Lab Sample ID: JD72282-1
Matrix: SO - Soil
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 09/06/23
Date Received: 09/06/23
Percent Solids: 94.6

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.7	ug/kg	
142-28-9	1,3-Dichloropropane	ND	1.7	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.7	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.7	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.7	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.7	ug/kg	
123-91-1	1,4-Dioxane	ND	110	ug/kg	
60-29-7	Ethyl Ether	ND	1.7	ug/kg	
100-41-4	Ethylbenzene	ND	0.87	ug/kg	
87-68-3	Hexachlorobutadiene	ND	4.3	ug/kg	
591-78-6	2-Hexanone ^c	ND	4.3	ug/kg	
98-82-8	Isopropylbenzene	ND	1.7	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.7	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.87	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.3	ug/kg	
74-95-3	Methylene bromide	ND	4.3	ug/kg	
75-09-2	Methylene chloride	ND	4.3	ug/kg	
91-20-3	Naphthalene	ND	4.3	ug/kg	
103-65-1	n-Propylbenzene	ND	1.7	ug/kg	
100-42-5	Styrene	ND	1.7	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	1.7	ug/kg	
637-92-3	tert-Butyl Ethyl Ether ^c	ND	1.7	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.7	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.7	ug/kg	
127-18-4	Tetrachloroethene	2.2	1.7	ug/kg	
109-99-9	Tetrahydrofuran	ND	8.7	ug/kg	
108-88-3	Toluene	ND	0.87	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.3	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.3	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.7	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.7	ug/kg	
79-01-6	Trichloroethene	ND	0.87	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.3	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.3	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	1.7	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	1.7	ug/kg	
75-01-4	Vinyl chloride	ND	1.7	ug/kg	
	m,p-Xylene	ND	0.87	ug/kg	
95-47-6	o-Xylene	ND	0.87	ug/kg	
1330-20-7	Xylene (total)	ND	0.87	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: SB504_20230906_17-18_N_SO	Date Sampled: 09/06/23
Lab Sample ID: JD72282-1	Date Received: 09/06/23
Matrix: SO - Soil	Percent Solids: 94.6
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-124%
17060-07-0	1,2-Dichloroethane-D4	103%		75-133%
2037-26-5	Toluene-D8	107%		79-125%
460-00-4	4-Bromofluorobenzene	101%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	TB-20230906_SO-01M	Date Sampled:	09/06/23
Lab Sample ID:	JD72282-2	Date Received:	09/06/23
Matrix:	SO - Trip Blank Methanol	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D192349.D	1	09/11/23 14:27	JN	n/a	n/a	V3D8040
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	1000	ug/kg	
71-43-2	Benzene	ND	50	ug/kg	
108-86-1	Bromobenzene	ND	500	ug/kg	
74-97-5	Bromochloromethane	ND	500	ug/kg	
75-27-4	Bromodichloromethane	ND	200	ug/kg	
75-25-2	Bromoform	ND	500	ug/kg	
74-83-9	Bromomethane	ND	500	ug/kg	
78-93-3	2-Butanone (MEK)	ND	1000	ug/kg	
104-51-8	n-Butylbenzene	ND	200	ug/kg	
135-98-8	sec-Butylbenzene	ND	200	ug/kg	
98-06-6	tert-Butylbenzene	ND	200	ug/kg	
75-15-0	Carbon disulfide	ND	200	ug/kg	
56-23-5	Carbon tetrachloride	ND	200	ug/kg	
108-90-7	Chlorobenzene	ND	200	ug/kg	
75-00-3	Chloroethane	ND	500	ug/kg	
67-66-3	Chloroform	ND	200	ug/kg	
74-87-3	Chloromethane	ND	500	ug/kg	
95-49-8	o-Chlorotoluene	ND	200	ug/kg	
106-43-4	p-Chlorotoluene	ND	200	ug/kg	
108-20-3	Di-Isopropyl ether	ND	200	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	200	ug/kg	
124-48-1	Dibromochloromethane	ND	200	ug/kg	
106-93-4	1,2-Dibromoethane	ND	100	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	100	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	100	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	100	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	500	ug/kg	
75-34-3	1,1-Dichloroethane	ND	100	ug/kg	
107-06-2	1,2-Dichloroethane	ND	100	ug/kg	
75-35-4	1,1-Dichloroethene	ND	100	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	100	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	100	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230906_SO-01M

Lab Sample ID: JD72282-2

Matrix: SO - Trip Blank Methanol

Method: SW846 8260D

Project: Varian, Beverly, MA

Date Sampled: 09/06/23

Date Received: 09/06/23

Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	200	ug/kg	
142-28-9	1,3-Dichloropropane	ND	200	ug/kg	
594-20-7	2,2-Dichloropropane	ND	200	ug/kg	
563-58-6	1,1-Dichloropropene	ND	200	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	200	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	200	ug/kg	
123-91-1	1,4-Dioxane ^b	ND	13000	ug/kg	
60-29-7	Ethyl Ether	ND	200	ug/kg	
100-41-4	Ethylbenzene	ND	100	ug/kg	
87-68-3	Hexachlorobutadiene	ND	500	ug/kg	
591-78-6	2-Hexanone	ND	500	ug/kg	
98-82-8	Isopropylbenzene	ND	200	ug/kg	
99-87-6	p-Isopropyltoluene	ND	200	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	100	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	500	ug/kg	
74-95-3	Methylene bromide	ND	500	ug/kg	
75-09-2	Methylene chloride	ND	500	ug/kg	
91-20-3	Naphthalene	ND	500	ug/kg	
103-65-1	n-Propylbenzene	ND	200	ug/kg	
100-42-5	Styrene	ND	200	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	200	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	200	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	200	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	200	ug/kg	
127-18-4	Tetrachloroethene	ND	200	ug/kg	
109-99-9	Tetrahydrofuran	ND	1000	ug/kg	
108-88-3	Toluene	ND	100	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	500	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	500	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	200	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	200	ug/kg	
79-01-6	Trichloroethene	ND	100	ug/kg	
75-69-4	Trichlorofluoromethane	ND	500	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	500	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	200	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	200	ug/kg	
75-01-4	Vinyl chloride	ND	200	ug/kg	
	m,p-Xylene	ND	100	ug/kg	
95-47-6	o-Xylene	ND	100	ug/kg	
1330-20-7	Xylene (total)	ND	100	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230906_SO-01M Lab Sample ID: JD72282-2 Matrix: SO - Trip Blank Methanol Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 09/06/23 Date Received: 09/06/23 Percent Solids: n/a
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-124%
17060-07-0	1,2-Dichloroethane-D4	93%		75-133%
2037-26-5	Toluene-D8	100%		79-125%
460-00-4	4-Bromofluorobenzene	93%		58-148%

- (a) This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: TB-20230906_SO-01L	Date Sampled: 09/06/23
Lab Sample ID: JD72282-3	Date Received: 09/06/23
Matrix: SO - Trip Blank Soil	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196268.D	1	09/12/23 16:19	JN	n/a	n/a	V1C8503
Run #2							

Run #1	Initial Weight
Run #1	5.0 g
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	17.6	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	ND	2.0	ug/kg	
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropan ^c	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane ^c	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230906_SO-01L
Lab Sample ID: JD72282-3
Matrix: SO - Trip Blank Soil
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 09/06/23
Date Received: 09/06/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	ND	5.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230906_SO-01L Lab Sample ID: JD72282-3 Matrix: SO - Trip Blank Soil Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 09/06/23 Date Received: 09/06/23 Percent Solids: n/a
--	---

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		80-124%
17060-07-0	1,2-Dichloroethane-D4	88%		75-133%
2037-26-5	Toluene-D8	103%		79-125%
460-00-4	4-Bromofluorobenzene	97%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID:	SB504_20230906_37-38_N_SO	Date Sampled:	09/06/23
Lab Sample ID:	JD72282-4	Date Received:	09/06/23
Matrix:	SO - Soil	Percent Solids:	90.2
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196208.D	1	09/08/23 17:25	JN	n/a	n/a	V1C8501
Run #2 ^a	3D192350.D	1	09/11/23 14:49	JN	n/a	n/a	V3D8040

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.1 g		
Run #2	12.5 g	10.0 ml	100 ul

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	14.0	9.1	ug/kg	
71-43-2	Benzene	ND	0.45	ug/kg	
108-86-1	Bromobenzene	ND	4.5	ug/kg	
74-97-5	Bromochloromethane	ND	4.5	ug/kg	
75-27-4	Bromodichloromethane	ND	1.8	ug/kg	
75-25-2	Bromoform	ND	4.5	ug/kg	
74-83-9	Bromomethane	ND	4.5	ug/kg	
78-93-3	2-Butanone (MEK) ^c	ND	9.1	ug/kg	
104-51-8	n-Butylbenzene	ND	1.8	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.8	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.8	ug/kg	
75-15-0	Carbon disulfide	ND	1.8	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.8	ug/kg	
108-90-7	Chlorobenzene	ND	1.8	ug/kg	
75-00-3	Chloroethane	ND	4.5	ug/kg	
67-66-3	Chloroform	5.0	1.8	ug/kg	
74-87-3	Chloromethane ^d	ND	4.5	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.8	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.8	ug/kg	
108-20-3	Di-Isopropyl ether ^d	ND	1.8	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.8	ug/kg	
124-48-1	Dibromochloromethane	ND	1.8	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.91	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.91	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.91	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.91	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.5	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.91	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.91	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.91	ug/kg	
156-59-2	cis-1,2-Dichloroethene	1.1	0.91	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.91	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB504_20230906_37-38_N_SO**Lab Sample ID:** JD72282-4**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/06/23**Date Received:** 09/06/23**Percent Solids:** 90.2

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.8	ug/kg	
142-28-9	1,3-Dichloropropane	ND	1.8	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.8	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.8	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.8	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	ug/kg	
123-91-1	1,4-Dioxane	ND	110	ug/kg	
60-29-7	Ethyl Ether	ND	1.8	ug/kg	
100-41-4	Ethylbenzene	ND	0.91	ug/kg	
87-68-3	Hexachlorobutadiene	ND	4.5	ug/kg	
591-78-6	2-Hexanone ^d	ND	4.5	ug/kg	
98-82-8	Isopropylbenzene	ND	1.8	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.8	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.91	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.5	ug/kg	
74-95-3	Methylene bromide	ND	4.5	ug/kg	
75-09-2	Methylene chloride	ND	4.5	ug/kg	
91-20-3	Naphthalene	ND	4.5	ug/kg	
103-65-1	n-Propylbenzene	ND	1.8	ug/kg	
100-42-5	Styrene	ND	1.8	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	1.8	ug/kg	
637-92-3	tert-Butyl Ethyl Ether ^d	ND	1.8	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.8	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	ug/kg	
127-18-4	Tetrachloroethene	1950 ^e	100	ug/kg	
109-99-9	Tetrahydrofuran	ND	9.1	ug/kg	
108-88-3	Toluene	ND	0.91	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.5	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	2.4	1.8	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.8	ug/kg	
79-01-6	Trichloroethene	3700 ^e	50	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.5	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.5	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	1.8	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	ug/kg	
75-01-4	Vinyl chloride	ND	1.8	ug/kg	
	m,p-Xylene	ND	0.91	ug/kg	
95-47-6	o-Xylene	ND	0.91	ug/kg	
1330-20-7	Xylene (total)	ND	0.91	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB504_20230906_37-38_N_SO	Date Sampled: 09/06/23
Lab Sample ID: JD72282-4	Date Received: 09/06/23
Matrix: SO - Soil	Percent Solids: 90.2
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%	99%	80-124%
17060-07-0	1,2-Dichloroethane-D4	102%	94%	75-133%
2037-26-5	Toluene-D8	105%	98%	79-125%
460-00-4	4-Bromofluorobenzene	99%	93%	58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (d) Associated CCV outside of control limits high, sample was ND.
- (e) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits



SO
SL
SBTB

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHSQA-QAC-0023-04-FORM-Standard COC

FED-EX Tracking #	2023 2439	Billing Order Control #	DP 3023-128
SGS Quote #		SGS Job #	JD72282

Client / Reporting Information				Project Information								Requested Analysis											Matrix Codes	
Company Name: JACOBS ENG. Street Address: 120 ST. JAMES AVE City: Boston MA Zip: [Blank]				Project Name: VARIAN MEDICAL SYSTEMS Street: 150 SOMERSET City: Beverly MA State: MA Project # VAEMLS05.ACSEV01TP Project Manager: RAYMOND CAPORETTI								Matrix Codes: DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank											LAB USE ONLY PH 4.0 1415 4907	
Project Contact: ERIN K. KIOO@JACOBS.COM Phone # 530-209-3480				Billing Information (if different from Report to): Company Name: VARIAN MEDICAL SYSTEMS Street Address: 150 SOMERSET City: Beverly MA State: MA Zip: [Blank]								Number of preserved Bottles HCl HNO3 H2SO4 HI/NaOH HClO4 H2O2 HNO2 HNO3 H2SO4 HCl HClO4 H2O2											pH Check (Lab Use Only)	
SGS Sample #	Field ID / Point of Collection	MECH/IDI Val #	Date	Time	Sampled by	Grab (G) Comp (C)	Source Characterized (Y/N)	Matrix	# of bottles	HCl	HNO3	H2SO4	HI/NaOH	HClO4	H2O2	HNO2	HNO3	H2SO4	HCl	HClO4	H2O2	PH	LAB USE ONLY	
1	50504 20230906-17-18-N-50		9/6/23	1400	OK	G		S	4														2.6 ppm	
2	TB-20230906-50-01M		9/6/23	1505	OK	G			1														1415	
3	TB-20230906-50-01L		9/6/23	1505	OK	G			2														4907	
4	50504 20230906-37-38-N-50		9/6/23	1540	OK	G		S	4														500.3 ppm	
Turn Around Time (Business Days)				Approved By (SGS PM) / Date: [Blank]								Deliverable											Comments / Special Instructions	
<input type="checkbox"/> 10 Business Days <input type="checkbox"/> 5 Business Days <input type="checkbox"/> 3 Business Days* <input type="checkbox"/> 2 Business Days* <input type="checkbox"/> 1 Business Day* <input type="checkbox"/> Other				<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> NJ Reduced (Level 3) <input type="checkbox"/> Full Tier 1 (Level 4) <input type="checkbox"/> Commercial "C" <input type="checkbox"/> NJ DKQP								<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> MA MCP Criteria <input type="checkbox"/> CT RCP Criteria <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format											Comments / Special Instructions: SGS courier 9/6 SGS Service Northborough, Vt. http://www.sgs.com/en/terms-and-conditions	
Sample Custody must be documented below each time samples change possession, including courier delivery.																								
Relinquished By: [Signature] Date / Time: 9/6/23 14:10			Received By: [Signature] Date / Time: 9/6/23 23:50			Relinquished By: [Signature] Date / Time: 9/6/23 20:05			Received By: [Signature] Date / Time: [Blank]															
Relinquished By: [Signature] Date / Time: 9/6/23 23:50			Received By: [Signature] Date / Time: [Blank]			Relinquished By: [Signature] Date / Time: [Blank]			Received By: [Signature] Date / Time: [Blank]															
Relinquished By: [Signature] Date / Time: [Blank]			Received By: [Signature] Date / Time: [Blank]			Custody Seal # [Blank]			<input type="checkbox"/> Intact <input type="checkbox"/> Not Intact Absent			Therm ID: [Blank] <input type="checkbox"/> On Ice			Cooler Temp. °C 11.3									

5.1
5



SGS Sample Receipt Summary

Job Number: JD72282

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 9/6/2023 11:50:00 PM

Delivery Method: _____

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.3);

Cooler Temps (Corrected) °C: Cooler 1: (1.0);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. SmpI Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>IR Gun 40</u> | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservatio

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

5.1
5

Job Change Order: JD72282

Requested Date: 9/11/2023 Received Date: 9/6/2023
Account Name: Jacobs Engineering Due Date: 9/11/2023
Project Description: Varian, Beverly, MA Deliverable: MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 7

Sample #: JD72282-All

Client ID:

Dept:
TAT: 7

Change: Please revise TAT to 7-days

JD72282: Chain of Custody
Page 3 of 3

Above Changes Per: Steve Fox Date/Time: 9/12/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM
July 1, 2010
Final

Exhibit VII A
Revision No. 1

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD72282
Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD72282-1,JD72282-2,JD72282-3,JD72282-4

Matrices: Groundwater/Surface Water () Soil/Sediment (x) Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

¹ **All Negative responses must be addressed in an attached Environmental Laboratory case narrative.**

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 13-Sep-23

5.2
5

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD72282

Varian, Beverly, MA

Project No: VARMS108.A.CS.EV.4.SA PO#148048288

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD72282-1 Collected: 06-SEP-23 14:00 By: DK Received: 06-SEP-23 By: JK SB504_20230906_17-18_N_SO						
JD72282-1	SW846 8260D	08-SEP-23 16:59	JN			V8260MCP
JD72282-1	SM2540 G 18TH ED MO	09-SEP-23 10:40	MK			SOL104
JD72282-2 Collected: 06-SEP-23 15:40 By: DK Received: 06-SEP-23 By: JK TB-20230906_SO-01M						
JD72282-2	SW846 8260D	11-SEP-23 14:27	JN			V8260MCP
JD72282-3 Collected: 06-SEP-23 15:40 By: DK Received: 06-SEP-23 By: JK TB-20230906_SO-01L						
JD72282-3	SW846 8260D	12-SEP-23 16:19	JN			V8260MCP
JD72282-4 Collected: 06-SEP-23 15:40 By: DK Received: 06-SEP-23 By: JK SB504_20230906_37-38_N_SO						
JD72282-4	SW846 8260D	08-SEP-23 17:25	JN			V8260MCP
JD72282-4	SM2540 G 18TH ED MO	09-SEP-23 13:00	MK			SOL104
JD72282-4	SW846 8260D	11-SEP-23 14:49	JN			V8260MCP

5.3
5

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501	SW846 8260D						
V1C8501-BS	67-64-1	Acetone	BSP	REC	181 ^a	%	70-130
V1C8501-BS	71-43-2	Benzene	BSP	REC	93	%	70-130
V1C8501-BS	108-86-1	Bromobenzene	BSP	REC	96	%	70-130
V1C8501-BS	74-97-5	Bromochloromethane	BSP	REC	109	%	70-130
V1C8501-BS	75-27-4	Bromodichloromethane	BSP	REC	86	%	70-130
V1C8501-BS	75-25-2	Bromoform	BSP	REC	99	%	70-130
V1C8501-BS	74-83-9	Bromomethane	BSP	REC	95	%	70-130
V1C8501-BS	78-93-3	2-Butanone (MEK)	BSP	REC	135	%	70-130
V1C8501-BS	104-51-8	n-Butylbenzene	BSP	REC	90	%	70-130
V1C8501-BS	135-98-8	sec-Butylbenzene	BSP	REC	89	%	70-130
V1C8501-BS	98-06-6	tert-Butylbenzene	BSP	REC	93	%	70-130
V1C8501-BS	75-15-0	Carbon disulfide	BSP	REC	104	%	70-130
V1C8501-BS	56-23-5	Carbon tetrachloride	BSP	REC	106	%	70-130
V1C8501-BS	108-90-7	Chlorobenzene	BSP	REC	95	%	70-130
V1C8501-BS	75-00-3	Chloroethane	BSP	REC	107	%	70-130
V1C8501-BS	67-66-3	Chloroform	BSP	REC	105	%	70-130
V1C8501-BS	74-87-3	Chloromethane	BSP	REC	120	%	70-130
V1C8501-BS	95-49-8	o-Chlorotoluene	BSP	REC	94	%	70-130
V1C8501-BS	106-43-4	p-Chlorotoluene	BSP	REC	92	%	70-130
V1C8501-BS	108-20-3	Di-Isopropyl ether	BSP	REC	122	%	70-130
V1C8501-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	80	%	70-130
V1C8501-BS	124-48-1	Dibromochloromethane	BSP	REC	95	%	70-130
V1C8501-BS	106-93-4	1,2-Dibromoethane	BSP	REC	103	%	70-130
V1C8501-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	89	%	70-130
V1C8501-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V1C8501-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	94	%	70-130
V1C8501-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	88	%	70-130
V1C8501-BS	75-34-3	1,1-Dichloroethane	BSP	REC	116	%	70-130
V1C8501-BS	107-06-2	1,2-Dichloroethane	BSP	REC	89	%	70-130
V1C8501-BS	75-35-4	1,1-Dichloroethene	BSP	REC	96	%	70-130
V1C8501-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	102	%	70-130
V1C8501-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	98	%	70-130
V1C8501-BS	78-87-5	1,2-Dichloropropane	BSP	REC	100	%	70-130
V1C8501-BS	142-28-9	1,3-Dichloropropane	BSP	REC	102	%	70-130
V1C8501-BS	594-20-7	2,2-Dichloropropane	BSP	REC	100	%	70-130
V1C8501-BS	563-58-6	1,1-Dichloropropene	BSP	REC	104	%	70-130
V1C8501-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	91	%	70-130
V1C8501-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	100	%	70-130
V1C8501-BS	123-91-1	1,4-Dioxane	BSP	REC	91	%	70-130
V1C8501-BS	60-29-7	Ethyl Ether	BSP	REC	113	%	70-130
V1C8501-BS	100-41-4	Ethylbenzene	BSP	REC	96	%	70-130
V1C8501-BS	87-68-3	Hexachlorobutadiene	BSP	REC	95	%	70-130

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BS	591-78-6	2-Hexanone	BSP	REC	130	%	70-130
V1C8501-BS	98-82-8	Isopropylbenzene	BSP	REC	87	%	70-130
V1C8501-BS	99-87-6	p-Isopropyltoluene	BSP	REC	91	%	70-130
V1C8501-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	104	%	70-130
V1C8501-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	108	%	70-130
V1C8501-BS	74-95-3	Methylene bromide	BSP	REC	91	%	70-130
V1C8501-BS	75-09-2	Methylene chloride	BSP	REC	103	%	70-130
V1C8501-BS	91-20-3	Naphthalene	BSP	REC	89	%	70-130
V1C8501-BS	103-65-1	n-Propylbenzene	BSP	REC	90	%	70-130
V1C8501-BS	100-42-5	Styrene	BSP	REC	95	%	70-130
V1C8501-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	95	%	70-130
V1C8501-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	120	%	70-130
V1C8501-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	101	%	70-130
V1C8501-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	94	%	70-130
V1C8501-BS	127-18-4	Tetrachloroethene	BSP	REC	97	%	70-130
V1C8501-BS	109-99-9	Tetrahydrofuran	BSP	REC	122	%	70-130
V1C8501-BS	108-88-3	Toluene	BSP	REC	100	%	70-130
V1C8501-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	89	%	70-130
V1C8501-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	93	%	70-130
V1C8501-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	104	%	70-130
V1C8501-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	101	%	70-130
V1C8501-BS	79-01-6	Trichloroethene	BSP	REC	90	%	70-130
V1C8501-BS	75-69-4	Trichlorofluoromethane	BSP	REC	96	%	70-130
V1C8501-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	103	%	70-130
V1C8501-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	92	%	70-130
V1C8501-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	92	%	70-130
V1C8501-BS	75-01-4	Vinyl chloride	BSP	REC	110	%	70-130
V1C8501-BS		m,p-Xylene	BSP	REC	98	%	70-130
V1C8501-BS	95-47-6	o-Xylene	BSP	REC	95	%	70-130
V1C8501-BS	1330-20-7	Xylene (total)	BSP	REC	97	%	70-130
V1C8501-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	109	%	70-130
V1C8501-BS	2037-26-5	Toluene-D8	BSP	SURR	112	%	70-130
V1C8501-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	97	%	70-130
V1C8501-BSD	67-64-1	Acetone	BSD	REC	171 ^a	%	70-130
V1C8501-BSD	67-64-1	Acetone	BSD	RPD	6	%	20
V1C8501-BSD	71-43-2	Benzene	BSD	REC	94	%	70-130
V1C8501-BSD	71-43-2	Benzene	BSD	RPD	1	%	20
V1C8501-BSD	108-86-1	Bromobenzene	BSD	REC	100	%	70-130
V1C8501-BSD	108-86-1	Bromobenzene	BSD	RPD	4	%	20
V1C8501-BSD	74-97-5	Bromochloromethane	BSD	REC	111	%	70-130
V1C8501-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V1C8501-BSD	75-27-4	Bromodichloromethane	BSD	REC	88	%	70-130
V1C8501-BSD	75-27-4	Bromodichloromethane	BSD	RPD	2	%	20
V1C8501-BSD	75-25-2	Bromoform	BSD	REC	98	%	70-130
V1C8501-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20

* Sample used for QC is not from job JD72282

5.4
5

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BSD	74-83-9	Bromomethane	BSD	REC	92	%	70-130
V1C8501-BSD	74-83-9	Bromomethane	BSD	RPD	3	%	20
V1C8501-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	139 ^b	%	70-130
V1C8501-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	3	%	20
V1C8501-BSD	104-51-8	n-Butylbenzene	BSD	REC	91	%	70-130
V1C8501-BSD	104-51-8	n-Butylbenzene	BSD	RPD	0	%	20
V1C8501-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V1C8501-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	4	%	20
V1C8501-BSD	98-06-6	tert-Butylbenzene	BSD	REC	93	%	70-130
V1C8501-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	0	%	20
V1C8501-BSD	75-15-0	Carbon disulfide	BSD	REC	106	%	70-130
V1C8501-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V1C8501-BSD	56-23-5	Carbon tetrachloride	BSD	REC	108	%	70-130
V1C8501-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	2	%	20
V1C8501-BSD	108-90-7	Chlorobenzene	BSD	REC	93	%	70-130
V1C8501-BSD	108-90-7	Chlorobenzene	BSD	RPD	1	%	20
V1C8501-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V1C8501-BSD	75-00-3	Chloroethane	BSD	RPD	1	%	20
V1C8501-BSD	67-66-3	Chloroform	BSD	REC	106	%	70-130
V1C8501-BSD	67-66-3	Chloroform	BSD	RPD	0	%	20
V1C8501-BSD	74-87-3	Chloromethane	BSD	REC	115	%	70-130
V1C8501-BSD	74-87-3	Chloromethane	BSD	RPD	4	%	20
V1C8501-BSD	95-49-8	o-Chlorotoluene	BSD	REC	97	%	70-130
V1C8501-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	3	%	20
V1C8501-BSD	106-43-4	p-Chlorotoluene	BSD	REC	91	%	70-130
V1C8501-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	1	%	20
V1C8501-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	126	%	70-130
V1C8501-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	3	%	20
V1C8501-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	79	%	70-130
V1C8501-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V1C8501-BSD	124-48-1	Dibromochloromethane	BSD	REC	91	%	70-130
V1C8501-BSD	124-48-1	Dibromochloromethane	BSD	RPD	5	%	20
V1C8501-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	102	%	70-130
V1C8501-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1C8501-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	93	%	70-130
V1C8501-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	5	%	20
V1C8501-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8501-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	1	%	20
V1C8501-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	101	%	70-130
V1C8501-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	7	%	20
V1C8501-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	91	%	70-130
V1C8501-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	3	%	20
V1C8501-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	119	%	70-130
V1C8501-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V1C8501-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	90	%	70-130

* Sample used for QC is not from job JD72282

5.4
5

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	1	%	20
V1C8501-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	96	%	70-130
V1C8501-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	0	%	20
V1C8501-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	104	%	70-130
V1C8501-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V1C8501-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	102	%	70-130
V1C8501-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	4	%	20
V1C8501-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	101	%	70-130
V1C8501-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	0	%	20
V1C8501-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	99	%	70-130
V1C8501-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V1C8501-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	101	%	70-130
V1C8501-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	1	%	20
V1C8501-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	106	%	70-130
V1C8501-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	2	%	20
V1C8501-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	90	%	70-130
V1C8501-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	0	%	20
V1C8501-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	98	%	70-130
V1C8501-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	2	%	20
V1C8501-BSD	123-91-1	1,4-Dioxane	BSD	REC	98	%	70-130
V1C8501-BSD	123-91-1	1,4-Dioxane	BSD	RPD	7	%	20
V1C8501-BSD	60-29-7	Ethyl Ether	BSD	REC	113	%	70-130
V1C8501-BSD	60-29-7	Ethyl Ether	BSD	RPD	0	%	20
V1C8501-BSD	100-41-4	Ethylbenzene	BSD	REC	96	%	70-130
V1C8501-BSD	100-41-4	Ethylbenzene	BSD	RPD	0	%	20
V1C8501-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	97	%	70-130
V1C8501-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	2	%	20
V1C8501-BSD	591-78-6	2-Hexanone	BSD	REC	123	%	70-130
V1C8501-BSD	591-78-6	2-Hexanone	BSD	RPD	5	%	20
V1C8501-BSD	98-82-8	Isopropylbenzene	BSD	REC	86	%	70-130
V1C8501-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V1C8501-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	94	%	70-130
V1C8501-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	4	%	20
V1C8501-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	104	%	70-130
V1C8501-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	0	%	20
V1C8501-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	110	%	70-130
V1C8501-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	1	%	20
V1C8501-BSD	74-95-3	Methylene bromide	BSD	REC	95	%	70-130
V1C8501-BSD	74-95-3	Methylene bromide	BSD	RPD	5	%	20
V1C8501-BSD	75-09-2	Methylene chloride	BSD	REC	105	%	70-130
V1C8501-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V1C8501-BSD	91-20-3	Naphthalene	BSD	REC	88	%	70-130
V1C8501-BSD	91-20-3	Naphthalene	BSD	RPD	2	%	20
V1C8501-BSD	103-65-1	n-Propylbenzene	BSD	REC	92	%	70-130
V1C8501-BSD	103-65-1	n-Propylbenzene	BSD	RPD	2	%	20

* Sample used for QC is not from job JD72282

5.4
5

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BSD	100-42-5	Styrene	BSD	REC	93	%	70-130
V1C8501-BSD	100-42-5	Styrene	BSD	RPD	2	%	20
V1C8501-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	95	%	70-130
V1C8501-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V1C8501-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	121	%	70-130
V1C8501-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	1	%	20
V1C8501-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	97	%	70-130
V1C8501-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	4	%	20
V1C8501-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	97	%	70-130
V1C8501-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	3	%	20
V1C8501-BSD	127-18-4	Tetrachloroethene	BSD	REC	94	%	70-130
V1C8501-BSD	127-18-4	Tetrachloroethene	BSD	RPD	3	%	20
V1C8501-BSD	109-99-9	Tetrahydrofuran	BSD	REC	117	%	70-130
V1C8501-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	4	%	20
V1C8501-BSD	108-88-3	Toluene	BSD	REC	99	%	70-130
V1C8501-BSD	108-88-3	Toluene	BSD	RPD	1	%	20
V1C8501-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	91	%	70-130
V1C8501-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	3	%	20
V1C8501-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	99	%	70-130
V1C8501-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	5	%	20
V1C8501-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	110	%	70-130
V1C8501-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	6	%	20
V1C8501-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	98	%	70-130
V1C8501-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V1C8501-BSD	79-01-6	Trichloroethene	BSD	REC	96	%	70-130
V1C8501-BSD	79-01-6	Trichloroethene	BSD	RPD	6	%	20
V1C8501-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	100	%	70-130
V1C8501-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	3	%	20
V1C8501-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	102	%	70-130
V1C8501-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	1	%	20
V1C8501-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	95	%	70-130
V1C8501-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	4	%	20
V1C8501-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	95	%	70-130
V1C8501-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	4	%	20
V1C8501-BSD	75-01-4	Vinyl chloride	BSD	REC	113	%	70-130
V1C8501-BSD	75-01-4	Vinyl chloride	BSD	RPD	3	%	20
V1C8501-BSD		m,p-Xylene	BSD	REC	96	%	70-130
V1C8501-BSD		m,p-Xylene	BSD	RPD	2	%	20
V1C8501-BSD	95-47-6	o-Xylene	BSD	REC	96	%	70-130
V1C8501-BSD	95-47-6	o-Xylene	BSD	RPD	1	%	20
V1C8501-BSD	1330-20-7	Xylene (total)	BSD	REC	96	%	70-130
V1C8501-BSD	1330-20-7	Xylene (total)	BSD	RPD	1	%	20
V1C8501-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	109	%	70-130
V1C8501-BSD	2037-26-5	Toluene-D8	BSD	SURR	106	%	70-130
V1C8501-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	100	%	70-130

* Sample used for QC is not from job JD72282

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QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-MB	1868-53-7	Dibromofluoromethane	MB	SURR	109	%	70-130
V1C8501-MB	2037-26-5	Toluene-D8	MB	SURR	106	%	70-130
V1C8501-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	101	%	70-130
JD72282-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	110	%	70-130
JD72282-1	2037-26-5	Toluene-D8	SAMP	SURR	107	%	70-130
JD72282-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	70-130
JD72282-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	112	%	70-130
JD72282-4	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD72282-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	70-130
V1C8503 SW846 8260D							
V1C8503-BS	67-64-1	Acetone	BSP	REC	182 ^b	%	70-130
V1C8503-BS	71-43-2	Benzene	BSP	REC	86	%	70-130
V1C8503-BS	108-86-1	Bromobenzene	BSP	REC	89	%	70-130
V1C8503-BS	74-97-5	Bromochloromethane	BSP	REC	110	%	70-130
V1C8503-BS	75-27-4	Bromodichloromethane	BSP	REC	80 ^c	%	70-130
V1C8503-BS	75-25-2	Bromoform	BSP	REC	94	%	70-130
V1C8503-BS	74-83-9	Bromomethane	BSP	REC	92	%	70-130
V1C8503-BS	78-93-3	2-Butanone (MEK)	BSP	REC	136	%	70-130
V1C8503-BS	104-51-8	n-Butylbenzene	BSP	REC	80 ^c	%	70-130
V1C8503-BS	135-98-8	sec-Butylbenzene	BSP	REC	81	%	70-130
V1C8503-BS	98-06-6	tert-Butylbenzene	BSP	REC	83	%	70-130
V1C8503-BS	75-15-0	Carbon disulfide	BSP	REC	104	%	70-130
V1C8503-BS	56-23-5	Carbon tetrachloride	BSP	REC	99	%	70-130
V1C8503-BS	108-90-7	Chlorobenzene	BSP	REC	90	%	70-130
V1C8503-BS	75-00-3	Chloroethane	BSP	REC	106	%	70-130
V1C8503-BS	67-66-3	Chloroform	BSP	REC	103	%	70-130
V1C8503-BS	74-87-3	Chloromethane	BSP	REC	108	%	70-130
V1C8503-BS	95-49-8	o-Chlorotoluene	BSP	REC	87	%	70-130
V1C8503-BS	106-43-4	p-Chlorotoluene	BSP	REC	86	%	70-130
V1C8503-BS	108-20-3	Di-Isopropyl ether	BSP	REC	110	%	70-130
V1C8503-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	70 ^d	%	70-130
V1C8503-BS	124-48-1	Dibromochloromethane	BSP	REC	88	%	70-130
V1C8503-BS	106-93-4	1,2-Dibromoethane	BSP	REC	97	%	70-130
V1C8503-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	82 ^c	%	70-130
V1C8503-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	84	%	70-130
V1C8503-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	88	%	70-130
V1C8503-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	87	%	70-130
V1C8503-BS	75-34-3	1,1-Dichloroethane	BSP	REC	110	%	70-130
V1C8503-BS	107-06-2	1,2-Dichloroethane	BSP	REC	79	%	70-130
V1C8503-BS	75-35-4	1,1-Dichloroethene	BSP	REC	95	%	70-130
V1C8503-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	105	%	70-130
V1C8503-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	98	%	70-130
V1C8503-BS	78-87-5	1,2-Dichloropropane	BSP	REC	91	%	70-130

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BS	142-28-9	1,3-Dichloropropane	BSP	REC	92	%	70-130
V1C8503-BS	594-20-7	2,2-Dichloropropane	BSP	REC	97	%	70-130
V1C8503-BS	563-58-6	1,1-Dichloropropene	BSP	REC	95	%	70-130
V1C8503-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	80 °	%	70-130
V1C8503-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	91	%	70-130
V1C8503-BS	123-91-1	1,4-Dioxane	BSP	REC	98	%	70-130
V1C8503-BS	60-29-7	Ethyl Ether	BSP	REC	111	%	70-130
V1C8503-BS	100-41-4	Ethylbenzene	BSP	REC	88	%	70-130
V1C8503-BS	87-68-3	Hexachlorobutadiene	BSP	REC	90	%	70-130
V1C8503-BS	591-78-6	2-Hexanone	BSP	REC	109	%	70-130
V1C8503-BS	98-82-8	Isopropylbenzene	BSP	REC	83	%	70-130
V1C8503-BS	99-87-6	p-Isopropyltoluene	BSP	REC	80	%	70-130
V1C8503-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	103	%	70-130
V1C8503-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	90	%	70-130
V1C8503-BS	74-95-3	Methylene bromide	BSP	REC	85	%	70-130
V1C8503-BS	75-09-2	Methylene chloride	BSP	REC	105	%	70-130
V1C8503-BS	91-20-3	Naphthalene	BSP	REC	77	%	70-130
V1C8503-BS	103-65-1	n-Propylbenzene	BSP	REC	80	%	70-130
V1C8503-BS	100-42-5	Styrene	BSP	REC	86	%	70-130
V1C8503-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	87	%	70-130
V1C8503-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	117	%	70-130
V1C8503-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	94	%	70-130
V1C8503-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	83	%	70-130
V1C8503-BS	127-18-4	Tetrachloroethene	BSP	REC	89	%	70-130
V1C8503-BS	109-99-9	Tetrahydrofuran	BSP	REC	98	%	70-130
V1C8503-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V1C8503-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	83	%	70-130
V1C8503-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	87	%	70-130
V1C8503-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	101	%	70-130
V1C8503-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	93	%	70-130
V1C8503-BS	79-01-6	Trichloroethene	BSP	REC	85	%	70-130
V1C8503-BS	75-69-4	Trichlorofluoromethane	BSP	REC	96	%	70-130
V1C8503-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	92	%	70-130
V1C8503-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	88	%	70-130
V1C8503-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	84	%	70-130
V1C8503-BS	75-01-4	Vinyl chloride	BSP	REC	103	%	70-130
V1C8503-BS		m,p-Xylene	BSP	REC	89	%	70-130
V1C8503-BS	95-47-6	o-Xylene	BSP	REC	86	%	70-130
V1C8503-BS	1330-20-7	Xylene (total)	BSP	REC	88	%	70-130
V1C8503-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	115	%	70-130
V1C8503-BS	2037-26-5	Toluene-D8	BSP	SURR	105	%	70-130
V1C8503-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	94	%	70-130
V1C8503-BSD	67-64-1	Acetone	BSD	REC	168 ^b	%	70-130
V1C8503-BSD	67-64-1	Acetone	BSD	RPD	8	%	20
V1C8503-BSD	71-43-2	Benzene	BSD	REC	93	%	70-130

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	71-43-2	Benzene	BSD	RPD	8	%	20
V1C8503-BSD	108-86-1	Bromobenzene	BSD	REC	92	%	70-130
V1C8503-BSD	108-86-1	Bromobenzene	BSD	RPD	4	%	20
V1C8503-BSD	74-97-5	Bromochloromethane	BSD	REC	112	%	70-130
V1C8503-BSD	74-97-5	Bromochloromethane	BSD	RPD	2	%	20
V1C8503-BSD	75-27-4	Bromodichloromethane	BSD	REC	85	%	70-130
V1C8503-BSD	75-27-4	Bromodichloromethane	BSD	RPD	6	%	20
V1C8503-BSD	75-25-2	Bromoform	BSD	REC	95	%	70-130
V1C8503-BSD	75-25-2	Bromoform	BSD	RPD	2	%	20
V1C8503-BSD	74-83-9	Bromomethane	BSD	REC	96	%	70-130
V1C8503-BSD	74-83-9	Bromomethane	BSD	RPD	4	%	20
V1C8503-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	128	%	70-130
V1C8503-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	6	%	20
V1C8503-BSD	104-51-8	n-Butylbenzene	BSD	REC	84	%	70-130
V1C8503-BSD	104-51-8	n-Butylbenzene	BSD	RPD	5	%	20
V1C8503-BSD	135-98-8	sec-Butylbenzene	BSD	REC	81	%	70-130
V1C8503-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	0	%	20
V1C8503-BSD	98-06-6	tert-Butylbenzene	BSD	REC	85	%	70-130
V1C8503-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V1C8503-BSD	75-15-0	Carbon disulfide	BSD	REC	106	%	70-130
V1C8503-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V1C8503-BSD	56-23-5	Carbon tetrachloride	BSD	REC	104	%	70-130
V1C8503-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V1C8503-BSD	108-90-7	Chlorobenzene	BSD	REC	94	%	70-130
V1C8503-BSD	108-90-7	Chlorobenzene	BSD	RPD	5	%	20
V1C8503-BSD	75-00-3	Chloroethane	BSD	REC	108	%	70-130
V1C8503-BSD	75-00-3	Chloroethane	BSD	RPD	2	%	20
V1C8503-BSD	67-66-3	Chloroform	BSD	REC	105	%	70-130
V1C8503-BSD	67-66-3	Chloroform	BSD	RPD	3	%	20
V1C8503-BSD	74-87-3	Chloromethane	BSD	REC	111	%	70-130
V1C8503-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V1C8503-BSD	95-49-8	o-Chlorotoluene	BSD	REC	86	%	70-130
V1C8503-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V1C8503-BSD	106-43-4	p-Chlorotoluene	BSD	REC	85	%	70-130
V1C8503-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	0	%	20
V1C8503-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	116	%	70-130
V1C8503-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	5	%	20
V1C8503-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	75	%	70-130
V1C8503-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	7	%	20
V1C8503-BSD	124-48-1	Dibromochloromethane	BSD	REC	91	%	70-130
V1C8503-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V1C8503-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	98	%	70-130
V1C8503-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1C8503-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8503-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	11 ^a	%	20

* Sample used for QC is not from job JD72282

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QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	86	%	70-130
V1C8503-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V1C8503-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8503-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V1C8503-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	91	%	70-130
V1C8503-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	4	%	20
V1C8503-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	113	%	70-130
V1C8503-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V1C8503-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	84	%	70-130
V1C8503-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	7	%	20
V1C8503-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	101	%	70-130
V1C8503-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	6	%	20
V1C8503-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	104	%	70-130
V1C8503-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V1C8503-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	99	%	70-130
V1C8503-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	1	%	20
V1C8503-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	98	%	70-130
V1C8503-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	8	%	20
V1C8503-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	99	%	70-130
V1C8503-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	7	%	20
V1C8503-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	97	%	70-130
V1C8503-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	0	%	20
V1C8503-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	101	%	70-130
V1C8503-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	7	%	20
V1C8503-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	89	%	70-130
V1C8503-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	11 ^a	%	20
V1C8503-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	95	%	70-130
V1C8503-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	4	%	20
V1C8503-BSD	123-91-1	1,4-Dioxane	BSD	REC	102	%	70-130
V1C8503-BSD	123-91-1	1,4-Dioxane	BSD	RPD	5	%	20
V1C8503-BSD	60-29-7	Ethyl Ether	BSD	REC	108	%	70-130
V1C8503-BSD	60-29-7	Ethyl Ether	BSD	RPD	3	%	20
V1C8503-BSD	100-41-4	Ethylbenzene	BSD	REC	94	%	70-130
V1C8503-BSD	100-41-4	Ethylbenzene	BSD	RPD	7	%	20
V1C8503-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	94	%	70-130
V1C8503-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	5	%	20
V1C8503-BSD	591-78-6	2-Hexanone	BSD	REC	114	%	70-130
V1C8503-BSD	591-78-6	2-Hexanone	BSD	RPD	4	%	20
V1C8503-BSD	98-82-8	Isopropylbenzene	BSD	REC	82	%	70-130
V1C8503-BSD	98-82-8	Isopropylbenzene	BSD	RPD	1	%	20
V1C8503-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	88	%	70-130
V1C8503-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	9	%	20
V1C8503-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	104	%	70-130
V1C8503-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	1	%	20
V1C8503-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	92	%	70-130

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	3	%	20
V1C8503-BSD	74-95-3	Methylene bromide	BSD	REC	92	%	70-130
V1C8503-BSD	74-95-3	Methylene bromide	BSD	RPD	8	%	20
V1C8503-BSD	75-09-2	Methylene chloride	BSD	REC	107	%	70-130
V1C8503-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V1C8503-BSD	91-20-3	Naphthalene	BSD	REC	84	%	70-130
V1C8503-BSD	91-20-3	Naphthalene	BSD	RPD	9	%	20
V1C8503-BSD	103-65-1	n-Propylbenzene	BSD	REC	82	%	70-130
V1C8503-BSD	103-65-1	n-Propylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	100-42-5	Styrene	BSD	REC	95	%	70-130
V1C8503-BSD	100-42-5	Styrene	BSD	RPD	11 ^a	%	20
V1C8503-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	95	%	70-130
V1C8503-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	8	%	20
V1C8503-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	118	%	70-130
V1C8503-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	1	%	20
V1C8503-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	99	%	70-130
V1C8503-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	6	%	20
V1C8503-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	90	%	70-130
V1C8503-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	8	%	20
V1C8503-BSD	127-18-4	Tetrachloroethene	BSD	REC	99	%	70-130
V1C8503-BSD	127-18-4	Tetrachloroethene	BSD	RPD	11	%	20
V1C8503-BSD	109-99-9	Tetrahydrofuran	BSD	REC	98	%	70-130
V1C8503-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	0	%	20
V1C8503-BSD	108-88-3	Toluene	BSD	REC	97	%	70-130
V1C8503-BSD	108-88-3	Toluene	BSD	RPD	4	%	20
V1C8503-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	88	%	70-130
V1C8503-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	7	%	20
V1C8503-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	94	%	70-130
V1C8503-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	9	%	20
V1C8503-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	107	%	70-130
V1C8503-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	6	%	20
V1C8503-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V1C8503-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V1C8503-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V1C8503-BSD	79-01-6	Trichloroethene	BSD	RPD	10	%	20
V1C8503-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	100	%	70-130
V1C8503-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	4	%	20
V1C8503-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	91	%	70-130
V1C8503-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	2	%	20
V1C8503-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	89	%	70-130
V1C8503-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	83	%	70-130
V1C8503-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	75-01-4	Vinyl chloride	BSD	REC	109	%	70-130
V1C8503-BSD	75-01-4	Vinyl chloride	BSD	RPD	6	%	20

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD		m,p-Xylene	BSD	REC	92	%	70-130
V1C8503-BSD		m,p-Xylene	BSD	RPD	4	%	20
V1C8503-BSD	95-47-6	o-Xylene	BSD	REC	98	%	70-130
V1C8503-BSD	95-47-6	o-Xylene	BSD	RPD	13 ^a	%	20
V1C8503-BSD	1330-20-7	Xylene (total)	BSD	REC	94	%	70-130
V1C8503-BSD	1330-20-7	Xylene (total)	BSD	RPD	7	%	20
V1C8503-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	113	%	70-130
V1C8503-BSD	2037-26-5	Toluene-D8	BSD	SURR	107	%	70-130
V1C8503-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	94	%	70-130
V1C8503-MB	1868-53-7	Dibromofluoromethane	MB	SURR	113	%	70-130
V1C8503-MB	2037-26-5	Toluene-D8	MB	SURR	109	%	70-130
V1C8503-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	94	%	70-130
JD72282-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	112	%	70-130
JD72282-3	2037-26-5	Toluene-D8	SAMP	SURR	103	%	70-130
JD72282-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
V3D8040	SW846 8260D						
V3D8040-BS	67-64-1	Acetone	BSP	REC	118	%	70-130
V3D8040-BS	71-43-2	Benzene	BSP	REC	91	%	70-130
V3D8040-BS	108-86-1	Bromobenzene	BSP	REC	92	%	70-130
V3D8040-BS	74-97-5	Bromochloromethane	BSP	REC	96	%	70-130
V3D8040-BS	75-27-4	Bromodichloromethane	BSP	REC	88	%	70-130
V3D8040-BS	75-25-2	Bromoform	BSP	REC	95	%	70-130
V3D8040-BS	74-83-9	Bromomethane	BSP	REC	106	%	70-130
V3D8040-BS	78-93-3	2-Butanone (MEK)	BSP	REC	108	%	70-130
V3D8040-BS	104-51-8	n-Butylbenzene	BSP	REC	93	%	70-130
V3D8040-BS	135-98-8	sec-Butylbenzene	BSP	REC	92	%	70-130
V3D8040-BS	98-06-6	tert-Butylbenzene	BSP	REC	93	%	70-130
V3D8040-BS	75-15-0	Carbon disulfide	BSP	REC	92	%	70-130
V3D8040-BS	56-23-5	Carbon tetrachloride	BSP	REC	91	%	70-130
V3D8040-BS	108-90-7	Chlorobenzene	BSP	REC	92	%	70-130
V3D8040-BS	75-00-3	Chloroethane	BSP	REC	103	%	70-130
V3D8040-BS	67-66-3	Chloroform	BSP	REC	83	%	70-130
V3D8040-BS	74-87-3	Chloromethane	BSP	REC	87	%	70-130
V3D8040-BS	95-49-8	o-Chlorotoluene	BSP	REC	92	%	70-130
V3D8040-BS	106-43-4	p-Chlorotoluene	BSP	REC	91	%	70-130
V3D8040-BS	108-20-3	Di-Isopropyl ether	BSP	REC	90	%	70-130
V3D8040-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	89	%	70-130
V3D8040-BS	124-48-1	Dibromochloromethane	BSP	REC	91	%	70-130
V3D8040-BS	106-93-4	1,2-Dibromoethane	BSP	REC	92	%	70-130
V3D8040-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	95	%	70-130
V3D8040-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	94	%	70-130
V3D8040-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	91	%	70-130
V3D8040-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	96	%	70-130

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BS	75-34-3	1,1-Dichloroethane	BSP	REC	90	%	70-130
V3D8040-BS	107-06-2	1,2-Dichloroethane	BSP	REC	83	%	70-130
V3D8040-BS	75-35-4	1,1-Dichloroethene	BSP	REC	95	%	70-130
V3D8040-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	93	%	70-130
V3D8040-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	90	%	70-130
V3D8040-BS	78-87-5	1,2-Dichloropropane	BSP	REC	91	%	70-130
V3D8040-BS	142-28-9	1,3-Dichloropropane	BSP	REC	91	%	70-130
V3D8040-BS	594-20-7	2,2-Dichloropropane	BSP	REC	88	%	70-130
V3D8040-BS	563-58-6	1,1-Dichloropropene	BSP	REC	92	%	70-130
V3D8040-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	93	%	70-130
V3D8040-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	93	%	70-130
V3D8040-BS	123-91-1	1,4-Dioxane	BSP	REC	124	%	70-130
V3D8040-BS	60-29-7	Ethyl Ether	BSP	REC	93	%	70-130
V3D8040-BS	100-41-4	Ethylbenzene	BSP	REC	92	%	70-130
V3D8040-BS	87-68-3	Hexachlorobutadiene	BSP	REC	87	%	70-130
V3D8040-BS	591-78-6	2-Hexanone	BSP	REC	97	%	70-130
V3D8040-BS	98-82-8	Isopropylbenzene	BSP	REC	93	%	70-130
V3D8040-BS	99-87-6	p-Isopropyltoluene	BSP	REC	94	%	70-130
V3D8040-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	94	%	70-130
V3D8040-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	93	%	70-130
V3D8040-BS	74-95-3	Methylene bromide	BSP	REC	88	%	70-130
V3D8040-BS	75-09-2	Methylene chloride	BSP	REC	85	%	70-130
V3D8040-BS	91-20-3	Naphthalene	BSP	REC	82	%	70-130
V3D8040-BS	103-65-1	n-Propylbenzene	BSP	REC	90	%	70-130
V3D8040-BS	100-42-5	Styrene	BSP	REC	98	%	70-130
V3D8040-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	94	%	70-130
V3D8040-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	90	%	70-130
V3D8040-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	95	%	70-130
V3D8040-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	88	%	70-130
V3D8040-BS	127-18-4	Tetrachloroethene	BSP	REC	88	%	70-130
V3D8040-BS	109-99-9	Tetrahydrofuran	BSP	REC	81	%	70-130
V3D8040-BS	108-88-3	Toluene	BSP	REC	90	%	70-130
V3D8040-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	84	%	70-130
V3D8040-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	90	%	70-130
V3D8040-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	88	%	70-130
V3D8040-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	89	%	70-130
V3D8040-BS	79-01-6	Trichloroethene	BSP	REC	92	%	70-130
V3D8040-BS	75-69-4	Trichlorofluoromethane	BSP	REC	89	%	70-130
V3D8040-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	86	%	70-130
V3D8040-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	88	%	70-130
V3D8040-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	91	%	70-130
V3D8040-BS	75-01-4	Vinyl chloride	BSP	REC	99	%	70-130
V3D8040-BS		m,p-Xylene	BSP	REC	93	%	70-130
V3D8040-BS	95-47-6	o-Xylene	BSP	REC	93	%	70-130
V3D8040-BS	1330-20-7	Xylene (total)	BSP	REC	93	%	70-130

* Sample used for QC is not from job JD72282

QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	100	%	70-130
V3D8040-BS	2037-26-5	Toluene-D8	BSP	SURR	99	%	70-130
V3D8040-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	91	%	70-130
V3D8040-BSD	67-64-1	Acetone	BSD	REC	136	%	70-130
V3D8040-BSD	67-64-1	Acetone	BSD	RPD	14 ^a	%	20
V3D8040-BSD	71-43-2	Benzene	BSD	REC	92	%	70-130
V3D8040-BSD	71-43-2	Benzene	BSD	RPD	1	%	20
V3D8040-BSD	108-86-1	Bromobenzene	BSD	REC	93	%	70-130
V3D8040-BSD	108-86-1	Bromobenzene	BSD	RPD	1	%	20
V3D8040-BSD	74-97-5	Bromochloromethane	BSD	REC	96	%	70-130
V3D8040-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V3D8040-BSD	75-27-4	Bromodichloromethane	BSD	REC	90	%	70-130
V3D8040-BSD	75-27-4	Bromodichloromethane	BSD	RPD	3	%	20
V3D8040-BSD	75-25-2	Bromoform	BSD	REC	98	%	70-130
V3D8040-BSD	75-25-2	Bromoform	BSD	RPD	3	%	20
V3D8040-BSD	74-83-9	Bromomethane	BSD	REC	113	%	70-130
V3D8040-BSD	74-83-9	Bromomethane	BSD	RPD	6	%	20
V3D8040-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	119	%	70-130
V3D8040-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	10	%	20
V3D8040-BSD	104-51-8	n-Butylbenzene	BSD	REC	94	%	70-130
V3D8040-BSD	104-51-8	n-Butylbenzene	BSD	RPD	0	%	20
V3D8040-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V3D8040-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	0	%	20
V3D8040-BSD	98-06-6	tert-Butylbenzene	BSD	REC	94	%	70-130
V3D8040-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	1	%	20
V3D8040-BSD	75-15-0	Carbon disulfide	BSD	REC	95	%	70-130
V3D8040-BSD	75-15-0	Carbon disulfide	BSD	RPD	3	%	20
V3D8040-BSD	56-23-5	Carbon tetrachloride	BSD	REC	93	%	70-130
V3D8040-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	3	%	20
V3D8040-BSD	108-90-7	Chlorobenzene	BSD	REC	92	%	70-130
V3D8040-BSD	108-90-7	Chlorobenzene	BSD	RPD	1	%	20
V3D8040-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V3D8040-BSD	75-00-3	Chloroethane	BSD	RPD	3	%	20
V3D8040-BSD	67-66-3	Chloroform	BSD	REC	84	%	70-130
V3D8040-BSD	67-66-3	Chloroform	BSD	RPD	2	%	20
V3D8040-BSD	74-87-3	Chloromethane	BSD	REC	85	%	70-130
V3D8040-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V3D8040-BSD	95-49-8	o-Chlorotoluene	BSD	REC	92	%	70-130
V3D8040-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	0	%	20
V3D8040-BSD	106-43-4	p-Chlorotoluene	BSD	REC	92	%	70-130
V3D8040-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	0	%	20
V3D8040-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	90	%	70-130
V3D8040-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	0	%	20
V3D8040-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	95	%	70-130
V3D8040-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	6	%	20

* Sample used for QC is not from job JD72282

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QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD	124-48-1	Dibromochloromethane	BSD	REC	94	%	70-130
V3D8040-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V3D8040-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	95	%	70-130
V3D8040-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	3	%	20
V3D8040-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	95	%	70-130
V3D8040-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	0	%	20
V3D8040-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	94	%	70-130
V3D8040-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	0	%	20
V3D8040-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	90	%	70-130
V3D8040-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	1	%	20
V3D8040-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	94	%	70-130
V3D8040-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	2	%	20
V3D8040-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	92	%	70-130
V3D8040-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	1	%	20
V3D8040-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	86	%	70-130
V3D8040-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	4	%	20
V3D8040-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	97	%	70-130
V3D8040-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V3D8040-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	96	%	70-130
V3D8040-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	3	%	20
V3D8040-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	92	%	70-130
V3D8040-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	2	%	20
V3D8040-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	92	%	70-130
V3D8040-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	1	%	20
V3D8040-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	93	%	70-130
V3D8040-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	2	%	20
V3D8040-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	89	%	70-130
V3D8040-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	2	%	20
V3D8040-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	95	%	70-130
V3D8040-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	3	%	20
V3D8040-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	94	%	70-130
V3D8040-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	1	%	20
V3D8040-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	94	%	70-130
V3D8040-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V3D8040-BSD	123-91-1	1,4-Dioxane	BSD	REC	129	%	70-130
V3D8040-BSD	123-91-1	1,4-Dioxane	BSD	RPD	4	%	20
V3D8040-BSD	60-29-7	Ethyl Ether	BSD	REC	95	%	70-130
V3D8040-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V3D8040-BSD	100-41-4	Ethylbenzene	BSD	REC	94	%	70-130
V3D8040-BSD	100-41-4	Ethylbenzene	BSD	RPD	2	%	20
V3D8040-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	88	%	70-130
V3D8040-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	1	%	20
V3D8040-BSD	591-78-6	2-Hexanone	BSD	REC	107	%	70-130
V3D8040-BSD	591-78-6	2-Hexanone	BSD	RPD	10	%	20
V3D8040-BSD	98-82-8	Isopropylbenzene	BSD	REC	95	%	70-130

* Sample used for QC is not from job JD72282

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QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V3D8040-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	94	%	70-130
V3D8040-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	0	%	20
V3D8040-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	99	%	70-130
V3D8040-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	5	%	20
V3D8040-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	101	%	70-130
V3D8040-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	8	%	20
V3D8040-BSD	74-95-3	Methylene bromide	BSD	REC	91	%	70-130
V3D8040-BSD	74-95-3	Methylene bromide	BSD	RPD	3	%	20
V3D8040-BSD	75-09-2	Methylene chloride	BSD	REC	86	%	70-130
V3D8040-BSD	75-09-2	Methylene chloride	BSD	RPD	1	%	20
V3D8040-BSD	91-20-3	Naphthalene	BSD	REC	90	%	70-130
V3D8040-BSD	91-20-3	Naphthalene	BSD	RPD	10	%	20
V3D8040-BSD	103-65-1	n-Propylbenzene	BSD	REC	91	%	70-130
V3D8040-BSD	103-65-1	n-Propylbenzene	BSD	RPD	1	%	20
V3D8040-BSD	100-42-5	Styrene	BSD	REC	99	%	70-130
V3D8040-BSD	100-42-5	Styrene	BSD	RPD	2	%	20
V3D8040-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	97	%	70-130
V3D8040-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	4	%	20
V3D8040-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	93	%	70-130
V3D8040-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	3	%	20
V3D8040-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	98	%	70-130
V3D8040-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	4	%	20
V3D8040-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	90	%	70-130
V3D8040-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	1	%	20
V3D8040-BSD	127-18-4	Tetrachloroethene	BSD	REC	89	%	70-130
V3D8040-BSD	127-18-4	Tetrachloroethene	BSD	RPD	1	%	20
V3D8040-BSD	109-99-9	Tetrahydrofuran	BSD	REC	87	%	70-130
V3D8040-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	7	%	20
V3D8040-BSD	108-88-3	Toluene	BSD	REC	91	%	70-130
V3D8040-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V3D8040-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	90	%	70-130
V3D8040-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	6	%	20
V3D8040-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	92	%	70-130
V3D8040-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	3	%	20
V3D8040-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	90	%	70-130
V3D8040-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	2	%	20
V3D8040-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	92	%	70-130
V3D8040-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V3D8040-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V3D8040-BSD	79-01-6	Trichloroethene	BSD	RPD	3	%	20
V3D8040-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	90	%	70-130
V3D8040-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	1	%	20
V3D8040-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	92	%	70-130
V3D8040-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	6	%	20

* Sample used for QC is not from job JD72282

5.4
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QC Evaluation: MA MCP Limits

Job Number: JD72282
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	88	%	70-130
V3D8040-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	1	%	20
V3D8040-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	91	%	70-130
V3D8040-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	0	%	20
V3D8040-BSD	75-01-4	Vinyl chloride	BSD	REC	103	%	70-130
V3D8040-BSD	75-01-4	Vinyl chloride	BSD	RPD	4	%	20
V3D8040-BSD		m,p-Xylene	BSD	REC	95	%	70-130
V3D8040-BSD		m,p-Xylene	BSD	RPD	2	%	20
V3D8040-BSD	95-47-6	o-Xylene	BSD	REC	96	%	70-130
V3D8040-BSD	95-47-6	o-Xylene	BSD	RPD	3	%	20
V3D8040-BSD	1330-20-7	Xylene (total)	BSD	REC	95	%	70-130
V3D8040-BSD	1330-20-7	Xylene (total)	BSD	RPD	2	%	20
V3D8040-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	102	%	70-130
V3D8040-BSD	2037-26-5	Toluene-D8	BSD	SURR	99	%	70-130
V3D8040-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	90	%	70-130
V3D8040-MB	1868-53-7	Dibromofluoromethane	MB	SURR	99	%	70-130
V3D8040-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V3D8040-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	93	%	70-130
JD72282-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	97	%	70-130
JD72282-2	2037-26-5	Toluene-D8	SAMP	SURR	100	%	70-130
JD72282-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	93	%	70-130
JD72282-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	70-130
JD72282-4	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72282-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	93	%	70-130

- (a) Outside in house control limits.
- (b) High percent recovery and no associated positive reported in the QC batch.
- (c) Outside of in house control limits, but within reasonable method recovery limits.
- (d) Outside of in house control limits, but within the marginal exceedance limits.

* Sample used for QC is not from job JD72282

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-MB	1C196196.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-1, JD72282-4

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	0.55	2.0	ug/kg	J
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-MB	1C196196.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-1, JD72282-4

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	ND	5.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-MB	1C196196.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-1, JD72282-4

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	109% 80-124%
17060-07-0	1,2-Dichloroethane-D4	97% 75-133%
2037-26-5	Toluene-D8	106% 79-125%
460-00-4	4-Bromofluorobenzene	101% 58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-2, JD72282-4

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	500	ug/kg	
71-43-2	Benzene	ND	25	ug/kg	
108-86-1	Bromobenzene	ND	250	ug/kg	
74-97-5	Bromochloromethane	ND	250	ug/kg	
75-27-4	Bromodichloromethane	ND	100	ug/kg	
75-25-2	Bromoform	ND	250	ug/kg	
74-83-9	Bromomethane	ND	250	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	ug/kg	
104-51-8	n-Butylbenzene	ND	100	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	ug/kg	
75-15-0	Carbon disulfide	ND	100	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	ug/kg	
108-90-7	Chlorobenzene	ND	100	ug/kg	
75-00-3	Chloroethane	ND	250	ug/kg	
67-66-3	Chloroform	ND	100	ug/kg	
74-87-3	Chloromethane	ND	250	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	ug/kg	
108-20-3	Di-Isopropyl ether	ND	100	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	ug/kg	
124-48-1	Dibromochloromethane	ND	100	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-2, JD72282-4

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	100	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	ug/kg	
123-91-1	1,4-Dioxane	ND	6300	ug/kg	
60-29-7	Ethyl Ether	ND	100	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	ug/kg	
591-78-6	2-Hexanone	ND	250	ug/kg	
98-82-8	Isopropylbenzene	ND	100	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg	
74-95-3	Methylene bromide	ND	250	ug/kg	
75-09-2	Methylene chloride	ND	250	ug/kg	
91-20-3	Naphthalene	ND	250	ug/kg	
103-65-1	n-Propylbenzene	ND	100	ug/kg	
100-42-5	Styrene	ND	100	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	100	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	ug/kg	
127-18-4	Tetrachloroethene	ND	100	ug/kg	
109-99-9	Tetrahydrofuran	ND	500	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	ug/kg	
79-01-6	Trichloroethene	ND	50	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	ug/kg	
75-01-4	Vinyl chloride	ND	100	ug/kg	
	m,p-Xylene	ND	50	ug/kg	
95-47-6	o-Xylene	ND	50	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-2, JD72282-4

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	99%	80-124%
17060-07-0	1,2-Dichloroethane-D4	95%	75-133%
2037-26-5	Toluene-D8	100%	79-125%
460-00-4	4-Bromofluorobenzene	93%	58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	1.29	640	ug/kg	J
	system artifact	1.82	460	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-3

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	ND	2.0	ug/kg	
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-3

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	2.7	5.0	ug/kg	J
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

Method Blank Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-3

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	113%	80-124%
17060-07-0	1,2-Dichloroethane-D4	90%	75-133%
2037-26-5	Toluene-D8	109%	79-125%
460-00-4	4-Bromofluorobenzene	94%	58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-BS	1C196192.D	1	09/08/23	JN	n/a	n/a	V1C8501
V1C8501-BSD	1C196193.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-1, JD72282-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	362	181* a	342	171* a	6	52-156/12
71-43-2	Benzene	50	46.7	93	47.0	94	1	82-119/10
108-86-1	Bromobenzene	50	47.9	96	50.1	100	4	82-115/10
74-97-5	Bromochloromethane	50	54.7	109	55.4	111	1	82-123/10
75-27-4	Bromodichloromethane	50	43.1	86	43.8	88	2	83-121/10
75-25-2	Bromoform	50	49.6	99	48.9	98	1	74-138/10
74-83-9	Bromomethane	50	47.5	95	46.2	92	3	56-150/12
78-93-3	2-Butanone (MEK)	200	270	135	277	139* b	3	72-138/10
104-51-8	n-Butylbenzene	50	45.2	90	45.3	91	0	81-124/11
135-98-8	sec-Butylbenzene	50	44.5	89	46.2	92	4	78-120/10
98-06-6	tert-Butylbenzene	50	46.5	93	46.6	93	0	78-121/10
75-15-0	Carbon disulfide	50	51.8	104	52.9	106	2	67-131/11
56-23-5	Carbon tetrachloride	50	53.2	106	54.1	108	2	72-130/11
108-90-7	Chlorobenzene	50	47.3	95	46.7	93	1	83-114/10
75-00-3	Chloroethane	50	53.5	107	53.2	106	1	67-141/12
67-66-3	Chloroform	50	52.7	105	52.9	106	0	76-115/10
74-87-3	Chloromethane	50	59.9	120	57.5	115	4	57-141/13
95-49-8	o-Chlorotoluene	50	46.8	94	48.4	97	3	81-118/10
106-43-4	p-Chlorotoluene	50	45.8	92	45.4	91	1	78-117/10
108-20-3	Di-Isopropyl ether	50	61.1	122	62.9	126	3	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	50	40.0	80	39.3	79	2	72-131/11
124-48-1	Dibromochloromethane	50	47.6	95	45.4	91	5	80-128/10
106-93-4	1,2-Dibromoethane	50	51.4	103	51.0	102	1	58-145/10
95-50-1	1,2-Dichlorobenzene	50	44.3	89	46.6	93	5	83-117/10
541-73-1	1,3-Dichlorobenzene	50	44.8	90	45.4	91	1	82-114/10
106-46-7	1,4-Dichlorobenzene	50	46.9	94	50.3	101	7	79-114/10
75-71-8	Dichlorodifluoromethane	50	44.1	88	45.3	91	3	49-146/13
75-34-3	1,1-Dichloroethane	50	57.9	116	59.6	119	3	76-126/10
107-06-2	1,2-Dichloroethane	50	44.6	89	45.0	90	1	76-118/10
75-35-4	1,1-Dichloroethene	50	48.0	96	47.8	96	0	72-125/11
156-59-2	cis-1,2-Dichloroethene	50	51.1	102	52.2	104	2	80-118/10
156-60-5	trans-1,2-Dichloroethene	50	49.2	98	51.2	102	4	76-122/10
78-87-5	1,2-Dichloropropane	50	50.2	100	50.3	101	0	82-123/10
142-28-9	1,3-Dichloropropane	50	51.0	102	49.6	99	3	84-120/10
594-20-7	2,2-Dichloropropane	50	49.9	100	50.5	101	1	66-130/11
563-58-6	1,1-Dichloropropene	50	52.1	104	53.1	106	2	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-BS	1C196192.D	1	09/08/23	JN	n/a	n/a	V1C8501
V1C8501-BSD	1C196193.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-1, JD72282-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	45.3	91	45.2	90	0	83-123/10
10061-02-6	trans-1,3-Dichloropropene	50	49.9	100	48.9	98	2	83-123/10
123-91-1	1,4-Dioxane	1250	1140	91	1220	98	7	64-163/20
60-29-7	Ethyl Ether	50	56.7	113	56.5	113	0	78-131/10
100-41-4	Ethylbenzene	50	47.8	96	47.9	96	0	83-115/10
87-68-3	Hexachlorobutadiene	50	47.4	95	48.5	97	2	65-130/11
591-78-6	2-Hexanone	200	259	130	246	123	5	73-138/10
98-82-8	Isopropylbenzene	50	43.6	87	42.8	86	2	81-122/11
99-87-6	p-Isopropyltoluene	50	45.3	91	47.2	94	4	80-120/10
1634-04-4	Methyl Tert Butyl Ether	50	51.9	104	52.0	104	0	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	216	108	219	110	1	71-138/10
74-95-3	Methylene bromide	50	45.3	91	47.4	95	5	81-122/10
75-09-2	Methylene chloride	50	51.5	103	52.7	105	2	73-122/10
91-20-3	Naphthalene	50	44.7	89	43.8	88	2	71-129/14
103-65-1	n-Propylbenzene	50	44.9	90	45.8	92	2	77-120/10
100-42-5	Styrene	50	47.5	95	46.6	93	2	84-122/10
994-05-8	tert-Amyl Methyl Ether	50	47.5	95	47.7	95	0	77-125/11
637-92-3	tert-Butyl Ethyl Ether	50	60.1	120	60.6	121	1	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	50	50.6	101	48.6	97	4	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	50	46.8	94	48.3	97	3	75-127/10
127-18-4	Tetrachloroethene	50	48.5	97	47.0	94	3	73-125/11
109-99-9	Tetrahydrofuran	50	60.9	122	58.4	117	4	61-136/11
108-88-3	Toluene	50	49.8	100	49.5	99	1	82-118/10
87-61-6	1,2,3-Trichlorobenzene	50	44.3	89	45.7	91	3	68-132/13
120-82-1	1,2,4-Trichlorobenzene	50	46.7	93	49.3	99	5	72-133/12
71-55-6	1,1,1-Trichloroethane	50	51.9	104	54.9	110	6	77-124/11
79-00-5	1,1,2-Trichloroethane	50	50.4	101	48.8	98	3	83-122/10
79-01-6	Trichloroethene	50	45.2	90	47.9	96	6	80-122/10
75-69-4	Trichlorofluoromethane	50	48.1	96	49.8	100	3	69-132/11
96-18-4	1,2,3-Trichloropropane	50	51.7	103	51.0	102	1	80-120/10
95-63-6	1,2,4-Trimethylbenzene	50	45.8	92	47.5	95	4	80-119/10
108-67-8	1,3,5-Trimethylbenzene	50	45.8	92	47.5	95	4	79-120/10
75-01-4	Vinyl chloride	50	55.0	110	56.7	113	3	60-144/13
	m,p-Xylene	100	98.0	98	96.2	96	2	82-119/10
95-47-6	o-Xylene	50	47.4	95	48.0	96	1	84-120/10
1330-20-7	Xylene (total)	150	145	97	144	96	1	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-BS	1C196192.D	1	09/08/23	JN	n/a	n/a	V1C8501
V1C8501-BSD	1C196193.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-1, JD72282-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	109%	80-124%
17060-07-0	1,2-Dichloroethane-D4	97%	99%	75-133%
2037-26-5	Toluene-D8	112%	106%	79-125%
460-00-4	4-Bromofluorobenzene	97%	100%	58-148%

- (a) Outside in house control limits.
- (b) High percent recovery and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-2, JD72282-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10000	11800	118	13600	136	14* a	52-156/12
71-43-2	Benzene	2500	2280	91	2300	92	1	82-119/10
108-86-1	Bromobenzene	2500	2310	92	2330	93	1	82-115/10
74-97-5	Bromochloromethane	2500	2390	96	2410	96	1	82-123/10
75-27-4	Bromodichloromethane	2500	2200	88	2260	90	3	83-121/10
75-25-2	Bromoform	2500	2370	95	2450	98	3	74-138/10
74-83-9	Bromomethane	2500	2660	106	2820	113	6	56-150/12
78-93-3	2-Butanone (MEK)	10000	10800	108	11900	119	10	72-138/10
104-51-8	n-Butylbenzene	2500	2330	93	2340	94	0	81-124/11
135-98-8	sec-Butylbenzene	2500	2310	92	2310	92	0	78-120/10
98-06-6	tert-Butylbenzene	2500	2330	93	2360	94	1	78-121/10
75-15-0	Carbon disulfide	2500	2300	92	2370	95	3	67-131/11
56-23-5	Carbon tetrachloride	2500	2270	91	2330	93	3	72-130/11
108-90-7	Chlorobenzene	2500	2290	92	2310	92	1	83-114/10
75-00-3	Chloroethane	2500	2570	103	2640	106	3	67-141/12
67-66-3	Chloroform	2500	2070	83	2110	84	2	76-115/10
74-87-3	Chloromethane	2500	2180	87	2130	85	2	57-141/13
95-49-8	o-Chlorotoluene	2500	2290	92	2300	92	0	81-118/10
106-43-4	p-Chlorotoluene	2500	2280	91	2290	92	0	78-117/10
108-20-3	Di-Isopropyl ether	2500	2260	90	2260	90	0	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	2500	2230	89	2370	95	6	72-131/11
124-48-1	Dibromochloromethane	2500	2280	91	2360	94	3	80-128/10
106-93-4	1,2-Dibromoethane	2500	2300	92	2370	95	3	58-145/10
95-50-1	1,2-Dichlorobenzene	2500	2370	95	2380	95	0	83-117/10
541-73-1	1,3-Dichlorobenzene	2500	2360	94	2350	94	0	82-114/10
106-46-7	1,4-Dichlorobenzene	2500	2270	91	2250	90	1	79-114/10
75-71-8	Dichlorodifluoromethane	2500	2390	96	2340	94	2	49-146/13
75-34-3	1,1-Dichloroethane	2500	2260	90	2290	92	1	76-126/10
107-06-2	1,2-Dichloroethane	2500	2080	83	2160	86	4	76-118/10
75-35-4	1,1-Dichloroethene	2500	2380	95	2420	97	2	72-125/11
156-59-2	cis-1,2-Dichloroethene	2500	2320	93	2390	96	3	80-118/10
156-60-5	trans-1,2-Dichloroethene	2500	2260	90	2300	92	2	76-122/10
78-87-5	1,2-Dichloropropane	2500	2280	91	2300	92	1	82-123/10
142-28-9	1,3-Dichloropropane	2500	2280	91	2330	93	2	84-120/10
594-20-7	2,2-Dichloropropane	2500	2190	88	2230	89	2	66-130/11
563-58-6	1,1-Dichloropropene	2500	2310	92	2380	95	3	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-2, JD72282-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	2500	2320	93	2350	94	1	83-123/10
10061-02-6	trans-1,3-Dichloropropene	2500	2320	93	2340	94	1	83-123/10
123-91-1	1,4-Dioxane	62500	77400	124	80400	129	4	64-163/20
60-29-7	Ethyl Ether	2500	2330	93	2380	95	2	78-131/10
100-41-4	Ethylbenzene	2500	2290	92	2340	94	2	83-115/10
87-68-3	Hexachlorobutadiene	2500	2170	87	2200	88	1	65-130/11
591-78-6	2-Hexanone	10000	9650	97	10700	107	10	73-138/10
98-82-8	Isopropylbenzene	2500	2330	93	2370	95	2	81-122/11
99-87-6	p-Isopropyltoluene	2500	2340	94	2340	94	0	80-120/10
1634-04-4	Methyl Tert Butyl Ether	2500	2340	94	2470	99	5	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	10000	9320	93	10100	101	8	71-138/10
74-95-3	Methylene bromide	2500	2210	88	2270	91	3	81-122/10
75-09-2	Methylene chloride	2500	2130	85	2160	86	1	73-122/10
91-20-3	Naphthalene	2500	2050	82	2260	90	10	71-129/14
103-65-1	n-Propylbenzene	2500	2250	90	2280	91	1	77-120/10
100-42-5	Styrene	2500	2440	98	2480	99	2	84-122/10
994-05-8	tert-Amyl Methyl Ether	2500	2340	94	2430	97	4	77-125/11
637-92-3	tert-Butyl Ethyl Ether	2500	2260	90	2330	93	3	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	2500	2370	95	2460	98	4	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	2500	2210	88	2240	90	1	75-127/10
127-18-4	Tetrachloroethene	2500	2200	88	2230	89	1	73-125/11
109-99-9	Tetrahydrofuran	2500	2030	81	2180	87	7	61-136/11
108-88-3	Toluene	2500	2240	90	2280	91	2	82-118/10
87-61-6	1,2,3-Trichlorobenzene	2500	2100	84	2240	90	6	68-132/13
120-82-1	1,2,4-Trichlorobenzene	2500	2240	90	2310	92	3	72-133/12
71-55-6	1,1,1-Trichloroethane	2500	2190	88	2240	90	2	77-124/11
79-00-5	1,1,2-Trichloroethane	2500	2220	89	2290	92	3	83-122/10
79-01-6	Trichloroethene	2500	2290	92	2360	94	3	80-122/10
75-69-4	Trichlorofluoromethane	2500	2220	89	2240	90	1	69-132/11
96-18-4	1,2,3-Trichloropropane	2500	2160	86	2300	92	6	80-120/10
95-63-6	1,2,4-Trimethylbenzene	2500	2190	88	2210	88	1	80-119/10
108-67-8	1,3,5-Trimethylbenzene	2500	2270	91	2280	91	0	79-120/10
75-01-4	Vinyl chloride	2500	2480	99	2580	103	4	60-144/13
	m,p-Xylene	5000	4670	93	4770	95	2	82-119/10
95-47-6	o-Xylene	2500	2330	93	2400	96	3	84-120/10
1330-20-7	Xylene (total)	7500	7000	93	7160	95	2	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-2, JD72282-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	102%	80-124%
17060-07-0	1,2-Dichloroethane-D4	93%	94%	75-133%
2037-26-5	Toluene-D8	99%	99%	79-125%
460-00-4	4-Bromofluorobenzene	91%	90%	58-148%

(a) Outside in house control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	364	182* a	335	168* a	8	52-156/12
71-43-2	Benzene	50	43.0	86	46.4	93	8	82-119/10
108-86-1	Bromobenzene	50	44.4	89	46.1	92	4	82-115/10
74-97-5	Bromochloromethane	50	55.0	110	56.0	112	2	82-123/10
75-27-4	Bromodichloromethane	50	40.0	80* b	42.6	85	6	83-121/10
75-25-2	Bromoform	50	46.8	94	47.7	95	2	74-138/10
74-83-9	Bromomethane	50	46.0	92	48.0	96	4	56-150/12
78-93-3	2-Butanone (MEK)	200	271	136	255	128	6	72-138/10
104-51-8	n-Butylbenzene	50	40.1	80* b	42.1	84	5	81-124/11
135-98-8	sec-Butylbenzene	50	40.3	81	40.5	81	0	78-120/10
98-06-6	tert-Butylbenzene	50	41.6	83	42.7	85	3	78-121/10
75-15-0	Carbon disulfide	50	51.9	104	53.0	106	2	67-131/11
56-23-5	Carbon tetrachloride	50	49.4	99	52.1	104	5	72-130/11
108-90-7	Chlorobenzene	50	45.1	90	47.2	94	5	83-114/10
75-00-3	Chloroethane	50	53.2	106	54.1	108	2	67-141/12
67-66-3	Chloroform	50	51.3	103	52.6	105	3	76-115/10
74-87-3	Chloromethane	50	54.2	108	55.4	111	2	57-141/13
95-49-8	o-Chlorotoluene	50	43.7	87	42.9	86	2	81-118/10
106-43-4	p-Chlorotoluene	50	42.8	86	42.6	85	0	78-117/10
108-20-3	Di-Isopropyl ether	50	55.2	110	58.0	116	5	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	50	35.0	70* c	37.4	75	7	72-131/11
124-48-1	Dibromochloromethane	50	44.2	88	45.6	91	3	80-128/10
106-93-4	1,2-Dibromoethane	50	48.5	97	48.8	98	1	58-145/10
95-50-1	1,2-Dichlorobenzene	50	41.1	82* b	45.7	91	11* d	83-117/10
541-73-1	1,3-Dichlorobenzene	50	42.2	84	43.1	86	2	82-114/10
106-46-7	1,4-Dichlorobenzene	50	43.9	88	45.4	91	3	79-114/10
75-71-8	Dichlorodifluoromethane	50	43.7	87	45.7	91	4	49-146/13
75-34-3	1,1-Dichloroethane	50	54.8	110	56.7	113	3	76-126/10
107-06-2	1,2-Dichloroethane	50	39.3	79	42.1	84	7	76-118/10
75-35-4	1,1-Dichloroethene	50	47.7	95	50.6	101	6	72-125/11
156-59-2	cis-1,2-Dichloroethene	50	52.7	105	51.9	104	2	80-118/10
156-60-5	trans-1,2-Dichloroethene	50	49.0	98	49.5	99	1	76-122/10
78-87-5	1,2-Dichloropropane	50	45.3	91	49.2	98	8	82-123/10
142-28-9	1,3-Dichloropropane	50	46.1	92	49.6	99	7	84-120/10
594-20-7	2,2-Dichloropropane	50	48.4	97	48.3	97	0	66-130/11
563-58-6	1,1-Dichloropropene	50	47.5	95	50.7	101	7	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	40.2	80* b	44.7	89	11* d	83-123/10
10061-02-6	trans-1,3-Dichloropropene	50	45.5	91	47.5	95	4	83-123/10
123-91-1	1,4-Dioxane	1250	1220	98	1280	102	5	64-163/20
60-29-7	Ethyl Ether	50	55.6	111	54.0	108	3	78-131/10
100-41-4	Ethylbenzene	50	44.0	88	47.2	94	7	83-115/10
87-68-3	Hexachlorobutadiene	50	44.8	90	47.2	94	5	65-130/11
591-78-6	2-Hexanone	200	218	109	228	114	4	73-138/10
98-82-8	Isopropylbenzene	50	41.6	83	41.2	82	1	81-122/11
99-87-6	p-Isopropyltoluene	50	40.1	80	43.9	88	9	80-120/10
1634-04-4	Methyl Tert Butyl Ether	50	51.7	103	52.0	104	1	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	179	90	184	92	3	71-138/10
74-95-3	Methylene bromide	50	42.6	85	46.0	92	8	81-122/10
75-09-2	Methylene chloride	50	52.5	105	53.3	107	2	73-122/10
91-20-3	Naphthalene	50	38.5	77	42.0	84	9	71-129/14
103-65-1	n-Propylbenzene	50	40.2	80	41.1	82	2	77-120/10
100-42-5	Styrene	50	42.9	86	47.7	95	11* d	84-122/10
994-05-8	tert-Amyl Methyl Ether	50	43.6	87	47.4	95	8	77-125/11
637-92-3	tert-Butyl Ethyl Ether	50	58.3	117	59.1	118	1	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	50	47.0	94	49.7	99	6	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	50	41.5	83	44.9	90	8	75-127/10
127-18-4	Tetrachloroethene	50	44.4	89	49.7	99	11	73-125/11
109-99-9	Tetrahydrofuran	50	48.9	98	49.1	98	0	61-136/11
108-88-3	Toluene	50	46.6	93	48.6	97	4	82-118/10
87-61-6	1,2,3-Trichlorobenzene	50	41.3	83	44.2	88	7	68-132/13
120-82-1	1,2,4-Trichlorobenzene	50	43.3	87	47.2	94	9	72-133/12
71-55-6	1,1,1-Trichloroethane	50	50.5	101	53.7	107	6	77-124/11
79-00-5	1,1,2-Trichloroethane	50	46.7	93	47.9	96	3	83-122/10
79-01-6	Trichloroethene	50	42.6	85	47.1	94	10	80-122/10
75-69-4	Trichlorofluoromethane	50	47.9	96	49.8	100	4	69-132/11
96-18-4	1,2,3-Trichloropropane	50	46.2	92	45.3	91	2	80-120/10
95-63-6	1,2,4-Trimethylbenzene	50	43.8	88	44.6	89	2	80-119/10
108-67-8	1,3,5-Trimethylbenzene	50	42.1	84	41.4	83	2	79-120/10
75-01-4	Vinyl chloride	50	51.5	103	54.6	109	6	60-144/13
	m,p-Xylene	100	88.9	89	92.3	92	4	82-119/10
95-47-6	o-Xylene	50	42.9	86	48.8	98	13* d	84-120/10
1330-20-7	Xylene (total)	150	132	88	141	94	7	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72282-3

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	115%	113%	80-124%
17060-07-0	1,2-Dichloroethane-D4	91%	94%	75-133%
2037-26-5	Toluene-D8	105%	107%	79-125%
460-00-4	4-Bromofluorobenzene	94%	94%	58-148%

- (a) High percent recovery and no associated positive reported in the QC batch.
- (b) Outside of in house control limits, but within reasonable method recovery limits.
- (c) Outside of in house control limits, but within the marginal exceedance limits.
- (d) Outside in house control limits.

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V1C8501-CC8418	Injection Date: 09/08/23
Lab File ID: 1C196191.D	Injection Time: 09:53
Instrument ID: GCMS1C	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	102459	7.10	345431	9.34	501749	10.25	389140	13.41	192282	15.74
Upper Limit ^a	204918	7.60	690862	9.84	1003498	10.75	778280	13.91	384564	16.24
Lower Limit ^b	51230	6.60	172716	8.84	250875	9.75	194570	12.91	96141	15.24

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V1C8501-BS	108564	7.10	352298	9.34	504408	10.25	391369	13.41	206557	15.73
V1C8501-BSD	104806	7.10	351961	9.34	499631	10.25	410009	13.41	206711	15.73
V1C8501-MB	103678	7.09	372136	9.34	522475	10.25	420067	13.41	203282	15.73
JD72365-1	110176	7.09	377292	9.34	516394	10.25	426789	13.41	211278	15.73
JD72365-2	104111	7.09	342823	9.34	490085	10.25	380338	13.41	178580	15.73
ZZZZZZ	101359	7.10	363628	9.34	504040	10.25	395942	13.41	198528	15.74
ZZZZZZ	112426	7.09	343435	9.34	475203	10.25	393721	13.41	192890	15.73
ZZZZZZ	74704	7.09	340634	9.34	495601	10.25	389292	13.41	185258	15.73
JD72365-1MS	108108	7.10	345939	9.34	491174	10.25	400667	13.41	203405	15.73
JD72365-2DUP	105102	7.09	356632	9.34	502104	10.25	390203	13.41	169632	15.73
ZZZZZZ	93695	7.10	356274	9.34	499601	10.25	401291	13.41	198593	15.73
JD72282-1	106670	7.09	354552	9.34	497177	10.26	412328	13.41	202491	15.73
JD72282-4	110428	7.10	365920	9.34	520917	10.25	416736	13.41	209124	15.73
ZZZZZZ	112135	7.09	353731	9.34	533019	10.25	431672	13.41	210756	15.73

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1C8503-CC8418	Injection Date:	09/12/23
Lab File ID:	1C196254.D	Injection Time:	09:48
Instrument ID:	GCMS1C	Method:	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	119196	7.09	432044	9.34	639510	10.25	488318	13.41	253637	15.73
Upper Limit ^a	238392	7.59	864088	9.84	1279020	10.75	976636	13.91	507274	16.23
Lower Limit ^b	59598	6.59	216022	8.84	319755	9.75	244159	12.91	126819	15.23

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V1C8503-BS	128004	7.10	432297	9.34	643251	10.25	498401	13.41	263144	15.73
V1C8503-BSD	123998	7.09	436540	9.34	627853	10.25	500852	13.41	264829	15.73
V1C8503-MB	128509	7.09	449216	9.34	655914	10.25	513903	13.41	258024	15.73
JD72387-1	132691	7.10	454597	9.34	681243	10.25	529268	13.41	257886	15.73
JD72387-2	123598	7.09	418695	9.34	626551	10.25	486718	13.41	234579	15.73
ZZZZZZ	120730	7.10	439264	9.34	639266	10.25	522632	13.41	250993	15.73
ZZZZZZ	123726	7.09	428376	9.34	636215	10.25	514685	13.41	245974	15.73
ZZZZZZ	108374	7.10	428819	9.34	647262	10.25	520430	13.41	261790	15.74
JD72387-2MS	119305	7.09	424036	9.34	635574	10.25	501729	13.41	262759	15.73
JD72387-1DUP	174111	7.09	432273	9.34	657772	10.25	554272	13.41	270961	15.73
JD72282-3	112789	7.09	423863	9.34	623792	10.25	523837	13.41	247400	15.73
ZZZZZZ	118944	7.09	428863	9.34	621363	10.25	507456	13.41	244485	15.73
ZZZZZZ	128903	7.09	458794	9.34	673149	10.25	526424	13.41	268607	15.73
ZZZZZZ	117876	7.10	432784	9.34	642103	10.25	543173	13.41	269317	15.73
ZZZZZZ	135021	7.09	442960	9.34	653801	10.25	543636	13.41	281014	15.73
ZZZZZZ	126281	7.10	427863	9.34	625418	10.25	540569	13.41	247576	15.73
ZZZZZZ	118047	7.10	435290	9.34	635750	10.25	532475	13.41	258952	15.73
ZZZZZZ	116435	7.10	430266	9.34	637882	10.25	502308	13.41	251007	15.73
ZZZZZZ	122830	7.09	441905	9.34	648800	10.25	508321	13.41	261432	15.73
ZZZZZZ	119874	7.10	420290	9.34	622985	10.25	494364	13.41	243325	15.74
V1C8504-BS	115540	7.09	411123	9.34	621562	10.25	514242	13.41	246546	15.73

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V3D8040-CC8035	Injection Date: 09/11/23
Lab File ID: 3D192340.D	Injection Time: 10:06
Instrument ID: GCMS3D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	219654	2.69	473501	3.86	936346	4.40	822400	6.76	357652	8.94
Upper Limit ^a	439308	3.19	947002	4.36	1872692	4.90	1644800	7.26	715304	9.44
Lower Limit ^b	109827	2.19	236751	3.36	468173	3.90	411200	6.26	178826	8.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3D8040-BS	200567	2.69	501181	3.86	979814	4.40	848470	6.76	381428	8.93
V3D8040-BSD	223652	2.69	499718	3.86	987889	4.40	860330	6.76	392502	8.94
V3D8040-MB	189806	2.70	468595	3.86	908102	4.40	788227	6.76	339045	8.93
ZZZZZZ	189806	2.70	468595	3.86	908102	4.40	788227	6.76	339045	8.93
ZZZZZZ	210591	2.70	464373	3.86	912403	4.40	785858	6.76	339641	8.93
ZZZZZZ	204100	2.70	470392	3.86	924637	4.40	796333	6.76	340938	8.94
ZZZZZZ	196527	2.70	470197	3.86	917133	4.40	795337	6.76	345236	8.94
ZZZZZZ	183450	2.70	455833	3.86	892060	4.40	771215	6.76	334599	8.94
JD72282-2	197966	2.70	459384	3.86	893449	4.40	767712	6.76	335284	8.94
JD72282-4 ^c	185942	2.70	453640	3.86	894251	4.40	778086	6.76	337040	8.94
ZZZZZZ	185390	2.70	447510	3.86	880099	4.40	766567	6.76	335519	8.94
JD72452-1	200045	2.70	475242	3.86	932141	4.40	807827	6.76	350422	8.94
ZZZZZZ	195999	2.70	452173	3.86	888835	4.40	775432	6.76	343414	8.94
ZZZZZZ	199050	2.70	451147	3.86	887320	4.40	771551	6.76	348145	8.93
ZZZZZZ	171175	2.70	444880	3.86	877906	4.40	762275	6.76	337740	8.94
ZZZZZZ	207342	2.70	456367	3.86	897277	4.40	782487	6.76	352638	8.94
ZZZZZZ	229081	2.70	484173	3.86	962037	4.40	859496	6.76	392865	8.94
JD72452-1MS	234300	2.70	526064	3.86	1033237	4.40	886238	6.76	412824	8.94
JD72452-1MSD	251445	2.71	526987	3.86	1017477	4.40	880115	6.76	416542	8.94
ZZZZZZ	193059	2.70	489300	3.86	953724	4.40	831040	6.76	370309	8.94
ZZZZZZ	162134	2.70	487662	3.86	934482	4.40	812683	6.76	353031	8.94
ZZZZZZ	163580	2.70	491823	3.86	924386	4.40	797297	6.76	353221	8.94
ZZZZZZ	154948	2.70	488530	3.86	912673	4.40	792362	6.76	353630	8.94
ZZZZZZ	151895	2.70	492420	3.86	914440	4.40	799580	6.76	361260	8.94
ZZZZZZ	169533	2.70	477839	3.86	897310	4.40	771883	6.76	334979	8.94
ZZZZZZ	173204	2.70	474539	3.86	881042	4.40	767322	6.76	343636	8.94
ZZZZZZ	159577	2.70	478415	3.86	885758	4.40	772683	6.76	342552	8.94

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

Internal Standard Area Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V3D8040-CC8035	Injection Date: 09/11/23
Lab File ID: 3D192340.D	Injection Time: 10:06
Instrument ID: GCMS3D	Method: SW846 8260D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

- (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
- (c) Dilution required due to high concentration of target compound.

6.3.3
6

Surrogate Recovery Summary

Job Number: JD72282
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: SO
----------------------------	-------------------

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD72282-1	1C196207.D	110	103	107	101
JD72282-2	3D192349.D	97	93	100	93
JD72282-3	1C196268.D	112	88	103	97
JD72282-4	3D192350.D	99	94	98	93
JD72282-4	1C196208.D	112	102	105	99
V1C8501-BS	1C196192.D	109	97	112	97
V1C8501-BSD	1C196193.D	109	99	106	100
V1C8501-MB	1C196196.D	109	97	106	101
V1C8503-BS	1C196256.D	115	91	105	94
V1C8503-BSD	1C196257.D	113	94	107	94
V1C8503-MB	1C196259.D	113	90	109	94
V3D8040-BS	3D192341.D	100	93	99	91
V3D8040-BSD	3D192342.D	102	94	99	90
V3D8040-MB	3D192344.D	99	95	100	93

Surrogate Compounds	Recovery Limits
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S1 = Dibromofluoromethane	80-124%
S2 = 1,2-Dichloroethane-D4	75-133%
S3 = Toluene-D8	79-125%
S4 = 4-Bromofluorobenzene	58-148%

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS105.A.CS.EV.01.78

SGS Job Number: JD72373

Sampling Dates: 09/06/23 - 09/07/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorette@jacobs.com; Bernice.Kidd@jacobs.com

ATTN: Raymond J. Cadorette

Total number of pages in report: **73**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

A handwritten signature in blue ink, appearing to read 'D. Chastain'.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200
Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD72373

Varian, Beverly, MA

Project No: VARMS105.A.CS.EV.01.78

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD72373-1	09/06/23	16:45 DK	09/07/23	SO	Soil	SB504_20230906_46-47_N_SO
JD72373-2	09/07/23	09:05 DK	09/07/23	SO	Soil	SB504_20230907_51-52_N_SO
JD72373-3	09/07/23	15:20	09/07/23	SO	Trip Blank Methanol	TB-20230907_SO_02M
JD72373-4	09/07/23	15:20	09/07/23	SO	Trip Blank Soil	TB-20230907_SO_02L
JD72373-5	09/07/23	15:20 DK	09/07/23	SO	Soil	SB501_20230907_24-25_N_SO

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD72373

Site: Varian, Beverly, MA

Report Date 9/18/2023 4:37:08 PM

On 09/07/2023, 3 sample(s), 2 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 0.9 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD72373 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: SO

Batch ID: VIC8501

- All samples were analyzed within the recommended method holding time.
- Sample(s) JD72373-1 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- The blank spike (BS) recovery(s) of Acetone are outside control limits.
- JD72373-1 for Di-Isopropyl ether: Associated CCV outside of control limits high, sample was ND.
- VIC8501-BS for Acetone: Outside in house control limits.
- JD72373-4 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.
- JD72373-4 for Chloromethane: Associated CCV outside of control limits high, sample was ND.
- JD72373-4 for Di-Isopropyl ether: Associated CCV outside of control limits high, sample was ND.
- JD72373-4 for tert-Butyl Ethyl Ether: Associated CCV outside of control limits high, sample was ND.
- JD72373-4 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD72373-4 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72373-1 for Chloromethane: Associated CCV outside of control limits high, sample was ND.
- JD72373-1 for tert-Butyl Ethyl Ether: Associated CCV outside of control limits high, sample was ND.
- JD72373-1 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD72373-1 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72373-1 for 2-Hexanone: Associated CCV outside of control limits high, sample was ND.

Matrix: SO

Batch ID: VIC8503

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Acetone, 1,2-Dichlorobenzene, Bromodichloromethane, cis-1,3-Dichloropropene, n-Butylbenzene, 1,2-Dibromo-3-chloropropane are outside control limits.
- VIC8503-BSD for Styrene: Outside in house control limits.
- JD72373-5 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72373-2 for 1,2-Dichloroethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

Monday, September 18, 2023

Page 1 of 2

MS Volatiles By Method SW846 8260D

Matrix: SO

Batch ID: VIC8503

- JD72373-5 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- VIC8503-BS for Bromodichloromethane: Outside of in house control limits, but within reasonable method recovery limits.
- JD72373-2 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72373-2 for 1,2-Dibromo-3-chloropropane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- VIC8503-BSD for o-Xylene: Outside in house control limits.
- VIC8503-BSD for cis-1,3-Dichloropropene: Outside in house control limits.
- JD72373-5 for 1,2-Dibromo-3-chloropropane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- VIC8503-BSD for 1,2-Dichlorobenzene: Outside in house control limits.
- JD72373-5 for 1,2-Dichloroethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- VIC8503-BS for 1,2-Dibromo-3-chloropropane: Outside of in house control limits, but within the marginal exceedance limits.
- VIC8503-BS for n-Butylbenzene: Outside of in house control limits, but within reasonable method recovery limits.
- VIC8503-BS for cis-1,3-Dichloropropene: Outside of in house control limits, but within reasonable method recovery limits.
- VIC8503-BS for Acetone: High percent recovery and no associated positive reported in the QC batch.
- VIC8503-BS for 1,2-Dichlorobenzene: Outside of in house control limits, but within reasonable method recovery limits.
- JD72373-2 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.

Matrix: SO

Batch ID: V3D8039

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- V3D8039-BSD for 1,2-Dibromo-3-chloropropane: Outside in house control limits.
- JD72373-3 for Di-Isopropyl ether: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD72373-3 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high.

Matrix: SO

Batch ID: V3D8040

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO

Batch ID: GN45784

- The data for SM2540 G 18TH ED MOD meets quality control requirements.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Monday, September 18, 2023

Page 2 of 2

Summary of Hits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD72373-1 SB504_20230906_46-47_N_SO

Acetone ^a	62.6	9.4		ug/kg	SW846 8260D
Chloroform	14.8 B	1.9		ug/kg	SW846 8260D
1,1-Dichloroethene	1.1	0.94		ug/kg	SW846 8260D
cis-1,2-Dichloroethene	434	52		ug/kg	SW846 8260D
Tetrachloroethene	122	1.9		ug/kg	SW846 8260D
Trichloroethene	3290	52		ug/kg	SW846 8260D

JD72373-2 SB504_20230907_51-52_N_SO

Acetone ^b	14.7	9.6		ug/kg	SW846 8260D
Carbon disulfide	1.9	1.9		ug/kg	SW846 8260D
cis-1,2-Dichloroethene	8.9	0.96		ug/kg	SW846 8260D

JD72373-3 TB-20230907_SO_02M

No hits reported in this sample.

JD72373-4 TB-20230907_SO_02L

Acetone ^a	27.5	10		ug/kg	SW846 8260D
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JD72373-5 SB501_20230907_24-25_N_SO

Tetrachloroethene	5.9	1.6		ug/kg	SW846 8260D
Trichloroethene	1.6	0.79		ug/kg	SW846 8260D

(a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.

(b) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: SB504_20230906_46-47_N_SO	Date Sampled: 09/06/23
Lab Sample ID: JD72373-1	Date Received: 09/07/23
Matrix: SO - Soil	Percent Solids: 87.6
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196209.D	1	09/08/23 17:52	JN	n/a	n/a	V1C8501
Run #2	3D192351.D	1	09/11/23 15:10	JN	n/a	n/a	V3D8040

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.1 g		
Run #2	12.8 g	10.0 ml	100 ul

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	62.6	9.4	ug/kg	
71-43-2	Benzene	ND	0.47	ug/kg	
108-86-1	Bromobenzene	ND	4.7	ug/kg	
74-97-5	Bromochloromethane	ND	4.7	ug/kg	
75-27-4	Bromodichloromethane	ND	1.9	ug/kg	
75-25-2	Bromoform	ND	4.7	ug/kg	
74-83-9	Bromomethane	ND	4.7	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	9.4	ug/kg	
104-51-8	n-Butylbenzene	ND	1.9	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.9	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.9	ug/kg	
75-15-0	Carbon disulfide	ND	1.9	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.9	ug/kg	
108-90-7	Chlorobenzene	ND	1.9	ug/kg	
75-00-3	Chloroethane	ND	4.7	ug/kg	
67-66-3	Chloroform	14.8	1.9	ug/kg	B
74-87-3	Chloromethane ^c	ND	4.7	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.9	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.9	ug/kg	
108-20-3	Di-Isopropyl ether ^c	ND	1.9	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.9	ug/kg	
124-48-1	Dibromochloromethane	ND	1.9	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.94	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.94	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.94	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.94	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.7	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.94	ug/kg	
107-06-2	1,2-Dichloroethane	ND	0.94	ug/kg	
75-35-4	1,1-Dichloroethene	1.1	0.94	ug/kg	
156-59-2	cis-1,2-Dichloroethene	434 ^d	52	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.94	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: SB504_20230906_46-47_N_SO

Lab Sample ID: JD72373-1

Matrix: SO - Soil

Method: SW846 8260D

Project: Varian, Beverly, MA

Date Sampled: 09/06/23

Date Received: 09/07/23

Percent Solids: 87.6

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.9	ug/kg	
142-28-9	1,3-Dichloropropane	ND	1.9	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.9	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.9	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	ug/kg	
123-91-1	1,4-Dioxane	ND	120	ug/kg	
60-29-7	Ethyl Ether	ND	1.9	ug/kg	
100-41-4	Ethylbenzene	ND	0.94	ug/kg	
87-68-3	Hexachlorobutadiene	ND	4.7	ug/kg	
591-78-6	2-Hexanone ^c	ND	4.7	ug/kg	
98-82-8	Isopropylbenzene	ND	1.9	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.9	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.94	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.7	ug/kg	
74-95-3	Methylene bromide	ND	4.7	ug/kg	
75-09-2	Methylene chloride	ND	4.7	ug/kg	
91-20-3	Naphthalene	ND	4.7	ug/kg	
103-65-1	n-Propylbenzene	ND	1.9	ug/kg	
100-42-5	Styrene	ND	1.9	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	1.9	ug/kg	
637-92-3	tert-Butyl Ethyl Ether ^c	ND	1.9	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.9	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	ug/kg	
127-18-4	Tetrachloroethene	122	1.9	ug/kg	
109-99-9	Tetrahydrofuran	ND	9.4	ug/kg	
108-88-3	Toluene	ND	0.94	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.7	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.7	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.9	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.9	ug/kg	
79-01-6	Trichloroethene	3290 ^d	52	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.7	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.7	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	ug/kg	
75-01-4	Vinyl chloride	ND	1.9	ug/kg	
	m,p-Xylene	ND	0.94	ug/kg	
95-47-6	o-Xylene	ND	0.94	ug/kg	
1330-20-7	Xylene (total)	ND	0.94	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB504_20230906_46-47_N_SO	Date Sampled: 09/06/23
Lab Sample ID: JD72373-1	Date Received: 09/07/23
Matrix: SO - Soil	Percent Solids: 87.6
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	116%	101%	80-124%
17060-07-0	1,2-Dichloroethane-D4	99%	96%	75-133%
2037-26-5	Toluene-D8	101%	99%	79-125%
460-00-4	4-Bromofluorobenzene	100%	93%	58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.
- (d) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: SB504_20230907_51-52_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72373-2	Date Received: 09/07/23
Matrix: SO - Soil	Percent Solids: 93.1
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196272.D	1	09/12/23 18:06	JN	n/a	n/a	V1C8503
Run #2							

Run #1	Initial Weight
Run #1	5.6 g
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	14.7	9.6	ug/kg	
71-43-2	Benzene	ND	0.48	ug/kg	
108-86-1	Bromobenzene	ND	4.8	ug/kg	
74-97-5	Bromochloromethane	ND	4.8	ug/kg	
75-27-4	Bromodichloromethane	ND	1.9	ug/kg	
75-25-2	Bromoform	ND	4.8	ug/kg	
74-83-9	Bromomethane	ND	4.8	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	9.6	ug/kg	
104-51-8	n-Butylbenzene	ND	1.9	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.9	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.9	ug/kg	
75-15-0	Carbon disulfide	1.9	1.9	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.9	ug/kg	
108-90-7	Chlorobenzene	ND	1.9	ug/kg	
75-00-3	Chloroethane	ND	4.8	ug/kg	
67-66-3	Chloroform	ND	1.9	ug/kg	
74-87-3	Chloromethane	ND	4.8	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.9	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.9	ug/kg	
108-20-3	Di-Isopropyl ether	ND	1.9	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropan ^c	ND	1.9	ug/kg	
124-48-1	Dibromochloromethane	ND	1.9	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.96	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.96	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.96	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.96	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.8	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.96	ug/kg	
107-06-2	1,2-Dichloroethane ^c	ND	0.96	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.96	ug/kg	
156-59-2	cis-1,2-Dichloroethene	8.9	0.96	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.96	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: SB504_20230907_51-52_N_SO**Lab Sample ID:** JD72373-2**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/07/23**Date Received:** 09/07/23**Percent Solids:** 93.1

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.9	ug/kg	
142-28-9	1,3-Dichloropropane	ND	1.9	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.9	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.9	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.9	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.9	ug/kg	
123-91-1	1,4-Dioxane	ND	120	ug/kg	
60-29-7	Ethyl Ether	ND	1.9	ug/kg	
100-41-4	Ethylbenzene	ND	0.96	ug/kg	
87-68-3	Hexachlorobutadiene	ND	4.8	ug/kg	
591-78-6	2-Hexanone	ND	4.8	ug/kg	
98-82-8	Isopropylbenzene	ND	1.9	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.9	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.96	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.8	ug/kg	
74-95-3	Methylene bromide	ND	4.8	ug/kg	
75-09-2	Methylene chloride	ND	4.8	ug/kg	
91-20-3	Naphthalene	ND	4.8	ug/kg	
103-65-1	n-Propylbenzene	ND	1.9	ug/kg	
100-42-5	Styrene	ND	1.9	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	1.9	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	1.9	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.9	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.9	ug/kg	
127-18-4	Tetrachloroethene	ND	1.9	ug/kg	
109-99-9	Tetrahydrofuran	ND	9.6	ug/kg	
108-88-3	Toluene	ND	0.96	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.8	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.9	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.9	ug/kg	
79-01-6	Trichloroethene	ND	0.96	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.8	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.8	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	ug/kg	
75-01-4	Vinyl chloride	ND	1.9	ug/kg	
	m,p-Xylene	ND	0.96	ug/kg	
95-47-6	o-Xylene	ND	0.96	ug/kg	
1330-20-7	Xylene (total)	ND	0.96	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB504_20230907_51-52_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72373-2	Date Received: 09/07/23
Matrix: SO - Soil	Percent Solids: 93.1
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	118%		80-124%
17060-07-0	1,2-Dichloroethane-D4	99%		75-133%
2037-26-5	Toluene-D8	104%		79-125%
460-00-4	4-Bromofluorobenzene	94%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: TB-20230907_SO_02M	Date Sampled: 09/07/23
Lab Sample ID: JD72373-3	Date Received: 09/07/23
Matrix: SO - Trip Blank Methanol	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D192329.D	1	09/08/23 14:09	JN	n/a	n/a	V3D8039
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	5.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	500	ug/kg	
71-43-2	Benzene	ND	25	ug/kg	
108-86-1	Bromobenzene	ND	250	ug/kg	
74-97-5	Bromochloromethane	ND	250	ug/kg	
75-27-4	Bromodichloromethane	ND	100	ug/kg	
75-25-2	Bromoform	ND	250	ug/kg	
74-83-9	Bromomethane	ND	250	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	ug/kg	
104-51-8	n-Butylbenzene	ND	100	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	ug/kg	
75-15-0	Carbon disulfide	ND	100	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	ug/kg	
108-90-7	Chlorobenzene	ND	100	ug/kg	
75-00-3	Chloroethane	ND	250	ug/kg	
67-66-3	Chloroform	ND	100	ug/kg	
74-87-3	Chloromethane	ND	250	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	ug/kg	
108-20-3	Di-Isopropyl ether ^b	ND	100	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	ug/kg	
124-48-1	Dibromochloromethane	ND	100	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230907_SO_02M**Lab Sample ID:** JD72373-3**Matrix:** SO - Trip Blank Methanol**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/07/23**Date Received:** 09/07/23**Percent Solids:** n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	100	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	100	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	ug/kg	
123-91-1	1,4-Dioxane	ND	6300	ug/kg	
60-29-7	Ethyl Ether	ND	100	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	ug/kg	
591-78-6	2-Hexanone	ND	250	ug/kg	
98-82-8	Isopropylbenzene	ND	100	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg	
74-95-3	Methylene bromide	ND	250	ug/kg	
75-09-2	Methylene chloride	ND	250	ug/kg	
91-20-3	Naphthalene	ND	250	ug/kg	
103-65-1	n-Propylbenzene	ND	100	ug/kg	
100-42-5	Styrene	ND	100	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	100	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	ug/kg	
127-18-4	Tetrachloroethene	ND	100	ug/kg	
109-99-9	Tetrahydrofuran	ND	500	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	ug/kg	
79-01-6	Trichloroethene	ND	50	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	ug/kg	
75-01-4	Vinyl chloride	ND	100	ug/kg	
	m,p-Xylene	ND	50	ug/kg	
95-47-6	o-Xylene	ND	50	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230907_SO_02M		Date Sampled: 09/07/23
Lab Sample ID: JD72373-3		Date Received: 09/07/23
Matrix: SO - Trip Blank Methanol		Percent Solids: n/a
Method: SW846 8260D		
Project: Varian, Beverly, MA		

4.3
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		80-124%
17060-07-0	1,2-Dichloroethane-D4	95%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	90%		58-148%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230907_SO_02L	
Lab Sample ID: JD72373-4	Date Sampled: 09/07/23
Matrix: SO - Trip Blank Soil	Date Received: 09/07/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	1C196206.D	1	09/08/23 16:32	JN	n/a	n/a	V1C8501

Run #1	Initial Weight
Run #2	5.0 g

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	27.5	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	ND	2.0	ug/kg	
74-87-3	Chloromethane ^c	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether ^c	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: TB-20230907_SO_02L
Lab Sample ID: JD72373-4
Matrix: SO - Trip Blank Soil
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 09/07/23
Date Received: 09/07/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone ^c	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	ND	5.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether ^c	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-20230907_SO_02L	Date Sampled: 09/07/23
Lab Sample ID: JD72373-4	Date Received: 09/07/23
Matrix: SO - Trip Blank Soil	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		80-124%
17060-07-0	1,2-Dichloroethane-D4	98%		75-133%
2037-26-5	Toluene-D8	107%		79-125%
460-00-4	4-Bromofluorobenzene	101%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. Response factor for this compound is below 0.05 in the initial and continuing calibrations. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: SB501_20230907_24-25_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72373-5	Date Received: 09/07/23
Matrix: SO - Soil	Percent Solids: 90.7
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196273.D	1	09/12/23 18:33	JN	n/a	n/a	V1C8503
Run #2							

Run #1	Initial Weight
Run #1	7.0 g
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	7.9	ug/kg	
71-43-2	Benzene	ND	0.39	ug/kg	
108-86-1	Bromobenzene	ND	3.9	ug/kg	
74-97-5	Bromochloromethane	ND	3.9	ug/kg	
75-27-4	Bromodichloromethane	ND	1.6	ug/kg	
75-25-2	Bromoform	ND	3.9	ug/kg	
74-83-9	Bromomethane	ND	3.9	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	7.9	ug/kg	
104-51-8	n-Butylbenzene	ND	1.6	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.6	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.6	ug/kg	
75-15-0	Carbon disulfide	ND	1.6	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.6	ug/kg	
108-90-7	Chlorobenzene	ND	1.6	ug/kg	
75-00-3	Chloroethane	ND	3.9	ug/kg	
67-66-3	Chloroform	ND	1.6	ug/kg	
74-87-3	Chloromethane	ND	3.9	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.6	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.6	ug/kg	
108-20-3	Di-Isopropyl ether	ND	1.6	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropan ^c	ND	1.6	ug/kg	
124-48-1	Dibromochloromethane	ND	1.6	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.79	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.79	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.79	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.79	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	3.9	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.79	ug/kg	
107-06-2	1,2-Dichloroethane ^c	ND	0.79	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.79	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.79	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.79	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.5
4

Report of Analysis

Client Sample ID: SB501_20230907_24-25_N_SO**Lab Sample ID:** JD72373-5**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/07/23**Date Received:** 09/07/23**Percent Solids:** 90.7

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.6	ug/kg	
142-28-9	1,3-Dichloropropane	ND	1.6	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.6	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.6	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.6	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.6	ug/kg	
123-91-1	1,4-Dioxane	ND	98	ug/kg	
60-29-7	Ethyl Ether	ND	1.6	ug/kg	
100-41-4	Ethylbenzene	ND	0.79	ug/kg	
87-68-3	Hexachlorobutadiene	ND	3.9	ug/kg	
591-78-6	2-Hexanone	ND	3.9	ug/kg	
98-82-8	Isopropylbenzene	ND	1.6	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.6	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.79	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	3.9	ug/kg	
74-95-3	Methylene bromide	ND	3.9	ug/kg	
75-09-2	Methylene chloride	ND	3.9	ug/kg	
91-20-3	Naphthalene	ND	3.9	ug/kg	
103-65-1	n-Propylbenzene	ND	1.6	ug/kg	
100-42-5	Styrene	ND	1.6	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	1.6	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	1.6	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.6	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.6	ug/kg	
127-18-4	Tetrachloroethene	5.9	1.6	ug/kg	
109-99-9	Tetrahydrofuran	ND	7.9	ug/kg	
108-88-3	Toluene	ND	0.79	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	3.9	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	3.9	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.6	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.6	ug/kg	
79-01-6	Trichloroethene	1.6	0.79	ug/kg	
75-69-4	Trichlorofluoromethane	ND	3.9	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	3.9	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	1.6	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	1.6	ug/kg	
75-01-4	Vinyl chloride	ND	1.6	ug/kg	
	m,p-Xylene	ND	0.79	ug/kg	
95-47-6	o-Xylene	ND	0.79	ug/kg	
1330-20-7	Xylene (total)	ND	0.79	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_24-25_N_SO	
Lab Sample ID: JD72373-5	Date Sampled: 09/07/23
Matrix: SO - Soil	Date Received: 09/07/23
Method: SW846 8260D	Percent Solids: 90.7
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	119%		80-124%
17060-07-0	1,2-Dichloroethane-D4	100%		75-133%
2037-26-5	Toluene-D8	105%		79-125%
460-00-4	4-Bromofluorobenzene	109%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.5
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Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits



CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.sgs.com/ehsusa

EHS-A-QAC-0023-04-FORM-Standard COC

50
smg
TB

FED-EX Tracking #
Boiler Order Control #
SGS Quote # 2013 2439
SGS Job # JD72373

Client / Reporting Information
Project Information
Requested Analysis
Matrix Codes
Company Name: JACOBS ENG
Project Name: VARIAN MEDICAL SYSTEMS
Street Address: 126 ST JAMES AVE
City: BOSTON MA
State: MA
Zip:
Project Contact: BERNICE KIBBE
E-mail: AKOBS.GM
Phone: 520-269-3480
Project #
Client Purchase Order #
City
State
Zip
Samplers Name(s): S. FOX, D. KEARNEY
Project Manager: RAYMOND CARRETE
Attention:
Collection
Number of preserved Bottles
pH Check (Lab Use Only)
LAB USE ONLY

Turn Around Time (Business Days)
Deliverable
Comments / Special Instructions
PLEASE ANALYZE EITHER METHANOL OR LOW-LEVEL VIAL BASED ON PID READINGS AND INSTRUMENT SENSITIVITY. ANKLEY IS SGS Service Center BUT BOTH METRIANAL L Northborough, MA

Relinquished by: [Signature] Date / Time: 9/17/23 19:40
Received By: [Signature] Date / Time: 9/17/23 23:10
Relinquished by: [Signature] Date / Time: 9/17/23 23:10
Received By: [Signature] Date / Time: 9/17/23 23:10
Custody Seal #
Intact
Not intact
Absent
Therm ID
Cooler Temp. °C 12.18-40

Initial Assessment: ACAB
Label Verification

JD72373: Chain of Custody

Page 1 of 4



SGS Sample Receipt Summary

Job Number: JD72373

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 9/7/2023 11:10:00 PM

Delivery Method: SGS COUIRER

Airbill #s:

Cooler Temps (Raw Measured) °C: Cooler 1: (1.2);

Cooler Temps (Corrected) °C: Cooler 1: (0.9);

<u>Cooler Security</u>	<u>Y</u>	<u>or</u>	<u>N</u>		<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. SmpI Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Cooler Temperature</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	IR Gun 40		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

<u>Sample Integrity - Documentation</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

<u>Sample Integrity - Condition</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	Intact		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Test Strip Lot #s:	pH 1-12: 231619	pH 12+: 203117A	Other: (Specify)
--------------------	-----------------	-----------------	------------------

Comments	<p>-3 Received 1x40ml meoh vial and no Di h2o vial</p> <p>-4 Received 2x40ml Di h2o vials and no meoh vial. Please confirm if samples should be combined</p>
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Responded to by: VP

Response Date: 9/8

Analyze separately:
-3: Analyze as MTB
-4: Analyze as SSTB

JD72373: Chain of Custody

Page 3 of 4

Job Change Order: JD72373

Requested Date: 9/11/2023 Received Date: 9/7/2023
Account Name: Jacobs Engineering Due Date: 9/11/2023
Project Description: Varian, Beverly, MA Deliverable: MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 7

Sample #: JD72373-All

Client ID:

Change: Revise TAT to 7-days

Dept:
TAT: 7

JD72373: Chain of Custody
Page 4 of 4

Above Changes Per: Steve Fox Date/Time: 9/12/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM

Exhibit VII A

July 1, 2010

Revision No. 1

Final

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD72373
Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD72373-1,JD72373-2,JD72373-3,JD72373-4,JD72373-5

Matrices: Groundwater/Surface Water () Soil/Sediment (x) Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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 No
- B** Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? Yes No
- 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 No
- 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 No
- E** VPH, EPH, APH, and TO-15 only:
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). Yes No
b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? Yes No
- 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 No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

- G** Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols? Yes No ¹
- Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.
- H** Were all QC performance standards specified in the CAM protocol(s) achieved? Yes No ¹
- I** Were results reported for the complete analyte list specified in the selected CAM protocol(s)? Yes No ¹

¹ All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 18-Sep-23

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Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD72373

Varian, Beverly, MA

Project No: VARMS105.A.CS.EV.01.78

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD72373-1 Collected: 06-SEP-23 16:45 By: DK Received: 07-SEP-23 By: EN SB504_20230906_46-47_N_SO						
JD72373-1	SW846 8260D	08-SEP-23 17:52	JN			V8260MCP
JD72373-1	SM2540 G 18TH ED MOD	09-SEP-23 10:40	MK			SOL104
JD72373-1	SW846 8260D	11-SEP-23 15:10	JN			V8260MCP
JD72373-2 Collected: 07-SEP-23 09:05 By: DK Received: 07-SEP-23 By: EN SB504_20230907_51-52_N_SO						
JD72373-2	SM2540 G 18TH ED MOD	09-SEP-23 10:40	MK			SOL104
JD72373-2	SW846 8260D	12-SEP-23 18:06	JN			V8260MCP
JD72373-3 Collected: 07-SEP-23 15:20 By: Received: 07-SEP-23 By: EN TB-20230907_SO_02M						
JD72373-3	SW846 8260D	08-SEP-23 14:09	JN			V8260MCP
JD72373-4 Collected: 07-SEP-23 15:20 By: Received: 07-SEP-23 By: EN TB-20230907_SO_02L						
JD72373-4	SW846 8260D	08-SEP-23 16:32	JN			V8260MCP
JD72373-5 Collected: 07-SEP-23 15:20 By: DK Received: 07-SEP-23 By: EN SB501_20230907_24-25_N_SO						
JD72373-5	SM2540 G 18TH ED MOD	09-SEP-23 10:40	MK			SOL104
JD72373-5	SW846 8260D	12-SEP-23 18:33	JN			V8260MCP

QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501	SW846 8260D						
V1C8501-BS	67-64-1	Acetone	BSP	REC	181 ^a	%	70-130
V1C8501-BS	71-43-2	Benzene	BSP	REC	93	%	70-130
V1C8501-BS	108-86-1	Bromobenzene	BSP	REC	96	%	70-130
V1C8501-BS	74-97-5	Bromochloromethane	BSP	REC	109	%	70-130
V1C8501-BS	75-27-4	Bromodichloromethane	BSP	REC	86	%	70-130
V1C8501-BS	75-25-2	Bromoform	BSP	REC	99	%	70-130
V1C8501-BS	74-83-9	Bromomethane	BSP	REC	95	%	70-130
V1C8501-BS	78-93-3	2-Butanone (MEK)	BSP	REC	135	%	70-130
V1C8501-BS	104-51-8	n-Butylbenzene	BSP	REC	90	%	70-130
V1C8501-BS	135-98-8	sec-Butylbenzene	BSP	REC	89	%	70-130
V1C8501-BS	98-06-6	tert-Butylbenzene	BSP	REC	93	%	70-130
V1C8501-BS	75-15-0	Carbon disulfide	BSP	REC	104	%	70-130
V1C8501-BS	56-23-5	Carbon tetrachloride	BSP	REC	106	%	70-130
V1C8501-BS	108-90-7	Chlorobenzene	BSP	REC	95	%	70-130
V1C8501-BS	75-00-3	Chloroethane	BSP	REC	107	%	70-130
V1C8501-BS	67-66-3	Chloroform	BSP	REC	105	%	70-130
V1C8501-BS	74-87-3	Chloromethane	BSP	REC	120	%	70-130
V1C8501-BS	95-49-8	o-Chlorotoluene	BSP	REC	94	%	70-130
V1C8501-BS	106-43-4	p-Chlorotoluene	BSP	REC	92	%	70-130
V1C8501-BS	108-20-3	Di-Isopropyl ether	BSP	REC	122	%	70-130
V1C8501-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	80	%	70-130
V1C8501-BS	124-48-1	Dibromochloromethane	BSP	REC	95	%	70-130
V1C8501-BS	106-93-4	1,2-Dibromoethane	BSP	REC	103	%	70-130
V1C8501-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	89	%	70-130
V1C8501-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V1C8501-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	94	%	70-130
V1C8501-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	88	%	70-130
V1C8501-BS	75-34-3	1,1-Dichloroethane	BSP	REC	116	%	70-130
V1C8501-BS	107-06-2	1,2-Dichloroethane	BSP	REC	89	%	70-130
V1C8501-BS	75-35-4	1,1-Dichloroethene	BSP	REC	96	%	70-130
V1C8501-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	102	%	70-130
V1C8501-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	98	%	70-130
V1C8501-BS	78-87-5	1,2-Dichloropropane	BSP	REC	100	%	70-130
V1C8501-BS	142-28-9	1,3-Dichloropropane	BSP	REC	102	%	70-130
V1C8501-BS	594-20-7	2,2-Dichloropropane	BSP	REC	100	%	70-130
V1C8501-BS	563-58-6	1,1-Dichloropropene	BSP	REC	104	%	70-130
V1C8501-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	91	%	70-130
V1C8501-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	100	%	70-130
V1C8501-BS	123-91-1	1,4-Dioxane	BSP	REC	91	%	70-130
V1C8501-BS	60-29-7	Ethyl Ether	BSP	REC	113	%	70-130
V1C8501-BS	100-41-4	Ethylbenzene	BSP	REC	96	%	70-130
V1C8501-BS	87-68-3	Hexachlorobutadiene	BSP	REC	95	%	70-130

* Sample used for QC is not from job JD72373

QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BS	591-78-6	2-Hexanone	BSP	REC	130	%	70-130
V1C8501-BS	98-82-8	Isopropylbenzene	BSP	REC	87	%	70-130
V1C8501-BS	99-87-6	p-Isopropyltoluene	BSP	REC	91	%	70-130
V1C8501-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	104	%	70-130
V1C8501-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	108	%	70-130
V1C8501-BS	74-95-3	Methylene bromide	BSP	REC	91	%	70-130
V1C8501-BS	75-09-2	Methylene chloride	BSP	REC	103	%	70-130
V1C8501-BS	91-20-3	Naphthalene	BSP	REC	89	%	70-130
V1C8501-BS	103-65-1	n-Propylbenzene	BSP	REC	90	%	70-130
V1C8501-BS	100-42-5	Styrene	BSP	REC	95	%	70-130
V1C8501-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	95	%	70-130
V1C8501-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	120	%	70-130
V1C8501-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	101	%	70-130
V1C8501-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	94	%	70-130
V1C8501-BS	127-18-4	Tetrachloroethene	BSP	REC	97	%	70-130
V1C8501-BS	109-99-9	Tetrahydrofuran	BSP	REC	122	%	70-130
V1C8501-BS	108-88-3	Toluene	BSP	REC	100	%	70-130
V1C8501-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	89	%	70-130
V1C8501-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	93	%	70-130
V1C8501-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	104	%	70-130
V1C8501-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	101	%	70-130
V1C8501-BS	79-01-6	Trichloroethene	BSP	REC	90	%	70-130
V1C8501-BS	75-69-4	Trichlorofluoromethane	BSP	REC	96	%	70-130
V1C8501-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	103	%	70-130
V1C8501-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	92	%	70-130
V1C8501-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	92	%	70-130
V1C8501-BS	75-01-4	Vinyl chloride	BSP	REC	110	%	70-130
V1C8501-BS		m,p-Xylene	BSP	REC	98	%	70-130
V1C8501-BS	95-47-6	o-Xylene	BSP	REC	95	%	70-130
V1C8501-BS	1330-20-7	Xylene (total)	BSP	REC	97	%	70-130
V1C8501-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	109	%	70-130
V1C8501-BS	2037-26-5	Toluene-D8	BSP	SURR	112	%	70-130
V1C8501-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	97	%	70-130
V1C8501-BSD	67-64-1	Acetone	BSD	REC	171 ^a	%	70-130
V1C8501-BSD	67-64-1	Acetone	BSD	RPD	6	%	20
V1C8501-BSD	71-43-2	Benzene	BSD	REC	94	%	70-130
V1C8501-BSD	71-43-2	Benzene	BSD	RPD	1	%	20
V1C8501-BSD	108-86-1	Bromobenzene	BSD	REC	100	%	70-130
V1C8501-BSD	108-86-1	Bromobenzene	BSD	RPD	4	%	20
V1C8501-BSD	74-97-5	Bromochloromethane	BSD	REC	111	%	70-130
V1C8501-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V1C8501-BSD	75-27-4	Bromodichloromethane	BSD	REC	88	%	70-130
V1C8501-BSD	75-27-4	Bromodichloromethane	BSD	RPD	2	%	20
V1C8501-BSD	75-25-2	Bromoform	BSD	REC	98	%	70-130
V1C8501-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BSD	74-83-9	Bromomethane	BSD	REC	92	%	70-130
V1C8501-BSD	74-83-9	Bromomethane	BSD	RPD	3	%	20
V1C8501-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	139 ^b	%	70-130
V1C8501-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	3	%	20
V1C8501-BSD	104-51-8	n-Butylbenzene	BSD	REC	91	%	70-130
V1C8501-BSD	104-51-8	n-Butylbenzene	BSD	RPD	0	%	20
V1C8501-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V1C8501-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	4	%	20
V1C8501-BSD	98-06-6	tert-Butylbenzene	BSD	REC	93	%	70-130
V1C8501-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	0	%	20
V1C8501-BSD	75-15-0	Carbon disulfide	BSD	REC	106	%	70-130
V1C8501-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V1C8501-BSD	56-23-5	Carbon tetrachloride	BSD	REC	108	%	70-130
V1C8501-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	2	%	20
V1C8501-BSD	108-90-7	Chlorobenzene	BSD	REC	93	%	70-130
V1C8501-BSD	108-90-7	Chlorobenzene	BSD	RPD	1	%	20
V1C8501-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V1C8501-BSD	75-00-3	Chloroethane	BSD	RPD	1	%	20
V1C8501-BSD	67-66-3	Chloroform	BSD	REC	106	%	70-130
V1C8501-BSD	67-66-3	Chloroform	BSD	RPD	0	%	20
V1C8501-BSD	74-87-3	Chloromethane	BSD	REC	115	%	70-130
V1C8501-BSD	74-87-3	Chloromethane	BSD	RPD	4	%	20
V1C8501-BSD	95-49-8	o-Chlorotoluene	BSD	REC	97	%	70-130
V1C8501-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	3	%	20
V1C8501-BSD	106-43-4	p-Chlorotoluene	BSD	REC	91	%	70-130
V1C8501-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	1	%	20
V1C8501-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	126	%	70-130
V1C8501-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	3	%	20
V1C8501-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	79	%	70-130
V1C8501-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V1C8501-BSD	124-48-1	Dibromochloromethane	BSD	REC	91	%	70-130
V1C8501-BSD	124-48-1	Dibromochloromethane	BSD	RPD	5	%	20
V1C8501-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	102	%	70-130
V1C8501-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1C8501-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	93	%	70-130
V1C8501-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	5	%	20
V1C8501-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8501-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	1	%	20
V1C8501-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	101	%	70-130
V1C8501-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	7	%	20
V1C8501-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	91	%	70-130
V1C8501-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	3	%	20
V1C8501-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	119	%	70-130
V1C8501-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V1C8501-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	90	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	1	%	20
V1C8501-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	96	%	70-130
V1C8501-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	0	%	20
V1C8501-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	104	%	70-130
V1C8501-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V1C8501-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	102	%	70-130
V1C8501-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	4	%	20
V1C8501-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	101	%	70-130
V1C8501-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	0	%	20
V1C8501-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	99	%	70-130
V1C8501-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V1C8501-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	101	%	70-130
V1C8501-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	1	%	20
V1C8501-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	106	%	70-130
V1C8501-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	2	%	20
V1C8501-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	90	%	70-130
V1C8501-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	0	%	20
V1C8501-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	98	%	70-130
V1C8501-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	2	%	20
V1C8501-BSD	123-91-1	1,4-Dioxane	BSD	REC	98	%	70-130
V1C8501-BSD	123-91-1	1,4-Dioxane	BSD	RPD	7	%	20
V1C8501-BSD	60-29-7	Ethyl Ether	BSD	REC	113	%	70-130
V1C8501-BSD	60-29-7	Ethyl Ether	BSD	RPD	0	%	20
V1C8501-BSD	100-41-4	Ethylbenzene	BSD	REC	96	%	70-130
V1C8501-BSD	100-41-4	Ethylbenzene	BSD	RPD	0	%	20
V1C8501-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	97	%	70-130
V1C8501-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	2	%	20
V1C8501-BSD	591-78-6	2-Hexanone	BSD	REC	123	%	70-130
V1C8501-BSD	591-78-6	2-Hexanone	BSD	RPD	5	%	20
V1C8501-BSD	98-82-8	Isopropylbenzene	BSD	REC	86	%	70-130
V1C8501-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V1C8501-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	94	%	70-130
V1C8501-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	4	%	20
V1C8501-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	104	%	70-130
V1C8501-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	0	%	20
V1C8501-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	110	%	70-130
V1C8501-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	1	%	20
V1C8501-BSD	74-95-3	Methylene bromide	BSD	REC	95	%	70-130
V1C8501-BSD	74-95-3	Methylene bromide	BSD	RPD	5	%	20
V1C8501-BSD	75-09-2	Methylene chloride	BSD	REC	105	%	70-130
V1C8501-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V1C8501-BSD	91-20-3	Naphthalene	BSD	REC	88	%	70-130
V1C8501-BSD	91-20-3	Naphthalene	BSD	RPD	2	%	20
V1C8501-BSD	103-65-1	n-Propylbenzene	BSD	REC	92	%	70-130
V1C8501-BSD	103-65-1	n-Propylbenzene	BSD	RPD	2	%	20

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-BSD	100-42-5	Styrene	BSD	REC	93	%	70-130
V1C8501-BSD	100-42-5	Styrene	BSD	RPD	2	%	20
V1C8501-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	95	%	70-130
V1C8501-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V1C8501-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	121	%	70-130
V1C8501-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	1	%	20
V1C8501-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	97	%	70-130
V1C8501-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	4	%	20
V1C8501-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	97	%	70-130
V1C8501-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	3	%	20
V1C8501-BSD	127-18-4	Tetrachloroethene	BSD	REC	94	%	70-130
V1C8501-BSD	127-18-4	Tetrachloroethene	BSD	RPD	3	%	20
V1C8501-BSD	109-99-9	Tetrahydrofuran	BSD	REC	117	%	70-130
V1C8501-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	4	%	20
V1C8501-BSD	108-88-3	Toluene	BSD	REC	99	%	70-130
V1C8501-BSD	108-88-3	Toluene	BSD	RPD	1	%	20
V1C8501-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	91	%	70-130
V1C8501-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	3	%	20
V1C8501-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	99	%	70-130
V1C8501-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	5	%	20
V1C8501-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	110	%	70-130
V1C8501-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	6	%	20
V1C8501-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	98	%	70-130
V1C8501-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V1C8501-BSD	79-01-6	Trichloroethene	BSD	REC	96	%	70-130
V1C8501-BSD	79-01-6	Trichloroethene	BSD	RPD	6	%	20
V1C8501-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	100	%	70-130
V1C8501-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	3	%	20
V1C8501-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	102	%	70-130
V1C8501-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	1	%	20
V1C8501-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	95	%	70-130
V1C8501-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	4	%	20
V1C8501-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	95	%	70-130
V1C8501-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	4	%	20
V1C8501-BSD	75-01-4	Vinyl chloride	BSD	REC	113	%	70-130
V1C8501-BSD	75-01-4	Vinyl chloride	BSD	RPD	3	%	20
V1C8501-BSD		m,p-Xylene	BSD	REC	96	%	70-130
V1C8501-BSD		m,p-Xylene	BSD	RPD	2	%	20
V1C8501-BSD	95-47-6	o-Xylene	BSD	REC	96	%	70-130
V1C8501-BSD	95-47-6	o-Xylene	BSD	RPD	1	%	20
V1C8501-BSD	1330-20-7	Xylene (total)	BSD	REC	96	%	70-130
V1C8501-BSD	1330-20-7	Xylene (total)	BSD	RPD	1	%	20
V1C8501-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	109	%	70-130
V1C8501-BSD	2037-26-5	Toluene-D8	BSD	SURR	106	%	70-130
V1C8501-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	100	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8501-MB	1868-53-7	Dibromofluoromethane	MB	SURR	109	%	70-130
V1C8501-MB	2037-26-5	Toluene-D8	MB	SURR	106	%	70-130
V1C8501-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	101	%	70-130
JD72373-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	116	%	70-130
JD72373-1	2037-26-5	Toluene-D8	SAMP	SURR	101	%	70-130
JD72373-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	70-130
JD72373-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	111	%	70-130
JD72373-4	2037-26-5	Toluene-D8	SAMP	SURR	107	%	70-130
JD72373-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	70-130
V1C8503 SW846 8260D							
V1C8503-BS	67-64-1	Acetone	BSP	REC	182 ^b	%	70-130
V1C8503-BS	71-43-2	Benzene	BSP	REC	86	%	70-130
V1C8503-BS	108-86-1	Bromobenzene	BSP	REC	89	%	70-130
V1C8503-BS	74-97-5	Bromochloromethane	BSP	REC	110	%	70-130
V1C8503-BS	75-27-4	Bromodichloromethane	BSP	REC	80 ^c	%	70-130
V1C8503-BS	75-25-2	Bromoform	BSP	REC	94	%	70-130
V1C8503-BS	74-83-9	Bromomethane	BSP	REC	92	%	70-130
V1C8503-BS	78-93-3	2-Butanone (MEK)	BSP	REC	136	%	70-130
V1C8503-BS	104-51-8	n-Butylbenzene	BSP	REC	80 ^c	%	70-130
V1C8503-BS	135-98-8	sec-Butylbenzene	BSP	REC	81	%	70-130
V1C8503-BS	98-06-6	tert-Butylbenzene	BSP	REC	83	%	70-130
V1C8503-BS	75-15-0	Carbon disulfide	BSP	REC	104	%	70-130
V1C8503-BS	56-23-5	Carbon tetrachloride	BSP	REC	99	%	70-130
V1C8503-BS	108-90-7	Chlorobenzene	BSP	REC	90	%	70-130
V1C8503-BS	75-00-3	Chloroethane	BSP	REC	106	%	70-130
V1C8503-BS	67-66-3	Chloroform	BSP	REC	103	%	70-130
V1C8503-BS	74-87-3	Chloromethane	BSP	REC	108	%	70-130
V1C8503-BS	95-49-8	o-Chlorotoluene	BSP	REC	87	%	70-130
V1C8503-BS	106-43-4	p-Chlorotoluene	BSP	REC	86	%	70-130
V1C8503-BS	108-20-3	Di-Isopropyl ether	BSP	REC	110	%	70-130
V1C8503-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	70 ^d	%	70-130
V1C8503-BS	124-48-1	Dibromochloromethane	BSP	REC	88	%	70-130
V1C8503-BS	106-93-4	1,2-Dibromoethane	BSP	REC	97	%	70-130
V1C8503-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	82 ^c	%	70-130
V1C8503-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	84	%	70-130
V1C8503-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	88	%	70-130
V1C8503-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	87	%	70-130
V1C8503-BS	75-34-3	1,1-Dichloroethane	BSP	REC	110	%	70-130
V1C8503-BS	107-06-2	1,2-Dichloroethane	BSP	REC	79	%	70-130
V1C8503-BS	75-35-4	1,1-Dichloroethene	BSP	REC	95	%	70-130
V1C8503-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	105	%	70-130
V1C8503-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	98	%	70-130
V1C8503-BS	78-87-5	1,2-Dichloropropane	BSP	REC	91	%	70-130

* Sample used for QC is not from job JD72373

QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BS	142-28-9	1,3-Dichloropropane	BSP	REC	92	%	70-130
V1C8503-BS	594-20-7	2,2-Dichloropropane	BSP	REC	97	%	70-130
V1C8503-BS	563-58-6	1,1-Dichloropropene	BSP	REC	95	%	70-130
V1C8503-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	80 °	%	70-130
V1C8503-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	91	%	70-130
V1C8503-BS	123-91-1	1,4-Dioxane	BSP	REC	98	%	70-130
V1C8503-BS	60-29-7	Ethyl Ether	BSP	REC	111	%	70-130
V1C8503-BS	100-41-4	Ethylbenzene	BSP	REC	88	%	70-130
V1C8503-BS	87-68-3	Hexachlorobutadiene	BSP	REC	90	%	70-130
V1C8503-BS	591-78-6	2-Hexanone	BSP	REC	109	%	70-130
V1C8503-BS	98-82-8	Isopropylbenzene	BSP	REC	83	%	70-130
V1C8503-BS	99-87-6	p-Isopropyltoluene	BSP	REC	80	%	70-130
V1C8503-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	103	%	70-130
V1C8503-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	90	%	70-130
V1C8503-BS	74-95-3	Methylene bromide	BSP	REC	85	%	70-130
V1C8503-BS	75-09-2	Methylene chloride	BSP	REC	105	%	70-130
V1C8503-BS	91-20-3	Naphthalene	BSP	REC	77	%	70-130
V1C8503-BS	103-65-1	n-Propylbenzene	BSP	REC	80	%	70-130
V1C8503-BS	100-42-5	Styrene	BSP	REC	86	%	70-130
V1C8503-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	87	%	70-130
V1C8503-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	117	%	70-130
V1C8503-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	94	%	70-130
V1C8503-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	83	%	70-130
V1C8503-BS	127-18-4	Tetrachloroethene	BSP	REC	89	%	70-130
V1C8503-BS	109-99-9	Tetrahydrofuran	BSP	REC	98	%	70-130
V1C8503-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V1C8503-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	83	%	70-130
V1C8503-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	87	%	70-130
V1C8503-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	101	%	70-130
V1C8503-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	93	%	70-130
V1C8503-BS	79-01-6	Trichloroethene	BSP	REC	85	%	70-130
V1C8503-BS	75-69-4	Trichlorofluoromethane	BSP	REC	96	%	70-130
V1C8503-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	92	%	70-130
V1C8503-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	88	%	70-130
V1C8503-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	84	%	70-130
V1C8503-BS	75-01-4	Vinyl chloride	BSP	REC	103	%	70-130
V1C8503-BS		m,p-Xylene	BSP	REC	89	%	70-130
V1C8503-BS	95-47-6	o-Xylene	BSP	REC	86	%	70-130
V1C8503-BS	1330-20-7	Xylene (total)	BSP	REC	88	%	70-130
V1C8503-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	115	%	70-130
V1C8503-BS	2037-26-5	Toluene-D8	BSP	SURR	105	%	70-130
V1C8503-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	94	%	70-130
V1C8503-BSD	67-64-1	Acetone	BSD	REC	168 ^b	%	70-130
V1C8503-BSD	67-64-1	Acetone	BSD	RPD	8	%	20
V1C8503-BSD	71-43-2	Benzene	BSD	REC	93	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	71-43-2	Benzene	BSD	RPD	8	%	20
V1C8503-BSD	108-86-1	Bromobenzene	BSD	REC	92	%	70-130
V1C8503-BSD	108-86-1	Bromobenzene	BSD	RPD	4	%	20
V1C8503-BSD	74-97-5	Bromochloromethane	BSD	REC	112	%	70-130
V1C8503-BSD	74-97-5	Bromochloromethane	BSD	RPD	2	%	20
V1C8503-BSD	75-27-4	Bromodichloromethane	BSD	REC	85	%	70-130
V1C8503-BSD	75-27-4	Bromodichloromethane	BSD	RPD	6	%	20
V1C8503-BSD	75-25-2	Bromoform	BSD	REC	95	%	70-130
V1C8503-BSD	75-25-2	Bromoform	BSD	RPD	2	%	20
V1C8503-BSD	74-83-9	Bromomethane	BSD	REC	96	%	70-130
V1C8503-BSD	74-83-9	Bromomethane	BSD	RPD	4	%	20
V1C8503-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	128	%	70-130
V1C8503-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	6	%	20
V1C8503-BSD	104-51-8	n-Butylbenzene	BSD	REC	84	%	70-130
V1C8503-BSD	104-51-8	n-Butylbenzene	BSD	RPD	5	%	20
V1C8503-BSD	135-98-8	sec-Butylbenzene	BSD	REC	81	%	70-130
V1C8503-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	0	%	20
V1C8503-BSD	98-06-6	tert-Butylbenzene	BSD	REC	85	%	70-130
V1C8503-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V1C8503-BSD	75-15-0	Carbon disulfide	BSD	REC	106	%	70-130
V1C8503-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V1C8503-BSD	56-23-5	Carbon tetrachloride	BSD	REC	104	%	70-130
V1C8503-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V1C8503-BSD	108-90-7	Chlorobenzene	BSD	REC	94	%	70-130
V1C8503-BSD	108-90-7	Chlorobenzene	BSD	RPD	5	%	20
V1C8503-BSD	75-00-3	Chloroethane	BSD	REC	108	%	70-130
V1C8503-BSD	75-00-3	Chloroethane	BSD	RPD	2	%	20
V1C8503-BSD	67-66-3	Chloroform	BSD	REC	105	%	70-130
V1C8503-BSD	67-66-3	Chloroform	BSD	RPD	3	%	20
V1C8503-BSD	74-87-3	Chloromethane	BSD	REC	111	%	70-130
V1C8503-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V1C8503-BSD	95-49-8	o-Chlorotoluene	BSD	REC	86	%	70-130
V1C8503-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V1C8503-BSD	106-43-4	p-Chlorotoluene	BSD	REC	85	%	70-130
V1C8503-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	0	%	20
V1C8503-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	116	%	70-130
V1C8503-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	5	%	20
V1C8503-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	75	%	70-130
V1C8503-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	7	%	20
V1C8503-BSD	124-48-1	Dibromochloromethane	BSD	REC	91	%	70-130
V1C8503-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V1C8503-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	98	%	70-130
V1C8503-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1C8503-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8503-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	11 ^a	%	20

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	86	%	70-130
V1C8503-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V1C8503-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8503-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V1C8503-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	91	%	70-130
V1C8503-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	4	%	20
V1C8503-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	113	%	70-130
V1C8503-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V1C8503-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	84	%	70-130
V1C8503-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	7	%	20
V1C8503-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	101	%	70-130
V1C8503-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	6	%	20
V1C8503-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	104	%	70-130
V1C8503-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V1C8503-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	99	%	70-130
V1C8503-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	1	%	20
V1C8503-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	98	%	70-130
V1C8503-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	8	%	20
V1C8503-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	99	%	70-130
V1C8503-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	7	%	20
V1C8503-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	97	%	70-130
V1C8503-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	0	%	20
V1C8503-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	101	%	70-130
V1C8503-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	7	%	20
V1C8503-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	89	%	70-130
V1C8503-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	11 ^a	%	20
V1C8503-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	95	%	70-130
V1C8503-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	4	%	20
V1C8503-BSD	123-91-1	1,4-Dioxane	BSD	REC	102	%	70-130
V1C8503-BSD	123-91-1	1,4-Dioxane	BSD	RPD	5	%	20
V1C8503-BSD	60-29-7	Ethyl Ether	BSD	REC	108	%	70-130
V1C8503-BSD	60-29-7	Ethyl Ether	BSD	RPD	3	%	20
V1C8503-BSD	100-41-4	Ethylbenzene	BSD	REC	94	%	70-130
V1C8503-BSD	100-41-4	Ethylbenzene	BSD	RPD	7	%	20
V1C8503-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	94	%	70-130
V1C8503-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	5	%	20
V1C8503-BSD	591-78-6	2-Hexanone	BSD	REC	114	%	70-130
V1C8503-BSD	591-78-6	2-Hexanone	BSD	RPD	4	%	20
V1C8503-BSD	98-82-8	Isopropylbenzene	BSD	REC	82	%	70-130
V1C8503-BSD	98-82-8	Isopropylbenzene	BSD	RPD	1	%	20
V1C8503-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	88	%	70-130
V1C8503-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	9	%	20
V1C8503-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	104	%	70-130
V1C8503-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	1	%	20
V1C8503-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	92	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	3	%	20
V1C8503-BSD	74-95-3	Methylene bromide	BSD	REC	92	%	70-130
V1C8503-BSD	74-95-3	Methylene bromide	BSD	RPD	8	%	20
V1C8503-BSD	75-09-2	Methylene chloride	BSD	REC	107	%	70-130
V1C8503-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V1C8503-BSD	91-20-3	Naphthalene	BSD	REC	84	%	70-130
V1C8503-BSD	91-20-3	Naphthalene	BSD	RPD	9	%	20
V1C8503-BSD	103-65-1	n-Propylbenzene	BSD	REC	82	%	70-130
V1C8503-BSD	103-65-1	n-Propylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	100-42-5	Styrene	BSD	REC	95	%	70-130
V1C8503-BSD	100-42-5	Styrene	BSD	RPD	11 ^a	%	20
V1C8503-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	95	%	70-130
V1C8503-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	8	%	20
V1C8503-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	118	%	70-130
V1C8503-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	1	%	20
V1C8503-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	99	%	70-130
V1C8503-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	6	%	20
V1C8503-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	90	%	70-130
V1C8503-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	8	%	20
V1C8503-BSD	127-18-4	Tetrachloroethene	BSD	REC	99	%	70-130
V1C8503-BSD	127-18-4	Tetrachloroethene	BSD	RPD	11	%	20
V1C8503-BSD	109-99-9	Tetrahydrofuran	BSD	REC	98	%	70-130
V1C8503-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	0	%	20
V1C8503-BSD	108-88-3	Toluene	BSD	REC	97	%	70-130
V1C8503-BSD	108-88-3	Toluene	BSD	RPD	4	%	20
V1C8503-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	88	%	70-130
V1C8503-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	7	%	20
V1C8503-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	94	%	70-130
V1C8503-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	9	%	20
V1C8503-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	107	%	70-130
V1C8503-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	6	%	20
V1C8503-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V1C8503-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V1C8503-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V1C8503-BSD	79-01-6	Trichloroethene	BSD	RPD	10	%	20
V1C8503-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	100	%	70-130
V1C8503-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	4	%	20
V1C8503-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	91	%	70-130
V1C8503-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	2	%	20
V1C8503-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	89	%	70-130
V1C8503-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	83	%	70-130
V1C8503-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	75-01-4	Vinyl chloride	BSD	REC	109	%	70-130
V1C8503-BSD	75-01-4	Vinyl chloride	BSD	RPD	6	%	20

* Sample used for QC is not from job JD72373

QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD		m,p-Xylene	BSD	REC	92	%	70-130
V1C8503-BSD		m,p-Xylene	BSD	RPD	4	%	20
V1C8503-BSD	95-47-6	o-Xylene	BSD	REC	98	%	70-130
V1C8503-BSD	95-47-6	o-Xylene	BSD	RPD	13 ^a	%	20
V1C8503-BSD	1330-20-7	Xylene (total)	BSD	REC	94	%	70-130
V1C8503-BSD	1330-20-7	Xylene (total)	BSD	RPD	7	%	20
V1C8503-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	113	%	70-130
V1C8503-BSD	2037-26-5	Toluene-D8	BSD	SURR	107	%	70-130
V1C8503-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	94	%	70-130
V1C8503-MB	1868-53-7	Dibromofluoromethane	MB	SURR	113	%	70-130
V1C8503-MB	2037-26-5	Toluene-D8	MB	SURR	109	%	70-130
V1C8503-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	94	%	70-130
JD72373-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	118	%	70-130
JD72373-2	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130
JD72373-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	94	%	70-130
JD72373-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	119	%	70-130
JD72373-5	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD72373-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	109	%	70-130
V3D8039 SW846 8260D							
V3D8039-BS	67-64-1	Acetone	BSP	REC	127	%	70-130
V3D8039-BS	71-43-2	Benzene	BSP	REC	88	%	70-130
V3D8039-BS	108-86-1	Bromobenzene	BSP	REC	88	%	70-130
V3D8039-BS	74-97-5	Bromochloromethane	BSP	REC	92	%	70-130
V3D8039-BS	75-27-4	Bromodichloromethane	BSP	REC	86	%	70-130
V3D8039-BS	75-25-2	Bromoform	BSP	REC	95	%	70-130
V3D8039-BS	74-83-9	Bromomethane	BSP	REC	106	%	70-130
V3D8039-BS	78-93-3	2-Butanone (MEK)	BSP	REC	113	%	70-130
V3D8039-BS	104-51-8	n-Butylbenzene	BSP	REC	88	%	70-130
V3D8039-BS	135-98-8	sec-Butylbenzene	BSP	REC	87	%	70-130
V3D8039-BS	98-06-6	tert-Butylbenzene	BSP	REC	90	%	70-130
V3D8039-BS	75-15-0	Carbon disulfide	BSP	REC	87	%	70-130
V3D8039-BS	56-23-5	Carbon tetrachloride	BSP	REC	88	%	70-130
V3D8039-BS	108-90-7	Chlorobenzene	BSP	REC	88	%	70-130
V3D8039-BS	75-00-3	Chloroethane	BSP	REC	105	%	70-130
V3D8039-BS	67-66-3	Chloroform	BSP	REC	81	%	70-130
V3D8039-BS	74-87-3	Chloromethane	BSP	REC	82	%	70-130
V3D8039-BS	95-49-8	o-Chlorotoluene	BSP	REC	86	%	70-130
V3D8039-BS	106-43-4	p-Chlorotoluene	BSP	REC	87	%	70-130
V3D8039-BS	108-20-3	Di-Isopropyl ether	BSP	REC	79	%	70-130
V3D8039-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	86	%	70-130
V3D8039-BS	124-48-1	Dibromochloromethane	BSP	REC	90	%	70-130
V3D8039-BS	106-93-4	1,2-Dibromoethane	BSP	REC	93	%	70-130
V3D8039-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	91	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8039-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V3D8039-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	87	%	70-130
V3D8039-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	81	%	70-130
V3D8039-BS	75-34-3	1,1-Dichloroethane	BSP	REC	85	%	70-130
V3D8039-BS	107-06-2	1,2-Dichloroethane	BSP	REC	84	%	70-130
V3D8039-BS	75-35-4	1,1-Dichloroethene	BSP	REC	92	%	70-130
V3D8039-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	90	%	70-130
V3D8039-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	86	%	70-130
V3D8039-BS	78-87-5	1,2-Dichloropropane	BSP	REC	90	%	70-130
V3D8039-BS	142-28-9	1,3-Dichloropropane	BSP	REC	90	%	70-130
V3D8039-BS	594-20-7	2,2-Dichloropropane	BSP	REC	80	%	70-130
V3D8039-BS	563-58-6	1,1-Dichloropropene	BSP	REC	87	%	70-130
V3D8039-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	90	%	70-130
V3D8039-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	90	%	70-130
V3D8039-BS	123-91-1	1,4-Dioxane	BSP	REC	110	%	70-130
V3D8039-BS	60-29-7	Ethyl Ether	BSP	REC	90	%	70-130
V3D8039-BS	100-41-4	Ethylbenzene	BSP	REC	89	%	70-130
V3D8039-BS	87-68-3	Hexachlorobutadiene	BSP	REC	76	%	70-130
V3D8039-BS	591-78-6	2-Hexanone	BSP	REC	103	%	70-130
V3D8039-BS	98-82-8	Isopropylbenzene	BSP	REC	90	%	70-130
V3D8039-BS	99-87-6	p-Isopropyltoluene	BSP	REC	86	%	70-130
V3D8039-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	92	%	70-130
V3D8039-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	97	%	70-130
V3D8039-BS	74-95-3	Methylene bromide	BSP	REC	87	%	70-130
V3D8039-BS	75-09-2	Methylene chloride	BSP	REC	81	%	70-130
V3D8039-BS	91-20-3	Naphthalene	BSP	REC	84	%	70-130
V3D8039-BS	103-65-1	n-Propylbenzene	BSP	REC	85	%	70-130
V3D8039-BS	100-42-5	Styrene	BSP	REC	95	%	70-130
V3D8039-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	93	%	70-130
V3D8039-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	86	%	70-130
V3D8039-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	91	%	70-130
V3D8039-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	85	%	70-130
V3D8039-BS	127-18-4	Tetrachloroethene	BSP	REC	85	%	70-130
V3D8039-BS	109-99-9	Tetrahydrofuran	BSP	REC	85	%	70-130
V3D8039-BS	108-88-3	Toluene	BSP	REC	87	%	70-130
V3D8039-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	84	%	70-130
V3D8039-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	85	%	70-130
V3D8039-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	82	%	70-130
V3D8039-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	89	%	70-130
V3D8039-BS	79-01-6	Trichloroethene	BSP	REC	90	%	70-130
V3D8039-BS	75-69-4	Trichlorofluoromethane	BSP	REC	83	%	70-130
V3D8039-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	88	%	70-130
V3D8039-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	83	%	70-130
V3D8039-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	85	%	70-130
V3D8039-BS	75-01-4	Vinyl chloride	BSP	REC	102	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8039-BS		m,p-Xylene	BSP	REC	91	%	70-130
V3D8039-BS	95-47-6	o-Xylene	BSP	REC	90	%	70-130
V3D8039-BS	1330-20-7	Xylene (total)	BSP	REC	91	%	70-130
V3D8039-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	99	%	70-130
V3D8039-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	70-130
V3D8039-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	88	%	70-130
V3D8039-BSD	67-64-1	Acetone	BSD	REC	137	%	70-130
V3D8039-BSD	67-64-1	Acetone	BSD	RPD	8	%	20
V3D8039-BSD	71-43-2	Benzene	BSD	REC	91	%	70-130
V3D8039-BSD	71-43-2	Benzene	BSD	RPD	4	%	20
V3D8039-BSD	108-86-1	Bromobenzene	BSD	REC	90	%	70-130
V3D8039-BSD	108-86-1	Bromobenzene	BSD	RPD	3	%	20
V3D8039-BSD	74-97-5	Bromochloromethane	BSD	REC	92	%	70-130
V3D8039-BSD	74-97-5	Bromochloromethane	BSD	RPD	0	%	20
V3D8039-BSD	75-27-4	Bromodichloromethane	BSD	REC	90	%	70-130
V3D8039-BSD	75-27-4	Bromodichloromethane	BSD	RPD	4	%	20
V3D8039-BSD	75-25-2	Bromoform	BSD	REC	100	%	70-130
V3D8039-BSD	75-25-2	Bromoform	BSD	RPD	5	%	20
V3D8039-BSD	74-83-9	Bromomethane	BSD	REC	108	%	70-130
V3D8039-BSD	74-83-9	Bromomethane	BSD	RPD	3	%	20
V3D8039-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	122	%	70-130
V3D8039-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	8	%	20
V3D8039-BSD	104-51-8	n-Butylbenzene	BSD	REC	91	%	70-130
V3D8039-BSD	104-51-8	n-Butylbenzene	BSD	RPD	3	%	20
V3D8039-BSD	135-98-8	sec-Butylbenzene	BSD	REC	90	%	70-130
V3D8039-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	4	%	20
V3D8039-BSD	98-06-6	tert-Butylbenzene	BSD	REC	92	%	70-130
V3D8039-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	2	%	20
V3D8039-BSD	75-15-0	Carbon disulfide	BSD	REC	88	%	70-130
V3D8039-BSD	75-15-0	Carbon disulfide	BSD	RPD	1	%	20
V3D8039-BSD	56-23-5	Carbon tetrachloride	BSD	REC	89	%	70-130
V3D8039-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	2	%	20
V3D8039-BSD	108-90-7	Chlorobenzene	BSD	REC	91	%	70-130
V3D8039-BSD	108-90-7	Chlorobenzene	BSD	RPD	3	%	20
V3D8039-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V3D8039-BSD	75-00-3	Chloroethane	BSD	RPD	1	%	20
V3D8039-BSD	67-66-3	Chloroform	BSD	REC	82	%	70-130
V3D8039-BSD	67-66-3	Chloroform	BSD	RPD	1	%	20
V3D8039-BSD	74-87-3	Chloromethane	BSD	REC	83	%	70-130
V3D8039-BSD	74-87-3	Chloromethane	BSD	RPD	1	%	20
V3D8039-BSD	95-49-8	o-Chlorotoluene	BSD	REC	91	%	70-130
V3D8039-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	6	%	20
V3D8039-BSD	106-43-4	p-Chlorotoluene	BSD	REC	88	%	70-130
V3D8039-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V3D8039-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	81	%	70-130

* Sample used for QC is not from job JD72373

QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8039-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	2	%	20
V3D8039-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	98	%	70-130
V3D8039-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	13 ^a	%	20
V3D8039-BSD	124-48-1	Dibromochloromethane	BSD	REC	93	%	70-130
V3D8039-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V3D8039-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	97	%	70-130
V3D8039-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	4	%	20
V3D8039-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	96	%	70-130
V3D8039-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	5	%	20
V3D8039-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	94	%	70-130
V3D8039-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	4	%	20
V3D8039-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	91	%	70-130
V3D8039-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	4	%	20
V3D8039-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	82	%	70-130
V3D8039-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	1	%	20
V3D8039-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	86	%	70-130
V3D8039-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	1	%	20
V3D8039-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	86	%	70-130
V3D8039-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	2	%	20
V3D8039-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	93	%	70-130
V3D8039-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	0	%	20
V3D8039-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	91	%	70-130
V3D8039-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V3D8039-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	88	%	70-130
V3D8039-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	2	%	20
V3D8039-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	90	%	70-130
V3D8039-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	0	%	20
V3D8039-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	92	%	70-130
V3D8039-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V3D8039-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	82	%	70-130
V3D8039-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	2	%	20
V3D8039-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	88	%	70-130
V3D8039-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	0	%	20
V3D8039-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	93	%	70-130
V3D8039-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	3	%	20
V3D8039-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	92	%	70-130
V3D8039-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	3	%	20
V3D8039-BSD	123-91-1	1,4-Dioxane	BSD	REC	126	%	70-130
V3D8039-BSD	123-91-1	1,4-Dioxane	BSD	RPD	13	%	20
V3D8039-BSD	60-29-7	Ethyl Ether	BSD	REC	94	%	70-130
V3D8039-BSD	60-29-7	Ethyl Ether	BSD	RPD	4	%	20
V3D8039-BSD	100-41-4	Ethylbenzene	BSD	REC	91	%	70-130
V3D8039-BSD	100-41-4	Ethylbenzene	BSD	RPD	2	%	20
V3D8039-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	83	%	70-130
V3D8039-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	9	%	20

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8039-BSD	591-78-6	2-Hexanone	BSD	REC	109	%	70-130
V3D8039-BSD	591-78-6	2-Hexanone	BSD	RPD	6	%	20
V3D8039-BSD	98-82-8	Isopropylbenzene	BSD	REC	92	%	70-130
V3D8039-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V3D8039-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	91	%	70-130
V3D8039-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	5	%	20
V3D8039-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	94	%	70-130
V3D8039-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	2	%	20
V3D8039-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	103	%	70-130
V3D8039-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	6	%	20
V3D8039-BSD	74-95-3	Methylene bromide	BSD	REC	91	%	70-130
V3D8039-BSD	74-95-3	Methylene bromide	BSD	RPD	4	%	20
V3D8039-BSD	75-09-2	Methylene chloride	BSD	REC	83	%	70-130
V3D8039-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V3D8039-BSD	91-20-3	Naphthalene	BSD	REC	94	%	70-130
V3D8039-BSD	91-20-3	Naphthalene	BSD	RPD	11	%	20
V3D8039-BSD	103-65-1	n-Propylbenzene	BSD	REC	88	%	70-130
V3D8039-BSD	103-65-1	n-Propylbenzene	BSD	RPD	3	%	20
V3D8039-BSD	100-42-5	Styrene	BSD	REC	98	%	70-130
V3D8039-BSD	100-42-5	Styrene	BSD	RPD	4	%	20
V3D8039-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	93	%	70-130
V3D8039-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V3D8039-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	88	%	70-130
V3D8039-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	2	%	20
V3D8039-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	95	%	70-130
V3D8039-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	4	%	20
V3D8039-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	88	%	70-130
V3D8039-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	3	%	20
V3D8039-BSD	127-18-4	Tetrachloroethene	BSD	REC	88	%	70-130
V3D8039-BSD	127-18-4	Tetrachloroethene	BSD	RPD	3	%	20
V3D8039-BSD	109-99-9	Tetrahydrofuran	BSD	REC	90	%	70-130
V3D8039-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	6	%	20
V3D8039-BSD	108-88-3	Toluene	BSD	REC	89	%	70-130
V3D8039-BSD	108-88-3	Toluene	BSD	RPD	3	%	20
V3D8039-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	92	%	70-130
V3D8039-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	10	%	20
V3D8039-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	92	%	70-130
V3D8039-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	8	%	20
V3D8039-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	84	%	70-130
V3D8039-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	3	%	20
V3D8039-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	90	%	70-130
V3D8039-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	2	%	20
V3D8039-BSD	79-01-6	Trichloroethene	BSD	REC	93	%	70-130
V3D8039-BSD	79-01-6	Trichloroethene	BSD	RPD	4	%	20
V3D8039-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	85	%	70-130

* Sample used for QC is not from job JD72373

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QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8039-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	2	%	20
V3D8039-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	93	%	70-130
V3D8039-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	5	%	20
V3D8039-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	87	%	70-130
V3D8039-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	5	%	20
V3D8039-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	89	%	70-130
V3D8039-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	4	%	20
V3D8039-BSD	75-01-4	Vinyl chloride	BSD	REC	102	%	70-130
V3D8039-BSD	75-01-4	Vinyl chloride	BSD	RPD	0	%	20
V3D8039-BSD		m,p-Xylene	BSD	REC	93	%	70-130
V3D8039-BSD		m,p-Xylene	BSD	RPD	3	%	20
V3D8039-BSD	95-47-6	o-Xylene	BSD	REC	94	%	70-130
V3D8039-BSD	95-47-6	o-Xylene	BSD	RPD	3	%	20
V3D8039-BSD	1330-20-7	Xylene (total)	BSD	REC	93	%	70-130
V3D8039-BSD	1330-20-7	Xylene (total)	BSD	RPD	3	%	20
V3D8039-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	97	%	70-130
V3D8039-BSD	2037-26-5	Toluene-D8	BSD	SURR	97	%	70-130
V3D8039-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	90	%	70-130
V3D8039-MB	1868-53-7	Dibromofluoromethane	MB	SURR	96	%	70-130
V3D8039-MB	2037-26-5	Toluene-D8	MB	SURR	99	%	70-130
V3D8039-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	89	%	70-130
JD72373-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	97	%	70-130
JD72373-3	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72373-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	90	%	70-130
V3D8040	SW846 8260D						
V3D8040-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	93	%	70-130
V3D8040-BS	79-01-6	Trichloroethene	BSP	REC	92	%	70-130
V3D8040-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	100	%	70-130
V3D8040-BS	2037-26-5	Toluene-D8	BSP	SURR	99	%	70-130
V3D8040-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	91	%	70-130
V3D8040-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	96	%	70-130
V3D8040-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	3	%	20
V3D8040-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V3D8040-BSD	79-01-6	Trichloroethene	BSD	RPD	3	%	20
V3D8040-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	102	%	70-130
V3D8040-BSD	2037-26-5	Toluene-D8	BSD	SURR	99	%	70-130
V3D8040-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	90	%	70-130
V3D8040-MB	1868-53-7	Dibromofluoromethane	MB	SURR	99	%	70-130
V3D8040-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V3D8040-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	93	%	70-130
JD72373-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD72373-1	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD72373-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	93	%	70-130

* Sample used for QC is not from job JD72373

QC Evaluation: MA MCP Limits

Job Number: JD72373
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/06/23 thru 09/07/23

QC Sample ID	CAS#	Analyte	Sample Result Type	Result Type	Units	Limits
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- (a) Outside in house control limits.
- (b) High percent recovery and no associated positive reported in the QC batch.
- (c) Outside of in house control limits, but within reasonable method recovery limits.
- (d) Outside of in house control limits, but within the marginal exceedance limits.

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* Sample used for QC is not from job JD72373

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-MB	1C196196.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1, JD72373-4

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	0.55	2.0	ug/kg	J
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-MB	1C196196.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1, JD72373-4

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	ND	5.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-MB	1C196196.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1, JD72373-4

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	109%	80-124%
17060-07-0	1,2-Dichloroethane-D4	97%	75-133%
2037-26-5	Toluene-D8	106%	79-125%
460-00-4	4-Bromofluorobenzene	101%	58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8039-MB	3D192327.D	1	09/08/23	JN	n/a	n/a	V3D8039

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-3

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	500	ug/kg	
71-43-2	Benzene	ND	25	ug/kg	
108-86-1	Bromobenzene	ND	250	ug/kg	
74-97-5	Bromochloromethane	ND	250	ug/kg	
75-27-4	Bromodichloromethane	ND	100	ug/kg	
75-25-2	Bromoform	ND	250	ug/kg	
74-83-9	Bromomethane	ND	250	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	ug/kg	
104-51-8	n-Butylbenzene	ND	100	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	ug/kg	
75-15-0	Carbon disulfide	ND	100	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	ug/kg	
108-90-7	Chlorobenzene	ND	100	ug/kg	
75-00-3	Chloroethane	ND	250	ug/kg	
67-66-3	Chloroform	ND	100	ug/kg	
74-87-3	Chloromethane	ND	250	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	ug/kg	
108-20-3	Di-Isopropyl ether	ND	100	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	ug/kg	
124-48-1	Dibromochloromethane	ND	100	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8039-MB	3D192327.D	1	09/08/23	JN	n/a	n/a	V3D8039

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-3

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	100	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	ug/kg	
123-91-1	1,4-Dioxane	ND	6300	ug/kg	
60-29-7	Ethyl Ether	ND	100	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
87-68-3	Hexachlorobutadiene	38.2	250	ug/kg	J
591-78-6	2-Hexanone	ND	250	ug/kg	
98-82-8	Isopropylbenzene	ND	100	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg	
74-95-3	Methylene bromide	ND	250	ug/kg	
75-09-2	Methylene chloride	ND	250	ug/kg	
91-20-3	Naphthalene	ND	250	ug/kg	
103-65-1	n-Propylbenzene	ND	100	ug/kg	
100-42-5	Styrene	ND	100	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	100	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	ug/kg	
127-18-4	Tetrachloroethene	ND	100	ug/kg	
109-99-9	Tetrahydrofuran	ND	500	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	ug/kg	
79-01-6	Trichloroethene	ND	50	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	ug/kg	
75-01-4	Vinyl chloride	ND	100	ug/kg	
	m,p-Xylene	ND	50	ug/kg	
95-47-6	o-Xylene	ND	50	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8039-MB	3D192327.D	1	09/08/23	JN	n/a	n/a	V3D8039

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-3

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	96% 80-124%
17060-07-0	1,2-Dichloroethane-D4	96% 75-133%
2037-26-5	Toluene-D8	99% 79-125%
460-00-4	4-Bromofluorobenzene	89% 58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	1.27	380	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	50	ug/kg	
79-01-6	Trichloroethene	ND	50	ug/kg	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	99%	80-124%
17060-07-0	1,2-Dichloroethane-D4	95%	75-133%
2037-26-5	Toluene-D8	100%	79-125%
460-00-4	4-Bromofluorobenzene	93%	58-148%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	1.29	640	ug/kg	J
	system artifact	1.82	460	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

6.1.3
6

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-2, JD72373-5

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	ND	2.0	ug/kg	
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-2, JD72373-5

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	2.7	5.0	ug/kg	J
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

Method Blank Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-2, JD72373-5

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	113%	80-124%
17060-07-0	1,2-Dichloroethane-D4	90%	75-133%
2037-26-5	Toluene-D8	109%	79-125%
460-00-4	4-Bromofluorobenzene	94%	58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-BS	1C196192.D	1	09/08/23	JN	n/a	n/a	V1C8501
V1C8501-BSD	1C196193.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1, JD72373-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	362	181* a	342	171* a	6	52-156/12
71-43-2	Benzene	50	46.7	93	47.0	94	1	82-119/10
108-86-1	Bromobenzene	50	47.9	96	50.1	100	4	82-115/10
74-97-5	Bromochloromethane	50	54.7	109	55.4	111	1	82-123/10
75-27-4	Bromodichloromethane	50	43.1	86	43.8	88	2	83-121/10
75-25-2	Bromoform	50	49.6	99	48.9	98	1	74-138/10
74-83-9	Bromomethane	50	47.5	95	46.2	92	3	56-150/12
78-93-3	2-Butanone (MEK)	200	270	135	277	139* b	3	72-138/10
104-51-8	n-Butylbenzene	50	45.2	90	45.3	91	0	81-124/11
135-98-8	sec-Butylbenzene	50	44.5	89	46.2	92	4	78-120/10
98-06-6	tert-Butylbenzene	50	46.5	93	46.6	93	0	78-121/10
75-15-0	Carbon disulfide	50	51.8	104	52.9	106	2	67-131/11
56-23-5	Carbon tetrachloride	50	53.2	106	54.1	108	2	72-130/11
108-90-7	Chlorobenzene	50	47.3	95	46.7	93	1	83-114/10
75-00-3	Chloroethane	50	53.5	107	53.2	106	1	67-141/12
67-66-3	Chloroform	50	52.7	105	52.9	106	0	76-115/10
74-87-3	Chloromethane	50	59.9	120	57.5	115	4	57-141/13
95-49-8	o-Chlorotoluene	50	46.8	94	48.4	97	3	81-118/10
106-43-4	p-Chlorotoluene	50	45.8	92	45.4	91	1	78-117/10
108-20-3	Di-Isopropyl ether	50	61.1	122	62.9	126	3	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	50	40.0	80	39.3	79	2	72-131/11
124-48-1	Dibromochloromethane	50	47.6	95	45.4	91	5	80-128/10
106-93-4	1,2-Dibromoethane	50	51.4	103	51.0	102	1	58-145/10
95-50-1	1,2-Dichlorobenzene	50	44.3	89	46.6	93	5	83-117/10
541-73-1	1,3-Dichlorobenzene	50	44.8	90	45.4	91	1	82-114/10
106-46-7	1,4-Dichlorobenzene	50	46.9	94	50.3	101	7	79-114/10
75-71-8	Dichlorodifluoromethane	50	44.1	88	45.3	91	3	49-146/13
75-34-3	1,1-Dichloroethane	50	57.9	116	59.6	119	3	76-126/10
107-06-2	1,2-Dichloroethane	50	44.6	89	45.0	90	1	76-118/10
75-35-4	1,1-Dichloroethene	50	48.0	96	47.8	96	0	72-125/11
156-59-2	cis-1,2-Dichloroethene	50	51.1	102	52.2	104	2	80-118/10
156-60-5	trans-1,2-Dichloroethene	50	49.2	98	51.2	102	4	76-122/10
78-87-5	1,2-Dichloropropane	50	50.2	100	50.3	101	0	82-123/10
142-28-9	1,3-Dichloropropane	50	51.0	102	49.6	99	3	84-120/10
594-20-7	2,2-Dichloropropane	50	49.9	100	50.5	101	1	66-130/11
563-58-6	1,1-Dichloropropene	50	52.1	104	53.1	106	2	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-BS	1C196192.D	1	09/08/23	JN	n/a	n/a	V1C8501
V1C8501-BSD	1C196193.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1, JD72373-4

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	45.3	91	45.2	90	0	83-123/10
10061-02-6	trans-1,3-Dichloropropene	50	49.9	100	48.9	98	2	83-123/10
123-91-1	1,4-Dioxane	1250	1140	91	1220	98	7	64-163/20
60-29-7	Ethyl Ether	50	56.7	113	56.5	113	0	78-131/10
100-41-4	Ethylbenzene	50	47.8	96	47.9	96	0	83-115/10
87-68-3	Hexachlorobutadiene	50	47.4	95	48.5	97	2	65-130/11
591-78-6	2-Hexanone	200	259	130	246	123	5	73-138/10
98-82-8	Isopropylbenzene	50	43.6	87	42.8	86	2	81-122/11
99-87-6	p-Isopropyltoluene	50	45.3	91	47.2	94	4	80-120/10
1634-04-4	Methyl Tert Butyl Ether	50	51.9	104	52.0	104	0	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	216	108	219	110	1	71-138/10
74-95-3	Methylene bromide	50	45.3	91	47.4	95	5	81-122/10
75-09-2	Methylene chloride	50	51.5	103	52.7	105	2	73-122/10
91-20-3	Naphthalene	50	44.7	89	43.8	88	2	71-129/14
103-65-1	n-Propylbenzene	50	44.9	90	45.8	92	2	77-120/10
100-42-5	Styrene	50	47.5	95	46.6	93	2	84-122/10
994-05-8	tert-Amyl Methyl Ether	50	47.5	95	47.7	95	0	77-125/11
637-92-3	tert-Butyl Ethyl Ether	50	60.1	120	60.6	121	1	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	50	50.6	101	48.6	97	4	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	50	46.8	94	48.3	97	3	75-127/10
127-18-4	Tetrachloroethene	50	48.5	97	47.0	94	3	73-125/11
109-99-9	Tetrahydrofuran	50	60.9	122	58.4	117	4	61-136/11
108-88-3	Toluene	50	49.8	100	49.5	99	1	82-118/10
87-61-6	1,2,3-Trichlorobenzene	50	44.3	89	45.7	91	3	68-132/13
120-82-1	1,2,4-Trichlorobenzene	50	46.7	93	49.3	99	5	72-133/12
71-55-6	1,1,1-Trichloroethane	50	51.9	104	54.9	110	6	77-124/11
79-00-5	1,1,2-Trichloroethane	50	50.4	101	48.8	98	3	83-122/10
79-01-6	Trichloroethene	50	45.2	90	47.9	96	6	80-122/10
75-69-4	Trichlorofluoromethane	50	48.1	96	49.8	100	3	69-132/11
96-18-4	1,2,3-Trichloropropane	50	51.7	103	51.0	102	1	80-120/10
95-63-6	1,2,4-Trimethylbenzene	50	45.8	92	47.5	95	4	80-119/10
108-67-8	1,3,5-Trimethylbenzene	50	45.8	92	47.5	95	4	79-120/10
75-01-4	Vinyl chloride	50	55.0	110	56.7	113	3	60-144/13
	m,p-Xylene	100	98.0	98	96.2	96	2	82-119/10
95-47-6	o-Xylene	50	47.4	95	48.0	96	1	84-120/10
1330-20-7	Xylene (total)	150	145	97	144	96	1	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8501-BS	1C196192.D	1	09/08/23	JN	n/a	n/a	V1C8501
V1C8501-BSD	1C196193.D	1	09/08/23	JN	n/a	n/a	V1C8501

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1, JD72373-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	109%	80-124%
17060-07-0	1,2-Dichloroethane-D4	97%	99%	75-133%
2037-26-5	Toluene-D8	112%	106%	79-125%
460-00-4	4-Bromofluorobenzene	97%	100%	58-148%

- (a) Outside in house control limits.
- (b) High percent recovery and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8039-BS	3D192324.D	1	09/08/23	JN	n/a	n/a	V3D8039
V3D8039-BSD	3D192325.D	1	09/08/23	JN	n/a	n/a	V3D8039

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10000	12700	127	13700	137	8	52-156/12
71-43-2	Benzene	2500	2190	88	2270	91	4	82-119/10
108-86-1	Bromobenzene	2500	2200	88	2260	90	3	82-115/10
74-97-5	Bromochloromethane	2500	2300	92	2310	92	0	82-123/10
75-27-4	Bromodichloromethane	2500	2160	86	2240	90	4	83-121/10
75-25-2	Bromoform	2500	2380	95	2500	100	5	74-138/10
74-83-9	Bromomethane	2500	2640	106	2710	108	3	56-150/12
78-93-3	2-Butanone (MEK)	10000	11300	113	12200	122	8	72-138/10
104-51-8	n-Butylbenzene	2500	2210	88	2280	91	3	81-124/11
135-98-8	sec-Butylbenzene	2500	2170	87	2260	90	4	78-120/10
98-06-6	tert-Butylbenzene	2500	2260	90	2300	92	2	78-121/10
75-15-0	Carbon disulfide	2500	2180	87	2200	88	1	67-131/11
56-23-5	Carbon tetrachloride	2500	2190	88	2230	89	2	72-130/11
108-90-7	Chlorobenzene	2500	2200	88	2270	91	3	83-114/10
75-00-3	Chloroethane	2500	2620	105	2650	106	1	67-141/12
67-66-3	Chloroform	2500	2020	81	2040	82	1	76-115/10
74-87-3	Chloromethane	2500	2050	82	2080	83	1	57-141/13
95-49-8	o-Chlorotoluene	2500	2140	86	2270	91	6	81-118/10
106-43-4	p-Chlorotoluene	2500	2170	87	2210	88	2	78-117/10
108-20-3	Di-Isopropyl ether	2500	1980	79	2030	81	2	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	2500	2150	86	2460	98	13* a	72-131/11
124-48-1	Dibromochloromethane	2500	2260	90	2330	93	3	80-128/10
106-93-4	1,2-Dibromoethane	2500	2330	93	2430	97	4	58-145/10
95-50-1	1,2-Dichlorobenzene	2500	2280	91	2390	96	5	83-117/10
541-73-1	1,3-Dichlorobenzene	2500	2240	90	2340	94	4	82-114/10
106-46-7	1,4-Dichlorobenzene	2500	2180	87	2280	91	4	79-114/10
75-71-8	Dichlorodifluoromethane	2500	2030	81	2060	82	1	49-146/13
75-34-3	1,1-Dichloroethane	2500	2130	85	2150	86	1	76-126/10
107-06-2	1,2-Dichloroethane	2500	2100	84	2150	86	2	76-118/10
75-35-4	1,1-Dichloroethene	2500	2310	92	2320	93	0	72-125/11
156-59-2	cis-1,2-Dichloroethene	2500	2240	90	2280	91	2	80-118/10
156-60-5	trans-1,2-Dichloroethene	2500	2150	86	2190	88	2	76-122/10
78-87-5	1,2-Dichloropropane	2500	2240	90	2250	90	0	82-123/10
142-28-9	1,3-Dichloropropane	2500	2240	90	2300	92	3	84-120/10
594-20-7	2,2-Dichloropropane	2500	2000	80	2050	82	2	66-130/11
563-58-6	1,1-Dichloropropene	2500	2180	87	2190	88	0	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8039-BS	3D192324.D	1	09/08/23	JN	n/a	n/a	V3D8039
V3D8039-BSD	3D192325.D	1	09/08/23	JN	n/a	n/a	V3D8039

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-3

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	2500	2250	90	2320	93	3	83-123/10
10061-02-6	trans-1,3-Dichloropropene	2500	2240	90	2300	92	3	83-123/10
123-91-1	1,4-Dioxane	62500	68700	110	78600	126	13	64-163/20
60-29-7	Ethyl Ether	2500	2240	90	2340	94	4	78-131/10
100-41-4	Ethylbenzene	2500	2220	89	2270	91	2	83-115/10
87-68-3	Hexachlorobutadiene	2500	1910	76	2080	83	9	65-130/11
591-78-6	2-Hexanone	10000	10300	103	10900	109	6	73-138/10
98-82-8	Isopropylbenzene	2500	2250	90	2300	92	2	81-122/11
99-87-6	p-Isopropyltoluene	2500	2160	86	2270	91	5	80-120/10
1634-04-4	Methyl Tert Butyl Ether	2500	2290	92	2340	94	2	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	10000	9710	97	10300	103	6	71-138/10
74-95-3	Methylene bromide	2500	2180	87	2280	91	4	81-122/10
75-09-2	Methylene chloride	2500	2030	81	2070	83	2	73-122/10
91-20-3	Naphthalene	2500	2090	84	2340	94	11	71-129/14
103-65-1	n-Propylbenzene	2500	2130	85	2200	88	3	77-120/10
100-42-5	Styrene	2500	2370	95	2460	98	4	84-122/10
994-05-8	tert-Amyl Methyl Ether	2500	2320	93	2330	93	0	77-125/11
637-92-3	tert-Butyl Ethyl Ether	2500	2150	86	2190	88	2	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	2500	2270	91	2370	95	4	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	2500	2130	85	2200	88	3	75-127/10
127-18-4	Tetrachloroethene	2500	2130	85	2200	88	3	73-125/11
109-99-9	Tetrahydrofuran	2500	2120	85	2260	90	6	61-136/11
108-88-3	Toluene	2500	2170	87	2230	89	3	82-118/10
87-61-6	1,2,3-Trichlorobenzene	2500	2100	84	2310	92	10	68-132/13
120-82-1	1,2,4-Trichlorobenzene	2500	2120	85	2300	92	8	72-133/12
71-55-6	1,1,1-Trichloroethane	2500	2050	82	2110	84	3	77-124/11
79-00-5	1,1,2-Trichloroethane	2500	2220	89	2260	90	2	83-122/10
79-01-6	Trichloroethene	2500	2240	90	2320	93	4	80-122/10
75-69-4	Trichlorofluoromethane	2500	2080	83	2120	85	2	69-132/11
96-18-4	1,2,3-Trichloropropane	2500	2200	88	2320	93	5	80-120/10
95-63-6	1,2,4-Trimethylbenzene	2500	2080	83	2180	87	5	80-119/10
108-67-8	1,3,5-Trimethylbenzene	2500	2130	85	2220	89	4	79-120/10
75-01-4	Vinyl chloride	2500	2560	102	2550	102	0	60-144/13
	m,p-Xylene	5000	4530	91	4650	93	3	82-119/10
95-47-6	o-Xylene	2500	2260	90	2340	94	3	84-120/10
1330-20-7	Xylene (total)	7500	6790	91	6990	93	3	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8039-BS	3D192324.D	1	09/08/23	JN	n/a	n/a	V3D8039
V3D8039-BSD	3D192325.D	1	09/08/23	JN	n/a	n/a	V3D8039

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-3

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	99%	97%	80-124%
17060-07-0	1,2-Dichloroethane-D4	95%	97%	75-133%
2037-26-5	Toluene-D8	98%	97%	79-125%
460-00-4	4-Bromofluorobenzene	88%	90%	58-148%

(a) Outside in house control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-1

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	2500	2320	93	2390	96	3	80-118/10
79-01-6	Trichloroethene	2500	2290	92	2360	94	3	80-122/10

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	102%	80-124%
17060-07-0	1,2-Dichloroethane-D4	93%	94%	75-133%
2037-26-5	Toluene-D8	99%	99%	79-125%
460-00-4	4-Bromofluorobenzene	91%	90%	58-148%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-2, JD72373-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	364	182* a	335	168* a	8	52-156/12
71-43-2	Benzene	50	43.0	86	46.4	93	8	82-119/10
108-86-1	Bromobenzene	50	44.4	89	46.1	92	4	82-115/10
74-97-5	Bromochloromethane	50	55.0	110	56.0	112	2	82-123/10
75-27-4	Bromodichloromethane	50	40.0	80* b	42.6	85	6	83-121/10
75-25-2	Bromoform	50	46.8	94	47.7	95	2	74-138/10
74-83-9	Bromomethane	50	46.0	92	48.0	96	4	56-150/12
78-93-3	2-Butanone (MEK)	200	271	136	255	128	6	72-138/10
104-51-8	n-Butylbenzene	50	40.1	80* b	42.1	84	5	81-124/11
135-98-8	sec-Butylbenzene	50	40.3	81	40.5	81	0	78-120/10
98-06-6	tert-Butylbenzene	50	41.6	83	42.7	85	3	78-121/10
75-15-0	Carbon disulfide	50	51.9	104	53.0	106	2	67-131/11
56-23-5	Carbon tetrachloride	50	49.4	99	52.1	104	5	72-130/11
108-90-7	Chlorobenzene	50	45.1	90	47.2	94	5	83-114/10
75-00-3	Chloroethane	50	53.2	106	54.1	108	2	67-141/12
67-66-3	Chloroform	50	51.3	103	52.6	105	3	76-115/10
74-87-3	Chloromethane	50	54.2	108	55.4	111	2	57-141/13
95-49-8	o-Chlorotoluene	50	43.7	87	42.9	86	2	81-118/10
106-43-4	p-Chlorotoluene	50	42.8	86	42.6	85	0	78-117/10
108-20-3	Di-Isopropyl ether	50	55.2	110	58.0	116	5	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	50	35.0	70* c	37.4	75	7	72-131/11
124-48-1	Dibromochloromethane	50	44.2	88	45.6	91	3	80-128/10
106-93-4	1,2-Dibromoethane	50	48.5	97	48.8	98	1	58-145/10
95-50-1	1,2-Dichlorobenzene	50	41.1	82* b	45.7	91	11* d	83-117/10
541-73-1	1,3-Dichlorobenzene	50	42.2	84	43.1	86	2	82-114/10
106-46-7	1,4-Dichlorobenzene	50	43.9	88	45.4	91	3	79-114/10
75-71-8	Dichlorodifluoromethane	50	43.7	87	45.7	91	4	49-146/13
75-34-3	1,1-Dichloroethane	50	54.8	110	56.7	113	3	76-126/10
107-06-2	1,2-Dichloroethane	50	39.3	79	42.1	84	7	76-118/10
75-35-4	1,1-Dichloroethene	50	47.7	95	50.6	101	6	72-125/11
156-59-2	cis-1,2-Dichloroethene	50	52.7	105	51.9	104	2	80-118/10
156-60-5	trans-1,2-Dichloroethene	50	49.0	98	49.5	99	1	76-122/10
78-87-5	1,2-Dichloropropane	50	45.3	91	49.2	98	8	82-123/10
142-28-9	1,3-Dichloropropane	50	46.1	92	49.6	99	7	84-120/10
594-20-7	2,2-Dichloropropane	50	48.4	97	48.3	97	0	66-130/11
563-58-6	1,1-Dichloropropene	50	47.5	95	50.7	101	7	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-2, JD72373-5

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	40.2	80* b	44.7	89	11* d	83-123/10
10061-02-6	trans-1,3-Dichloropropene	50	45.5	91	47.5	95	4	83-123/10
123-91-1	1,4-Dioxane	1250	1220	98	1280	102	5	64-163/20
60-29-7	Ethyl Ether	50	55.6	111	54.0	108	3	78-131/10
100-41-4	Ethylbenzene	50	44.0	88	47.2	94	7	83-115/10
87-68-3	Hexachlorobutadiene	50	44.8	90	47.2	94	5	65-130/11
591-78-6	2-Hexanone	200	218	109	228	114	4	73-138/10
98-82-8	Isopropylbenzene	50	41.6	83	41.2	82	1	81-122/11
99-87-6	p-Isopropyltoluene	50	40.1	80	43.9	88	9	80-120/10
1634-04-4	Methyl Tert Butyl Ether	50	51.7	103	52.0	104	1	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	179	90	184	92	3	71-138/10
74-95-3	Methylene bromide	50	42.6	85	46.0	92	8	81-122/10
75-09-2	Methylene chloride	50	52.5	105	53.3	107	2	73-122/10
91-20-3	Naphthalene	50	38.5	77	42.0	84	9	71-129/14
103-65-1	n-Propylbenzene	50	40.2	80	41.1	82	2	77-120/10
100-42-5	Styrene	50	42.9	86	47.7	95	11* d	84-122/10
994-05-8	tert-Amyl Methyl Ether	50	43.6	87	47.4	95	8	77-125/11
637-92-3	tert-Butyl Ethyl Ether	50	58.3	117	59.1	118	1	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	50	47.0	94	49.7	99	6	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	50	41.5	83	44.9	90	8	75-127/10
127-18-4	Tetrachloroethene	50	44.4	89	49.7	99	11	73-125/11
109-99-9	Tetrahydrofuran	50	48.9	98	49.1	98	0	61-136/11
108-88-3	Toluene	50	46.6	93	48.6	97	4	82-118/10
87-61-6	1,2,3-Trichlorobenzene	50	41.3	83	44.2	88	7	68-132/13
120-82-1	1,2,4-Trichlorobenzene	50	43.3	87	47.2	94	9	72-133/12
71-55-6	1,1,1-Trichloroethane	50	50.5	101	53.7	107	6	77-124/11
79-00-5	1,1,2-Trichloroethane	50	46.7	93	47.9	96	3	83-122/10
79-01-6	Trichloroethene	50	42.6	85	47.1	94	10	80-122/10
75-69-4	Trichlorofluoromethane	50	47.9	96	49.8	100	4	69-132/11
96-18-4	1,2,3-Trichloropropane	50	46.2	92	45.3	91	2	80-120/10
95-63-6	1,2,4-Trimethylbenzene	50	43.8	88	44.6	89	2	80-119/10
108-67-8	1,3,5-Trimethylbenzene	50	42.1	84	41.4	83	2	79-120/10
75-01-4	Vinyl chloride	50	51.5	103	54.6	109	6	60-144/13
	m,p-Xylene	100	88.9	89	92.3	92	4	82-119/10
95-47-6	o-Xylene	50	42.9	86	48.8	98	13* d	84-120/10
1330-20-7	Xylene (total)	150	132	88	141	94	7	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72373-2, JD72373-5

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	115%	113%	80-124%
17060-07-0	1,2-Dichloroethane-D4	91%	94%	75-133%
2037-26-5	Toluene-D8	105%	107%	79-125%
460-00-4	4-Bromofluorobenzene	94%	94%	58-148%

- (a) High percent recovery and no associated positive reported in the QC batch.
- (b) Outside of in house control limits, but within reasonable method recovery limits.
- (c) Outside of in house control limits, but within the marginal exceedance limits.
- (d) Outside in house control limits.

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1C8501-CC8418	Injection Date:	09/08/23
Lab File ID:	1C196191.D	Injection Time:	09:53
Instrument ID:	GCMS1C	Method:	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	102459	7.10	345431	9.34	501749	10.25	389140	13.41	192282	15.74
Upper Limit ^a	204918	7.60	690862	9.84	1003498	10.75	778280	13.91	384564	16.24
Lower Limit ^b	51230	6.60	172716	8.84	250875	9.75	194570	12.91	96141	15.24

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V1C8501-BS	108564	7.10	352298	9.34	504408	10.25	391369	13.41	206557	15.73
V1C8501-BSD	104806	7.10	351961	9.34	499631	10.25	410009	13.41	206711	15.73
V1C8501-MB	103678	7.09	372136	9.34	522475	10.25	420067	13.41	203282	15.73
JD72365-1	110176	7.09	377292	9.34	516394	10.25	426789	13.41	211278	15.73
JD72365-2	104111	7.09	342823	9.34	490085	10.25	380338	13.41	178580	15.73
ZZZZZZ	101359	7.10	363628	9.34	504040	10.25	395942	13.41	198528	15.74
ZZZZZZ	112426	7.09	343435	9.34	475203	10.25	393721	13.41	192890	15.73
ZZZZZZ	74704	7.09	340634	9.34	495601	10.25	389292	13.41	185258	15.73
JD72365-1MS	108108	7.10	345939	9.34	491174	10.25	400667	13.41	203405	15.73
JD72365-2DUP	105102	7.09	356632	9.34	502104	10.25	390203	13.41	169632	15.73
JD72373-4	93695	7.10	356274	9.34	499601	10.25	401291	13.41	198593	15.73
ZZZZZZ	106670	7.09	354552	9.34	497177	10.26	412328	13.41	202491	15.73
ZZZZZZ	110428	7.10	365920	9.34	520917	10.25	416736	13.41	209124	15.73
JD72373-1	112135	7.09	353731	9.34	533019	10.25	431672	13.41	210756	15.73

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1C8503-CC8418	Injection Date:	09/12/23
Lab File ID:	1C196254.D	Injection Time:	09:48
Instrument ID:	GCMS1C	Method:	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	119196	7.09	432044	9.34	639510	10.25	488318	13.41	253637	15.73
Upper Limit ^a	238392	7.59	864088	9.84	1279020	10.75	976636	13.91	507274	16.23
Lower Limit ^b	59598	6.59	216022	8.84	319755	9.75	244159	12.91	126819	15.23

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V1C8503-BS	128004	7.10	432297	9.34	643251	10.25	498401	13.41	263144	15.73
V1C8503-BS D	123998	7.09	436540	9.34	627853	10.25	500852	13.41	264829	15.73
V1C8503-MB	128509	7.09	449216	9.34	655914	10.25	513903	13.41	258024	15.73
JD72387-1	132691	7.10	454597	9.34	681243	10.25	529268	13.41	257886	15.73
JD72387-2	123598	7.09	418695	9.34	626551	10.25	486718	13.41	234579	15.73
ZZZZZZ	120730	7.10	439264	9.34	639266	10.25	522632	13.41	250993	15.73
ZZZZZZ	123726	7.09	428376	9.34	636215	10.25	514685	13.41	245974	15.73
ZZZZZZ	108374	7.10	428819	9.34	647262	10.25	520430	13.41	261790	15.74
JD72387-2MS	119305	7.09	424036	9.34	635574	10.25	501729	13.41	262759	15.73
JD72387-1DUP	174111	7.09	432273	9.34	657772	10.25	554272	13.41	270961	15.73
ZZZZZZ	112789	7.09	423863	9.34	623792	10.25	523837	13.41	247400	15.73
ZZZZZZ	118944	7.09	428863	9.34	621363	10.25	507456	13.41	244485	15.73
ZZZZZZ	128903	7.09	458794	9.34	673149	10.25	526424	13.41	268607	15.73
ZZZZZZ	117876	7.10	432784	9.34	642103	10.25	543173	13.41	269317	15.73
JD72373-2	135021	7.09	442960	9.34	653801	10.25	543636	13.41	281014	15.73
JD72373-5	126281	7.10	427863	9.34	625418	10.25	540569	13.41	247576	15.73
ZZZZZZ	118047	7.10	435290	9.34	635750	10.25	532475	13.41	258952	15.73
ZZZZZZ	116435	7.10	430266	9.34	637882	10.25	502308	13.41	251007	15.73
ZZZZZZ	122830	7.09	441905	9.34	648800	10.25	508321	13.41	261432	15.73
ZZZZZZ	119874	7.10	420290	9.34	622985	10.25	494364	13.41	243325	15.74

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.3.2
6

Internal Standard Area Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V3D8039-CC8035	Injection Date: 09/08/23
Lab File ID: 3D192322.D	Injection Time: 10:34
Instrument ID: GCMS3D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	190943	2.69	475535	3.86	914795	4.40	794504	6.76	350709	8.94
Upper Limit ^a	381886	3.19	951070	4.36	1829590	4.90	1589008	7.26	701418	9.44
Lower Limit ^b	95472	2.19	237768	3.36	457398	3.90	397252	6.26	175355	8.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3D8039-BS	214037	2.69	500860	3.86	970173	4.40	851344	6.76	397791	8.93
V3D8039-BSD	245657	2.69	501593	3.86	959396	4.40	846074	6.76	393076	8.94
ZZZZZZ	217085	2.70	476618	3.86	912595	4.40	794947	6.76	357683	8.93
V3D8039-MB	217085	2.70	476618	3.86	912595	4.40	794947	6.76	357683	8.93
ZZZZZZ	213818	2.70	484155	3.86	908788	4.40	782898	6.76	349162	8.93
JD72373-3	228115	2.70	484403	3.86	922288	4.40	805186	6.76	355828	8.94
ZZZZZZ	236501	2.69	474780	3.86	915793	4.40	842764	6.76	410759	8.94
JD72361-1	235941	2.70	512750	3.86	1051343	4.40	1035759	6.76	466889	8.94
JD72361-1MS	252257	2.70	567560	3.86	1118880	4.40	1083620	6.76	514681	8.94
JD72361-1MSD	286148	2.70	630971	3.86	1240951	4.40	1153983	6.76	540327	8.94

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V3D8040-CC8035	Injection Date:	09/11/23
Lab File ID:	3D192340.D	Injection Time:	10:06
Instrument ID:	GCMS3D	Method:	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	219654	2.69	473501	3.86	936346	4.40	822400	6.76	357652	8.94
Upper Limit ^a	439308	3.19	947002	4.36	1872692	4.90	1644800	7.26	715304	9.44
Lower Limit ^b	109827	2.19	236751	3.36	468173	3.90	411200	6.26	178826	8.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3D8040-BS	200567	2.69	501181	3.86	979814	4.40	848470	6.76	381428	8.93
V3D8040-BSD	223652	2.69	499718	3.86	987889	4.40	860330	6.76	392502	8.94
V3D8040-MB	189806	2.70	468595	3.86	908102	4.40	788227	6.76	339045	8.93
ZZZZZZ	189806	2.70	468595	3.86	908102	4.40	788227	6.76	339045	8.93
ZZZZZZ	210591	2.70	464373	3.86	912403	4.40	785858	6.76	339641	8.93
ZZZZZZ	204100	2.70	470392	3.86	924637	4.40	796333	6.76	340938	8.94
ZZZZZZ	196527	2.70	470197	3.86	917133	4.40	795337	6.76	345236	8.94
ZZZZZZ	183450	2.70	455833	3.86	892060	4.40	771215	6.76	334599	8.94
ZZZZZZ	197966	2.70	459384	3.86	893449	4.40	767712	6.76	335284	8.94
ZZZZZZ	185942	2.70	453640	3.86	894251	4.40	778086	6.76	337040	8.94
JD72373-1	185390	2.70	447510	3.86	880099	4.40	766567	6.76	335519	8.94
JD72452-1	200045	2.70	475242	3.86	932141	4.40	807827	6.76	350422	8.94
ZZZZZZ	195999	2.70	452173	3.86	888835	4.40	775432	6.76	343414	8.94
ZZZZZZ	199050	2.70	451147	3.86	887320	4.40	771551	6.76	348145	8.93
ZZZZZZ	171175	2.70	444880	3.86	877906	4.40	762275	6.76	337740	8.94
ZZZZZZ	207342	2.70	456367	3.86	897277	4.40	782487	6.76	352638	8.94
ZZZZZZ	229081	2.70	484173	3.86	962037	4.40	859496	6.76	392865	8.94
JD72452-1MS	234300	2.70	526064	3.86	1033237	4.40	886238	6.76	412824	8.94
JD72452-1MSD	251445	2.71	526987	3.86	1017477	4.40	880115	6.76	416542	8.94
ZZZZZZ	193059	2.70	489300	3.86	953724	4.40	831040	6.76	370309	8.94
ZZZZZZ	162134	2.70	487662	3.86	934482	4.40	812683	6.76	353031	8.94
ZZZZZZ	163580	2.70	491823	3.86	924386	4.40	797297	6.76	353221	8.94
ZZZZZZ	154948	2.70	488530	3.86	912673	4.40	792362	6.76	353630	8.94
ZZZZZZ	151895	2.70	492420	3.86	914440	4.40	799580	6.76	361260	8.94
ZZZZZZ	169533	2.70	477839	3.86	897310	4.40	771883	6.76	334979	8.94
ZZZZZZ	173204	2.70	474539	3.86	881042	4.40	767322	6.76	343636	8.94
ZZZZZZ	159577	2.70	478415	3.86	885758	4.40	772683	6.76	342552	8.94

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

Internal Standard Area Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V3D8040-CC8035	Injection Date: 09/11/23
Lab File ID: 3D192340.D	Injection Time: 10:06
Instrument ID: GCMS3D	Method: SW846 8260D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD72373
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: SO
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD72373-1	3D192351.D	101	96	99	93
JD72373-1	1C196209.D	116	99	101	100
JD72373-2	1C196272.D	118	99	104	94
JD72373-3	3D192329.D	97	95	98	90
JD72373-4	1C196206.D	111	98	107	101
JD72373-5	1C196273.D	119	100	105	109
V1C8501-BS	1C196192.D	109	97	112	97
V1C8501-BSD	1C196193.D	109	99	106	100
V1C8501-MB	1C196196.D	109	97	106	101
V1C8503-BS	1C196256.D	115	91	105	94
V1C8503-BSD	1C196257.D	113	94	107	94
V1C8503-MB	1C196259.D	113	90	109	94
V3D8039-BS	3D192324.D	99	95	98	88
V3D8039-BSD	3D192325.D	97	97	97	90
V3D8039-MB	3D192327.D	96	96	99	89
V3D8040-BS	3D192341.D	100	93	99	91
V3D8040-BSD	3D192342.D	102	94	99	90
V3D8040-MB	3D192344.D	99	95	100	93

Surrogate Compounds

Recovery Limits

S1 = Dibromofluoromethane	80-124%
S2 = 1,2-Dichloroethane-D4	75-133%
S3 = Toluene-D8	79-125%
S4 = 4-Bromofluorobenzene	58-148%

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS105.A.CS.EV.08.78

SGS Job Number: JD72469

Sampling Dates: 09/07/23 - 09/08/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorette@jacobs.com; Bernice.Kidd@jacobs.com

ATTN: Raymond J. Cadorette

Total number of pages in report: **73**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

A blue ink signature of David Chastain.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200
Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD72469

Varian, Beverly, MA

Project No: VARMS105.A.CS.EV.08.78

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD72469-1	09/07/23	16:40	DK	09/08/23	SO	Soil	SB501_20230907_34-35_N_SO
JD72469-2	09/07/23	16:45	DK	09/08/23	SO	Soil	SB501_20230907_39-40_N_SO
JD72469-3	09/07/23	16:45	DK	09/08/23	SO	Soil	SB501_20230907_39-40_FD_SO
JD72469-4	09/07/23	17:30	DK	09/08/23	SO	Soil	SB501_20230907_44-45_N_SO
JD72469-5	09/07/23	17:55	DK	09/08/23	SO	Soil	SB501_20230907_49-50_N_SO
JD72469-6	09/07/23	18:15	DK	09/08/23	SO	Soil	SB501_20230907_54-55_N_SO
JD72469-7	09/08/23	08:55	DK	09/08/23	SO	Soil	SB501_20230908_55-56_N_SO
JD72469-8	09/08/23	09:20	DK	09/08/23	SO	Soil	SB501_20230908_62-63_N_SO
JD72469-9	09/08/23	09:20		09/08/23	SO	Trip Blank Methanol	TB_20230908_SO_03M
JD72469-10	09/08/23	09:20		09/08/23	SO	Trip Blank Soil	TB_20230908_SO_03L

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD72469

Site: Varian, Beverly, MA

Report Date 9/18/2023 2:22:55 PM

On 09/08/2023, 8 sample(s), 2 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 0.5 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD72469 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: SO

Batch ID: VIC8503

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Acetone, 1,2-Dichlorobenzene, Bromodichloromethane, cis-1,3-Dichloropropene, n-Butylbenzene, 1,2-Dibromo-3-chloropropane are outside control limits.
- VIC8503-BS for 1,2-Dichlorobenzene: Outside of in house control limits, but within reasonable method recovery limits.
- JD72469-1 for 1,2-Dichloroethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- VIC8503-BS for Acetone: High percent recovery and no associated positive reported in the QC batch.
- VIC8503-BS for Bromodichloromethane: Outside of in house control limits, but within reasonable method recovery limits.
- VIC8503-BS for cis-1,3-Dichloropropene: Outside of in house control limits, but within reasonable method recovery limits.
- VIC8503-BS for n-Butylbenzene: Outside of in house control limits, but within reasonable method recovery limits.
- VIC8503-BS for 1,2-Dibromo-3-chloropropane: Outside of in house control limits, but within the marginal exceedance limits.
- VIC8503-BSD for 1,2-Dichlorobenzene: Outside in house control limits.
- JD72469-1 for 1,2-Dibromo-3-chloropropane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- VIC8503-BSD for o-Xylene: Outside in house control limits.
- VIC8503-BSD for Styrene: Outside in house control limits.
- JD72469-10 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72469-10 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72469-10 for 1,2-Dibromo-3-chloropropane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD72469-10 for 1,2-Dichloroethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD72469-1 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- JD72469-1 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- VIC8503-BSD for cis-1,3-Dichloropropene: Outside in house control limits.
- Not all RL meets the requirement.

Matrix: SO

Batch ID: V3D8040

- All samples were analyzed within the recommended method holding time.

Monday, September 18, 2023

Page 1 of 2

MS Volatiles By Method SW846 8260D

Matrix: SO

Batch ID: V3D8040

- All method blanks for this batch meet method specific criteria.
- JD72469-4: Dilution required due to high concentration of target compound.
- JD72469-8: Dilution required due to high concentration of target compound.
- JD72469-2: Dilution required due to high concentration of target compound.
- JD72469-7: Dilution required due to high concentration of target compound.
- JD72469-3: Dilution required due to high concentration of target compound.
- JD72469-6: Dilution required due to high concentration of target compound.
- JD72469-5: Dilution required due to high concentration of target compound.
- JD72469-2 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-2 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- JD72469-3 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-3 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- JD72469-4 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-4 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- JD72469-5 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-5 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- JD72469-6 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-6 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- JD72469-7 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-8 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-8 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- JD72469-7 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- V3D8040-BSD for Acetone: Outside in house control limits.
- JD72469-9 for 1,4-Dioxane: Associated CCV outside of control limits high, sample was ND.
- JD72469-9 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.

General Chemistry By Method SM2540 G 18TH ED MOD

Matrix: SO

Batch ID: GN45841

- The data for SM2540 G 18TH ED MOD meets quality control requirements.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Summary of Hits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23



Lab Sample ID	Client Sample ID	Result/ Analyte	Qual	RL	MDL	Units	Method
JD72469-1	SB501_20230907_34-35_N_SO						
		Acetone ^a	9.1	8.8		ug/kg	SW846 8260D
		Tetrachloroethene	5.8	1.8		ug/kg	SW846 8260D
		Trichloroethene	1.8	0.88		ug/kg	SW846 8260D
JD72469-2	SB501_20230907_39-40_N_SO						
		Tetrachloroethene ^b	472	110		ug/kg	SW846 8260D
		Trichloroethene ^b	395	54		ug/kg	SW846 8260D
JD72469-3	SB501_20230907_39-40_FD_SO						
		Tetrachloroethene ^b	403	110		ug/kg	SW846 8260D
		Trichloroethene ^b	374	53		ug/kg	SW846 8260D
JD72469-4	SB501_20230907_44-45_N_SO						
		Tetrachloroethene ^b	766	110		ug/kg	SW846 8260D
		Trichloroethene ^b	1360	56		ug/kg	SW846 8260D
JD72469-5	SB501_20230907_49-50_N_SO						
		cis-1,2-Dichloroethene ^b	565	45		ug/kg	SW846 8260D
		Tetrachloroethene ^b	123	89		ug/kg	SW846 8260D
		Trichloroethene ^b	4950	45		ug/kg	SW846 8260D
JD72469-6	SB501_20230907_54-55_N_SO						
		cis-1,2-Dichloroethene ^b	135	49		ug/kg	SW846 8260D
		Trichloroethene ^b	1960	49		ug/kg	SW846 8260D
JD72469-7	SB501_20230908_55-56_N_SO						
		cis-1,2-Dichloroethene ^b	78.2	51		ug/kg	SW846 8260D
		Tetrachloroethene ^b	492	100		ug/kg	SW846 8260D
		Trichloroethene ^b	1650	51		ug/kg	SW846 8260D
JD72469-8	SB501_20230908_62-63_N_SO						
		cis-1,2-Dichloroethene ^b	76.8	46		ug/kg	SW846 8260D
		Tetrachloroethene ^b	150	92		ug/kg	SW846 8260D
		Trichloroethene ^b	970	46		ug/kg	SW846 8260D

Summary of Hits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD72469-9 **TB_20230908_SO_03M**

No hits reported in this sample.

JD72469-10 **TB_20230908_SO_03L**

Acetone ^a	18.8	10		ug/kg	SW846 8260D
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- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Dilution required due to high concentration of target compound.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	SB501_20230907_34-35_N_SO	Date Sampled:	09/07/23
Lab Sample ID:	JD72469-1	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	94.8
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196274.D	1	09/12/23 19:00	JN	n/a	n/a	V1C8503
Run #2							

Run #1	Initial Weight
Run #1	6.0 g
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	9.1	8.8	ug/kg	
71-43-2	Benzene	ND	0.44	ug/kg	
108-86-1	Bromobenzene	ND	4.4	ug/kg	
74-97-5	Bromochloromethane	ND	4.4	ug/kg	
75-27-4	Bromodichloromethane	ND	1.8	ug/kg	
75-25-2	Bromoform	ND	4.4	ug/kg	
74-83-9	Bromomethane	ND	4.4	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	8.8	ug/kg	
104-51-8	n-Butylbenzene	ND	1.8	ug/kg	
135-98-8	sec-Butylbenzene	ND	1.8	ug/kg	
98-06-6	tert-Butylbenzene	ND	1.8	ug/kg	
75-15-0	Carbon disulfide	ND	1.8	ug/kg	
56-23-5	Carbon tetrachloride	ND	1.8	ug/kg	
108-90-7	Chlorobenzene	ND	1.8	ug/kg	
75-00-3	Chloroethane	ND	4.4	ug/kg	
67-66-3	Chloroform	ND	1.8	ug/kg	
74-87-3	Chloromethane	ND	4.4	ug/kg	
95-49-8	o-Chlorotoluene	ND	1.8	ug/kg	
106-43-4	p-Chlorotoluene	ND	1.8	ug/kg	
108-20-3	Di-Isopropyl ether	ND	1.8	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropan ^c	ND	1.8	ug/kg	
124-48-1	Dibromochloromethane	ND	1.8	ug/kg	
106-93-4	1,2-Dibromoethane	ND	0.88	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	0.88	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	0.88	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	0.88	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	4.4	ug/kg	
75-34-3	1,1-Dichloroethane	ND	0.88	ug/kg	
107-06-2	1,2-Dichloroethane ^c	ND	0.88	ug/kg	
75-35-4	1,1-Dichloroethene	ND	0.88	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	0.88	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	0.88	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_34-35_N_SO**Lab Sample ID:** JD72469-1**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/07/23**Date Received:** 09/08/23**Percent Solids:** 94.8

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.8	ug/kg	
142-28-9	1,3-Dichloropropane	ND	1.8	ug/kg	
594-20-7	2,2-Dichloropropane	ND	1.8	ug/kg	
563-58-6	1,1-Dichloropropene	ND	1.8	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	1.8	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	1.8	ug/kg	
123-91-1	1,4-Dioxane	ND	110	ug/kg	
60-29-7	Ethyl Ether	ND	1.8	ug/kg	
100-41-4	Ethylbenzene	ND	0.88	ug/kg	
87-68-3	Hexachlorobutadiene	ND	4.4	ug/kg	
591-78-6	2-Hexanone	ND	4.4	ug/kg	
98-82-8	Isopropylbenzene	ND	1.8	ug/kg	
99-87-6	p-Isopropyltoluene	ND	1.8	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	0.88	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	4.4	ug/kg	
74-95-3	Methylene bromide	ND	4.4	ug/kg	
75-09-2	Methylene chloride	ND	4.4	ug/kg	
91-20-3	Naphthalene	ND	4.4	ug/kg	
103-65-1	n-Propylbenzene	ND	1.8	ug/kg	
100-42-5	Styrene	ND	1.8	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	1.8	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	1.8	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.8	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.8	ug/kg	
127-18-4	Tetrachloroethene	5.8	1.8	ug/kg	
109-99-9	Tetrahydrofuran	ND	8.8	ug/kg	
108-88-3	Toluene	ND	0.88	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	4.4	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	4.4	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	1.8	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	1.8	ug/kg	
79-01-6	Trichloroethene	1.8	0.88	ug/kg	
75-69-4	Trichlorofluoromethane	ND	4.4	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	4.4	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	1.8	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	ug/kg	
75-01-4	Vinyl chloride	ND	1.8	ug/kg	
	m,p-Xylene	ND	0.88	ug/kg	
95-47-6	o-Xylene	ND	0.88	ug/kg	
1330-20-7	Xylene (total)	ND	0.88	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_34-35_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-1	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 94.8
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		80-124%
17060-07-0	1,2-Dichloroethane-D4	96%		75-133%
2037-26-5	Toluene-D8	104%		79-125%
460-00-4	4-Bromofluorobenzene	98%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: SB501_20230907_39-40_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-2	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 88.6
Method: SW846 8260D	
Project: Varian, Beverly, MA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192364.D	1	09/11/23 19:51	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	11.8 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	540	ug/kg	
71-43-2	Benzene	ND	27	ug/kg	
108-86-1	Bromobenzene	ND	270	ug/kg	
74-97-5	Bromochloromethane	ND	270	ug/kg	
75-27-4	Bromodichloromethane	ND	110	ug/kg	
75-25-2	Bromoform	ND	270	ug/kg	
74-83-9	Bromomethane	ND	270	ug/kg	
78-93-3	2-Butanone (MEK)	ND	540	ug/kg	
104-51-8	n-Butylbenzene	ND	110	ug/kg	
135-98-8	sec-Butylbenzene	ND	110	ug/kg	
98-06-6	tert-Butylbenzene	ND	110	ug/kg	
75-15-0	Carbon disulfide	ND	110	ug/kg	
56-23-5	Carbon tetrachloride	ND	110	ug/kg	
108-90-7	Chlorobenzene	ND	110	ug/kg	
75-00-3	Chloroethane	ND	270	ug/kg	
67-66-3	Chloroform	ND	110	ug/kg	
74-87-3	Chloromethane	ND	270	ug/kg	
95-49-8	o-Chlorotoluene	ND	110	ug/kg	
106-43-4	p-Chlorotoluene	ND	110	ug/kg	
108-20-3	Di-Isopropyl ether	ND	110	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	110	ug/kg	
124-48-1	Dibromochloromethane	ND	110	ug/kg	
106-93-4	1,2-Dibromoethane	ND	54	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	54	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	54	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	54	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	270	ug/kg	
75-34-3	1,1-Dichloroethane	ND	54	ug/kg	
107-06-2	1,2-Dichloroethane	ND	54	ug/kg	
75-35-4	1,1-Dichloroethene	ND	54	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	54	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	54	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: SB501_20230907_39-40_N_SO

Lab Sample ID: JD72469-2

Matrix: SO - Soil

Method: SW846 8260D

Project: Varian, Beverly, MA

Date Sampled: 09/07/23

Date Received: 09/08/23

Percent Solids: 88.6

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	110	ug/kg	
142-28-9	1,3-Dichloropropane	ND	110	ug/kg	
594-20-7	2,2-Dichloropropane	ND	110	ug/kg	
563-58-6	1,1-Dichloropropene	ND	110	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	110	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	110	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	6800	ug/kg	
60-29-7	Ethyl Ether	ND	110	ug/kg	
100-41-4	Ethylbenzene	ND	54	ug/kg	
87-68-3	Hexachlorobutadiene	ND	270	ug/kg	
591-78-6	2-Hexanone	ND	270	ug/kg	
98-82-8	Isopropylbenzene	ND	110	ug/kg	
99-87-6	p-Isopropyltoluene	ND	110	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	54	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	270	ug/kg	
74-95-3	Methylene bromide	ND	270	ug/kg	
75-09-2	Methylene chloride	ND	270	ug/kg	
91-20-3	Naphthalene	ND	270	ug/kg	
103-65-1	n-Propylbenzene	ND	110	ug/kg	
100-42-5	Styrene	ND	110	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	110	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	110	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	110	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	110	ug/kg	
127-18-4	Tetrachloroethene	472	110	ug/kg	
109-99-9	Tetrahydrofuran	ND	540	ug/kg	
108-88-3	Toluene	ND	54	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	270	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	270	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	110	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	110	ug/kg	
79-01-6	Trichloroethene	395	54	ug/kg	
75-69-4	Trichlorofluoromethane	ND	270	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	270	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	110	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	110	ug/kg	
75-01-4	Vinyl chloride	ND	110	ug/kg	
	m,p-Xylene	ND	54	ug/kg	
95-47-6	o-Xylene	ND	54	ug/kg	
1330-20-7	Xylene (total)	ND	54	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_39-40_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-2	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 88.6
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		80-124%
17060-07-0	1,2-Dichloroethane-D4	94%		75-133%
2037-26-5	Toluene-D8	99%		79-125%
460-00-4	4-Bromofluorobenzene	92%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	SB501_20230907_39-40_FD_SO	Date Sampled:	09/07/23
Lab Sample ID:	JD72469-3	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	87.8
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192365.D	1	09/11/23 20:12	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	12.3 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	530	ug/kg	
71-43-2	Benzene	ND	27	ug/kg	
108-86-1	Bromobenzene	ND	270	ug/kg	
74-97-5	Bromochloromethane	ND	270	ug/kg	
75-27-4	Bromodichloromethane	ND	110	ug/kg	
75-25-2	Bromoform	ND	270	ug/kg	
74-83-9	Bromomethane	ND	270	ug/kg	
78-93-3	2-Butanone (MEK)	ND	530	ug/kg	
104-51-8	n-Butylbenzene	ND	110	ug/kg	
135-98-8	sec-Butylbenzene	ND	110	ug/kg	
98-06-6	tert-Butylbenzene	ND	110	ug/kg	
75-15-0	Carbon disulfide	ND	110	ug/kg	
56-23-5	Carbon tetrachloride	ND	110	ug/kg	
108-90-7	Chlorobenzene	ND	110	ug/kg	
75-00-3	Chloroethane	ND	270	ug/kg	
67-66-3	Chloroform	ND	110	ug/kg	
74-87-3	Chloromethane	ND	270	ug/kg	
95-49-8	o-Chlorotoluene	ND	110	ug/kg	
106-43-4	p-Chlorotoluene	ND	110	ug/kg	
108-20-3	Di-Isopropyl ether	ND	110	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	110	ug/kg	
124-48-1	Dibromochloromethane	ND	110	ug/kg	
106-93-4	1,2-Dibromoethane	ND	53	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	53	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	53	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	53	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	270	ug/kg	
75-34-3	1,1-Dichloroethane	ND	53	ug/kg	
107-06-2	1,2-Dichloroethane	ND	53	ug/kg	
75-35-4	1,1-Dichloroethene	ND	53	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	53	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	53	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SB501_20230907_39-40_FD_SO	Date Sampled:	09/07/23
Lab Sample ID:	JD72469-3	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	87.8
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	110	ug/kg	
142-28-9	1,3-Dichloropropane	ND	110	ug/kg	
594-20-7	2,2-Dichloropropane	ND	110	ug/kg	
563-58-6	1,1-Dichloropropene	ND	110	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	110	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	110	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	6700	ug/kg	
60-29-7	Ethyl Ether	ND	110	ug/kg	
100-41-4	Ethylbenzene	ND	53	ug/kg	
87-68-3	Hexachlorobutadiene	ND	270	ug/kg	
591-78-6	2-Hexanone	ND	270	ug/kg	
98-82-8	Isopropylbenzene	ND	110	ug/kg	
99-87-6	p-Isopropyltoluene	ND	110	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	53	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	270	ug/kg	
74-95-3	Methylene bromide	ND	270	ug/kg	
75-09-2	Methylene chloride	ND	270	ug/kg	
91-20-3	Naphthalene	ND	270	ug/kg	
103-65-1	n-Propylbenzene	ND	110	ug/kg	
100-42-5	Styrene	ND	110	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	110	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	110	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	110	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	110	ug/kg	
127-18-4	Tetrachloroethene	403	110	ug/kg	
109-99-9	Tetrahydrofuran	ND	530	ug/kg	
108-88-3	Toluene	ND	53	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	270	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	270	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	110	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	110	ug/kg	
79-01-6	Trichloroethene	374	53	ug/kg	
75-69-4	Trichlorofluoromethane	ND	270	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	270	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	110	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	110	ug/kg	
75-01-4	Vinyl chloride	ND	110	ug/kg	
	m,p-Xylene	ND	53	ug/kg	
95-47-6	o-Xylene	ND	53	ug/kg	
1330-20-7	Xylene (total)	ND	53	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_39-40_FD_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-3	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 87.8
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		80-124%
17060-07-0	1,2-Dichloroethane-D4	95%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	90%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID:	SB501_20230907_44-45_N_SO	Date Sampled:	09/07/23
Lab Sample ID:	JD72469-4	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	84.0
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192366.D	1	09/11/23 20:34	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	12.7 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	560	ug/kg	
71-43-2	Benzene	ND	28	ug/kg	
108-86-1	Bromobenzene	ND	280	ug/kg	
74-97-5	Bromochloromethane	ND	280	ug/kg	
75-27-4	Bromodichloromethane	ND	110	ug/kg	
75-25-2	Bromoform	ND	280	ug/kg	
74-83-9	Bromomethane	ND	280	ug/kg	
78-93-3	2-Butanone (MEK)	ND	560	ug/kg	
104-51-8	n-Butylbenzene	ND	110	ug/kg	
135-98-8	sec-Butylbenzene	ND	110	ug/kg	
98-06-6	tert-Butylbenzene	ND	110	ug/kg	
75-15-0	Carbon disulfide	ND	110	ug/kg	
56-23-5	Carbon tetrachloride	ND	110	ug/kg	
108-90-7	Chlorobenzene	ND	110	ug/kg	
75-00-3	Chloroethane	ND	280	ug/kg	
67-66-3	Chloroform	ND	110	ug/kg	
74-87-3	Chloromethane	ND	280	ug/kg	
95-49-8	o-Chlorotoluene	ND	110	ug/kg	
106-43-4	p-Chlorotoluene	ND	110	ug/kg	
108-20-3	Di-Isopropyl ether	ND	110	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	110	ug/kg	
124-48-1	Dibromochloromethane	ND	110	ug/kg	
106-93-4	1,2-Dibromoethane	ND	56	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	56	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	56	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	56	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	280	ug/kg	
75-34-3	1,1-Dichloroethane	ND	56	ug/kg	
107-06-2	1,2-Dichloroethane	ND	56	ug/kg	
75-35-4	1,1-Dichloroethene	ND	56	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	56	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	56	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_44-45_N_SO

Lab Sample ID: JD72469-4

Matrix: SO - Soil

Method: SW846 8260D

Project: Varian, Beverly, MA

Date Sampled: 09/07/23

Date Received: 09/08/23

Percent Solids: 84.0

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	110	ug/kg	
142-28-9	1,3-Dichloropropane	ND	110	ug/kg	
594-20-7	2,2-Dichloropropane	ND	110	ug/kg	
563-58-6	1,1-Dichloropropene	ND	110	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	110	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	110	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	7000	ug/kg	
60-29-7	Ethyl Ether	ND	110	ug/kg	
100-41-4	Ethylbenzene	ND	56	ug/kg	
87-68-3	Hexachlorobutadiene	ND	280	ug/kg	
591-78-6	2-Hexanone	ND	280	ug/kg	
98-82-8	Isopropylbenzene	ND	110	ug/kg	
99-87-6	p-Isopropyltoluene	ND	110	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	56	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	280	ug/kg	
74-95-3	Methylene bromide	ND	280	ug/kg	
75-09-2	Methylene chloride	ND	280	ug/kg	
91-20-3	Naphthalene	ND	280	ug/kg	
103-65-1	n-Propylbenzene	ND	110	ug/kg	
100-42-5	Styrene	ND	110	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	110	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	110	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	110	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	110	ug/kg	
127-18-4	Tetrachloroethene	766	110	ug/kg	
109-99-9	Tetrahydrofuran	ND	560	ug/kg	
108-88-3	Toluene	ND	56	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	280	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	280	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	110	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	110	ug/kg	
79-01-6	Trichloroethene	1360	56	ug/kg	
75-69-4	Trichlorofluoromethane	ND	280	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	280	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	110	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	110	ug/kg	
75-01-4	Vinyl chloride	ND	110	ug/kg	
	m,p-Xylene	ND	56	ug/kg	
95-47-6	o-Xylene	ND	56	ug/kg	
1330-20-7	Xylene (total)	ND	56	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_44-45_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-4	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 84.0
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-124%
17060-07-0	1,2-Dichloroethane-D4	94%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	92%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID:	SB501_20230907_49-50_N_SO	Date Sampled:	09/07/23
Lab Sample ID:	JD72469-5	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	87.8
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192367.D	1	09/11/23 20:55	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	15.1 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	450	ug/kg	
71-43-2	Benzene	ND	22	ug/kg	
108-86-1	Bromobenzene	ND	220	ug/kg	
74-97-5	Bromochloromethane	ND	220	ug/kg	
75-27-4	Bromodichloromethane	ND	89	ug/kg	
75-25-2	Bromoform	ND	220	ug/kg	
74-83-9	Bromomethane	ND	220	ug/kg	
78-93-3	2-Butanone (MEK)	ND	450	ug/kg	
104-51-8	n-Butylbenzene	ND	89	ug/kg	
135-98-8	sec-Butylbenzene	ND	89	ug/kg	
98-06-6	tert-Butylbenzene	ND	89	ug/kg	
75-15-0	Carbon disulfide	ND	89	ug/kg	
56-23-5	Carbon tetrachloride	ND	89	ug/kg	
108-90-7	Chlorobenzene	ND	89	ug/kg	
75-00-3	Chloroethane	ND	220	ug/kg	
67-66-3	Chloroform	ND	89	ug/kg	
74-87-3	Chloromethane	ND	220	ug/kg	
95-49-8	o-Chlorotoluene	ND	89	ug/kg	
106-43-4	p-Chlorotoluene	ND	89	ug/kg	
108-20-3	Di-Isopropyl ether	ND	89	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	89	ug/kg	
124-48-1	Dibromochloromethane	ND	89	ug/kg	
106-93-4	1,2-Dibromoethane	ND	45	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	45	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	45	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	45	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	220	ug/kg	
75-34-3	1,1-Dichloroethane	ND	45	ug/kg	
107-06-2	1,2-Dichloroethane	ND	45	ug/kg	
75-35-4	1,1-Dichloroethene	ND	45	ug/kg	
156-59-2	cis-1,2-Dichloroethene	565	45	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	45	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_49-50_N_SO**Lab Sample ID:** JD72469-5**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/07/23**Date Received:** 09/08/23**Percent Solids:** 87.8

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	89	ug/kg	
142-28-9	1,3-Dichloropropane	ND	89	ug/kg	
594-20-7	2,2-Dichloropropane	ND	89	ug/kg	
563-58-6	1,1-Dichloropropene	ND	89	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	89	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	89	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	5600	ug/kg	
60-29-7	Ethyl Ether	ND	89	ug/kg	
100-41-4	Ethylbenzene	ND	45	ug/kg	
87-68-3	Hexachlorobutadiene	ND	220	ug/kg	
591-78-6	2-Hexanone	ND	220	ug/kg	
98-82-8	Isopropylbenzene	ND	89	ug/kg	
99-87-6	p-Isopropyltoluene	ND	89	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	45	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	220	ug/kg	
74-95-3	Methylene bromide	ND	220	ug/kg	
75-09-2	Methylene chloride	ND	220	ug/kg	
91-20-3	Naphthalene	ND	220	ug/kg	
103-65-1	n-Propylbenzene	ND	89	ug/kg	
100-42-5	Styrene	ND	89	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	89	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	89	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	89	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	89	ug/kg	
127-18-4	Tetrachloroethene	123	89	ug/kg	
109-99-9	Tetrahydrofuran	ND	450	ug/kg	
108-88-3	Toluene	ND	45	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	220	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	220	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	89	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	89	ug/kg	
79-01-6	Trichloroethene	4950	45	ug/kg	
75-69-4	Trichlorofluoromethane	ND	220	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	220	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	89	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	89	ug/kg	
75-01-4	Vinyl chloride	ND	89	ug/kg	
	m,p-Xylene	ND	45	ug/kg	
95-47-6	o-Xylene	ND	45	ug/kg	
1330-20-7	Xylene (total)	ND	45	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_49-50_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-5	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 87.8
Method: SW846 8260D	
Project: Varian, Beverly, MA	

4.5
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		80-124%
17060-07-0	1,2-Dichloroethane-D4	93%		75-133%
2037-26-5	Toluene-D8	99%		79-125%
460-00-4	4-Bromofluorobenzene	88%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_54-55_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-6	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 91.3
Method: SW846 8260D	
Project: Varian, Beverly, MA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192368.D	1	09/11/23 21:17	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	12.3 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	490	ug/kg	
71-43-2	Benzene	ND	25	ug/kg	
108-86-1	Bromobenzene	ND	250	ug/kg	
74-97-5	Bromochloromethane	ND	250	ug/kg	
75-27-4	Bromodichloromethane	ND	99	ug/kg	
75-25-2	Bromoform	ND	250	ug/kg	
74-83-9	Bromomethane	ND	250	ug/kg	
78-93-3	2-Butanone (MEK)	ND	490	ug/kg	
104-51-8	n-Butylbenzene	ND	99	ug/kg	
135-98-8	sec-Butylbenzene	ND	99	ug/kg	
98-06-6	tert-Butylbenzene	ND	99	ug/kg	
75-15-0	Carbon disulfide	ND	99	ug/kg	
56-23-5	Carbon tetrachloride	ND	99	ug/kg	
108-90-7	Chlorobenzene	ND	99	ug/kg	
75-00-3	Chloroethane	ND	250	ug/kg	
67-66-3	Chloroform	ND	99	ug/kg	
74-87-3	Chloromethane	ND	250	ug/kg	
95-49-8	o-Chlorotoluene	ND	99	ug/kg	
106-43-4	p-Chlorotoluene	ND	99	ug/kg	
108-20-3	Di-Isopropyl ether	ND	99	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	99	ug/kg	
124-48-1	Dibromochloromethane	ND	99	ug/kg	
106-93-4	1,2-Dibromoethane	ND	49	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	49	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	49	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	49	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	ug/kg	
75-34-3	1,1-Dichloroethane	ND	49	ug/kg	
107-06-2	1,2-Dichloroethane	ND	49	ug/kg	
75-35-4	1,1-Dichloroethene	ND	49	ug/kg	
156-59-2	cis-1,2-Dichloroethene	135	49	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	49	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_54-55_N_SO

Lab Sample ID: JD72469-6

Matrix: SO - Soil

Method: SW846 8260D

Project: Varian, Beverly, MA

Date Sampled: 09/07/23

Date Received: 09/08/23

Percent Solids: 91.3

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	99	ug/kg	
142-28-9	1,3-Dichloropropane	ND	99	ug/kg	
594-20-7	2,2-Dichloropropane	ND	99	ug/kg	
563-58-6	1,1-Dichloropropene	ND	99	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	99	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	99	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	6200	ug/kg	
60-29-7	Ethyl Ether	ND	99	ug/kg	
100-41-4	Ethylbenzene	ND	49	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	ug/kg	
591-78-6	2-Hexanone	ND	250	ug/kg	
98-82-8	Isopropylbenzene	ND	99	ug/kg	
99-87-6	p-Isopropyltoluene	ND	99	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	49	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg	
74-95-3	Methylene bromide	ND	250	ug/kg	
75-09-2	Methylene chloride	ND	250	ug/kg	
91-20-3	Naphthalene	ND	250	ug/kg	
103-65-1	n-Propylbenzene	ND	99	ug/kg	
100-42-5	Styrene	ND	99	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	99	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	99	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	99	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	99	ug/kg	
127-18-4	Tetrachloroethene	ND	99	ug/kg	
109-99-9	Tetrahydrofuran	ND	490	ug/kg	
108-88-3	Toluene	ND	49	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	99	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	99	ug/kg	
79-01-6	Trichloroethene	1960	49	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	99	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	99	ug/kg	
75-01-4	Vinyl chloride	ND	99	ug/kg	
	m,p-Xylene	ND	49	ug/kg	
95-47-6	o-Xylene	ND	49	ug/kg	
1330-20-7	Xylene (total)	ND	49	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230907_54-55_N_SO	Date Sampled: 09/07/23
Lab Sample ID: JD72469-6	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 91.3
Method: SW846 8260D	
Project: Varian, Beverly, MA	

4.6
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		80-124%
17060-07-0	1,2-Dichloroethane-D4	93%		75-133%
2037-26-5	Toluene-D8	99%		79-125%
460-00-4	4-Bromofluorobenzene	92%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SB501_20230908_55-56_N_SO	Date Sampled:	09/08/23
Lab Sample ID:	JD72469-7	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	89.5
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192369.D	1	09/11/23 21:38	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	12.3 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	510	ug/kg	
71-43-2	Benzene	ND	26	ug/kg	
108-86-1	Bromobenzene	ND	260	ug/kg	
74-97-5	Bromochloromethane	ND	260	ug/kg	
75-27-4	Bromodichloromethane	ND	100	ug/kg	
75-25-2	Bromoform	ND	260	ug/kg	
74-83-9	Bromomethane	ND	260	ug/kg	
78-93-3	2-Butanone (MEK)	ND	510	ug/kg	
104-51-8	n-Butylbenzene	ND	100	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	ug/kg	
75-15-0	Carbon disulfide	ND	100	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	ug/kg	
108-90-7	Chlorobenzene	ND	100	ug/kg	
75-00-3	Chloroethane	ND	260	ug/kg	
67-66-3	Chloroform	ND	100	ug/kg	
74-87-3	Chloromethane	ND	260	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	ug/kg	
108-20-3	Di-Isopropyl ether	ND	100	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	ug/kg	
124-48-1	Dibromochloromethane	ND	100	ug/kg	
106-93-4	1,2-Dibromoethane	ND	51	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	51	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	51	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	51	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	260	ug/kg	
75-34-3	1,1-Dichloroethane	ND	51	ug/kg	
107-06-2	1,2-Dichloroethane	ND	51	ug/kg	
75-35-4	1,1-Dichloroethene	ND	51	ug/kg	
156-59-2	cis-1,2-Dichloroethene	78.2	51	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	51	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230908_55-56_N_SO**Lab Sample ID:** JD72469-7**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/08/23**Date Received:** 09/08/23**Percent Solids:** 89.5

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	100	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	100	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	6400	ug/kg	
60-29-7	Ethyl Ether	ND	100	ug/kg	
100-41-4	Ethylbenzene	ND	51	ug/kg	
87-68-3	Hexachlorobutadiene	ND	260	ug/kg	
591-78-6	2-Hexanone	ND	260	ug/kg	
98-82-8	Isopropylbenzene	ND	100	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	51	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	260	ug/kg	
74-95-3	Methylene bromide	ND	260	ug/kg	
75-09-2	Methylene chloride	ND	260	ug/kg	
91-20-3	Naphthalene	ND	260	ug/kg	
103-65-1	n-Propylbenzene	ND	100	ug/kg	
100-42-5	Styrene	ND	100	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	100	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	ug/kg	
127-18-4	Tetrachloroethene	492	100	ug/kg	
109-99-9	Tetrahydrofuran	ND	510	ug/kg	
108-88-3	Toluene	ND	51	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	260	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	260	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	ug/kg	
79-01-6	Trichloroethene	1650	51	ug/kg	
75-69-4	Trichlorofluoromethane	ND	260	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	260	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	ug/kg	
75-01-4	Vinyl chloride	ND	100	ug/kg	
	m,p-Xylene	ND	51	ug/kg	
95-47-6	o-Xylene	ND	51	ug/kg	
1330-20-7	Xylene (total)	ND	51	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230908_55-56_N_SO	Date Sampled: 09/08/23
Lab Sample ID: JD72469-7	Date Received: 09/08/23
Matrix: SO - Soil	Percent Solids: 89.5
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		80-124%
17060-07-0	1,2-Dichloroethane-D4	95%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	89%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID:	SB501_20230908_62-63_N_SO	Date Sampled:	09/08/23
Lab Sample ID:	JD72469-8	Date Received:	09/08/23
Matrix:	SO - Soil	Percent Solids:	86.4
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	3D192370.D	1	09/11/23 22:00	JN	n/a	n/a	V3D8040
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	15.2 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	460	ug/kg	
71-43-2	Benzene	ND	23	ug/kg	
108-86-1	Bromobenzene	ND	230	ug/kg	
74-97-5	Bromochloromethane	ND	230	ug/kg	
75-27-4	Bromodichloromethane	ND	92	ug/kg	
75-25-2	Bromoform	ND	230	ug/kg	
74-83-9	Bromomethane	ND	230	ug/kg	
78-93-3	2-Butanone (MEK)	ND	460	ug/kg	
104-51-8	n-Butylbenzene	ND	92	ug/kg	
135-98-8	sec-Butylbenzene	ND	92	ug/kg	
98-06-6	tert-Butylbenzene	ND	92	ug/kg	
75-15-0	Carbon disulfide	ND	92	ug/kg	
56-23-5	Carbon tetrachloride	ND	92	ug/kg	
108-90-7	Chlorobenzene	ND	92	ug/kg	
75-00-3	Chloroethane	ND	230	ug/kg	
67-66-3	Chloroform	ND	92	ug/kg	
74-87-3	Chloromethane	ND	230	ug/kg	
95-49-8	o-Chlorotoluene	ND	92	ug/kg	
106-43-4	p-Chlorotoluene	ND	92	ug/kg	
108-20-3	Di-Isopropyl ether	ND	92	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	92	ug/kg	
124-48-1	Dibromochloromethane	ND	92	ug/kg	
106-93-4	1,2-Dibromoethane	ND	46	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	46	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	46	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	46	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	230	ug/kg	
75-34-3	1,1-Dichloroethane	ND	46	ug/kg	
107-06-2	1,2-Dichloroethane	ND	46	ug/kg	
75-35-4	1,1-Dichloroethene	ND	46	ug/kg	
156-59-2	cis-1,2-Dichloroethene	76.8	46	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	46	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230908_62-63_N_SO**Lab Sample ID:** JD72469-8**Matrix:** SO - Soil**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/08/23**Date Received:** 09/08/23**Percent Solids:** 86.4

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	92	ug/kg	
142-28-9	1,3-Dichloropropane	ND	92	ug/kg	
594-20-7	2,2-Dichloropropane	ND	92	ug/kg	
563-58-6	1,1-Dichloropropene	ND	92	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	92	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	92	ug/kg	
123-91-1	1,4-Dioxane ^c	ND	5700	ug/kg	
60-29-7	Ethyl Ether	ND	92	ug/kg	
100-41-4	Ethylbenzene	ND	46	ug/kg	
87-68-3	Hexachlorobutadiene	ND	230	ug/kg	
591-78-6	2-Hexanone	ND	230	ug/kg	
98-82-8	Isopropylbenzene	ND	92	ug/kg	
99-87-6	p-Isopropyltoluene	ND	92	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	46	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	230	ug/kg	
74-95-3	Methylene bromide	ND	230	ug/kg	
75-09-2	Methylene chloride	ND	230	ug/kg	
91-20-3	Naphthalene	ND	230	ug/kg	
103-65-1	n-Propylbenzene	ND	92	ug/kg	
100-42-5	Styrene	ND	92	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	92	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	92	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	92	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	92	ug/kg	
127-18-4	Tetrachloroethene	150	92	ug/kg	
109-99-9	Tetrahydrofuran	ND	460	ug/kg	
108-88-3	Toluene	ND	46	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	230	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	230	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	92	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	92	ug/kg	
79-01-6	Trichloroethene	970	46	ug/kg	
75-69-4	Trichlorofluoromethane	ND	230	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	230	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	92	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	92	ug/kg	
75-01-4	Vinyl chloride	ND	92	ug/kg	
	m,p-Xylene	ND	46	ug/kg	
95-47-6	o-Xylene	ND	46	ug/kg	
1330-20-7	Xylene (total)	ND	46	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SB501_20230908_62-63_N_SO Lab Sample ID: JD72469-8 Matrix: SO - Soil Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 09/08/23 Date Received: 09/08/23 Percent Solids: 86.4
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		80-124%
17060-07-0	1,2-Dichloroethane-D4	95%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	89%		58-148%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID: TB_20230908_SO_03M	Date Sampled: 09/08/23
Lab Sample ID: JD72469-9	Date Received: 09/08/23
Matrix: SO - Trip Blank Methanol	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3D192348.D	1	09/11/23 14:06	JN	n/a	n/a	V3D8040
Run #2							

Run #	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.0 g	10.0 ml	100 ul
Run #2			

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	1000	ug/kg	
71-43-2	Benzene	ND	50	ug/kg	
108-86-1	Bromobenzene	ND	500	ug/kg	
74-97-5	Bromochloromethane	ND	500	ug/kg	
75-27-4	Bromodichloromethane	ND	200	ug/kg	
75-25-2	Bromoform	ND	500	ug/kg	
74-83-9	Bromomethane	ND	500	ug/kg	
78-93-3	2-Butanone (MEK)	ND	1000	ug/kg	
104-51-8	n-Butylbenzene	ND	200	ug/kg	
135-98-8	sec-Butylbenzene	ND	200	ug/kg	
98-06-6	tert-Butylbenzene	ND	200	ug/kg	
75-15-0	Carbon disulfide	ND	200	ug/kg	
56-23-5	Carbon tetrachloride	ND	200	ug/kg	
108-90-7	Chlorobenzene	ND	200	ug/kg	
75-00-3	Chloroethane	ND	500	ug/kg	
67-66-3	Chloroform	ND	200	ug/kg	
74-87-3	Chloromethane	ND	500	ug/kg	
95-49-8	o-Chlorotoluene	ND	200	ug/kg	
106-43-4	p-Chlorotoluene	ND	200	ug/kg	
108-20-3	Di-Isopropyl ether	ND	200	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	200	ug/kg	
124-48-1	Dibromochloromethane	ND	200	ug/kg	
106-93-4	1,2-Dibromoethane	ND	100	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	100	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	100	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	100	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	500	ug/kg	
75-34-3	1,1-Dichloroethane	ND	100	ug/kg	
107-06-2	1,2-Dichloroethane	ND	100	ug/kg	
75-35-4	1,1-Dichloroethene	ND	100	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	100	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	100	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.9
4

Report of Analysis

Client Sample ID: TB_20230908_SO_03M**Lab Sample ID:** JD72469-9**Matrix:** SO - Trip Blank Methanol**Method:** SW846 8260D**Project:** Varian, Beverly, MA**Date Sampled:** 09/08/23**Date Received:** 09/08/23**Percent Solids:** n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	200	ug/kg	
142-28-9	1,3-Dichloropropane	ND	200	ug/kg	
594-20-7	2,2-Dichloropropane	ND	200	ug/kg	
563-58-6	1,1-Dichloropropene	ND	200	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	200	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	200	ug/kg	
123-91-1	1,4-Dioxane ^b	ND	13000	ug/kg	
60-29-7	Ethyl Ether	ND	200	ug/kg	
100-41-4	Ethylbenzene	ND	100	ug/kg	
87-68-3	Hexachlorobutadiene	ND	500	ug/kg	
591-78-6	2-Hexanone	ND	500	ug/kg	
98-82-8	Isopropylbenzene	ND	200	ug/kg	
99-87-6	p-Isopropyltoluene	ND	200	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	100	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	500	ug/kg	
74-95-3	Methylene bromide	ND	500	ug/kg	
75-09-2	Methylene chloride	ND	500	ug/kg	
91-20-3	Naphthalene	ND	500	ug/kg	
103-65-1	n-Propylbenzene	ND	200	ug/kg	
100-42-5	Styrene	ND	200	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	200	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	200	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	200	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	200	ug/kg	
127-18-4	Tetrachloroethene	ND	200	ug/kg	
109-99-9	Tetrahydrofuran	ND	1000	ug/kg	
108-88-3	Toluene	ND	100	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	500	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	500	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	200	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	200	ug/kg	
79-01-6	Trichloroethene	ND	100	ug/kg	
75-69-4	Trichlorofluoromethane	ND	500	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	500	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	200	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	200	ug/kg	
75-01-4	Vinyl chloride	ND	200	ug/kg	
	m,p-Xylene	ND	100	ug/kg	
95-47-6	o-Xylene	ND	100	ug/kg	
1330-20-7	Xylene (total)	ND	100	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB_20230908_SO_03M Lab Sample ID: JD72469-9 Matrix: SO - Trip Blank Methanol Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 09/08/23 Date Received: 09/08/23 Percent Solids: n/a
--	---

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-124%
17060-07-0	1,2-Dichloroethane-D4	94%		75-133%
2037-26-5	Toluene-D8	98%		79-125%
460-00-4	4-Bromofluorobenzene	93%		58-148%

- (a) This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB_20230908_SO_03L	
Lab Sample ID: JD72469-10	Date Sampled: 09/08/23
Matrix: SO - Trip Blank Soil	Date Received: 09/08/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1C196269.D	1	09/12/23 16:46	JN	n/a	n/a	V1C8503
Run #2							

Run #1	Initial Weight
Run #1	5.0 g
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	18.8	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK) ^b	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	ND	2.0	ug/kg	
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropan ^c	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane ^c	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB_20230908_SO_03L
Lab Sample ID: JD72469-10
Matrix: SO - Trip Blank Soil
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 09/08/23
Date Received: 09/08/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	ND	5.0	ug/kg	
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB_20230908_SO_03L Lab Sample ID: JD72469-10 Matrix: SO - Trip Blank Soil Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 09/08/23 Date Received: 09/08/23 Percent Solids: n/a
---	---

4.10
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		80-124%
17060-07-0	1,2-Dichloroethane-D4	92%		75-133%
2037-26-5	Toluene-D8	108%		79-125%
460-00-4	4-Bromofluorobenzene	104%		58-148%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS biased high. Response factor for this compound is below 0.05 in the initial and continuing calibrations.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits



Soil

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL: 732-329-0200 FAX: 732-329-3499/3480

EHSA-OAC-0023-04-FORM-Standard COC

www.sgs.com/ehsusa

FED-EX Tracking #
SGS Quote # 20232439
Bottle Order Control # VP-083023-128
SGS Job # JD72469

Client / Reporting Information, Project Information, Requested Analysis, Matrix Codes, Billing Information, Project Contact, Project Manager, Attention.

Table with columns: SGS Sample #, Field ID / Point of Collection, MECHDI Val #, Date, Time, Sampled by, Grab (G) Comp (Y/N), Source Characterized (Y/N), Matrix, # of bottles, HCl, NaOH, HNO3, H2SO4, HClO4, DI Water, MESH, ENCORE, pH Check (Lab Use Only), LAB USE ONLY.

Turn Around Time (Business Days), Approved By (SGS PM) / Date, Deliverable, Comments / Special Instructions.

Sample Custody must be documented below each time samples change possession, including courier delivery. Includes fields for Relinquished By, Received By, Date / Time, and Custody Seal #.



5.1
5

SGS Sample Receipt Summary

Job Number: JD72469

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 9/8/2023 9:50:00 PM

Delivery Method: SGS COURIER

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (0.8);

Cooler Temps (Corrected) °C: Cooler 1: (0.5);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. SmpI Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>IR Gun 40</u> | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservatio

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

5.1
5

Job Change Order: JD72469

Requested Date: 9/11/2023 Received Date: 9/8/2023
Account Name: Jacobs Engineering Due Date: 9/11/2023
Project Description: Varian, Beverly, MA Deliverable: MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 7

Sample #: JD72469-All

Client ID:

Change: Revise TAT to 7-days

Dept:
TAT: 7

JD72469: Chain of Custody
Page 3 of 3

Above Changes Per: Steve Fox Date/Time: 9/12/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM
July 1, 2010
Final

Exhibit VII A
Revision No. 1

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD72469
Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD72469-1,JD72469-10,JD72469-2,JD72469-3,JD72469-4,JD72469-5,JD72469-6,JD72469-7
JD72469-8,JD72469-9

Matrices: Groundwater/Surface Water () Soil/Sediment (x) Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

¹ All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 18-Sep-23

5.2
5

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD72469

Varian, Beverly, MA

Project No: VARMS105.A.CS.EV.08.78

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD72469-1 Collected: 07-SEP-23 16:40 By: DK Received: 08-SEP-23 By: JW SB501_20230907_34-35_N_SO						
JD72469-1	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104
JD72469-1	SW846 8260D	12-SEP-23 19:00	JN			V8260MCP
JD72469-2 Collected: 07-SEP-23 16:45 By: DK Received: 08-SEP-23 By: JW SB501_20230907_39-40_N_SO						
JD72469-2	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104
JD72469-2	SW846 8260D	11-SEP-23 19:51	JN			V8260MCP
JD72469-3 Collected: 07-SEP-23 16:45 By: DK Received: 08-SEP-23 By: JW SB501_20230907_39-40_FD_SO						
JD72469-3	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104
JD72469-3	SW846 8260D	11-SEP-23 20:12	JN			V8260MCP
JD72469-4 Collected: 07-SEP-23 17:30 By: DK Received: 08-SEP-23 By: JW SB501_20230907_44-45_N_SO						
JD72469-4	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104
JD72469-4	SW846 8260D	11-SEP-23 20:34	JN			V8260MCP
JD72469-5 Collected: 07-SEP-23 17:55 By: DK Received: 08-SEP-23 By: JW SB501_20230907_49-50_N_SO						
JD72469-5	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104
JD72469-5	SW846 8260D	11-SEP-23 20:55	JN			V8260MCP
JD72469-6 Collected: 07-SEP-23 18:15 By: DK Received: 08-SEP-23 By: JW SB501_20230907_54-55_N_SO						
JD72469-6	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104
JD72469-6	SW846 8260D	11-SEP-23 21:17	JN			V8260MCP
JD72469-7 Collected: 08-SEP-23 08:55 By: DK Received: 08-SEP-23 By: JW SB501_20230908_55-56_N_SO						
JD72469-7	SM2540 G 18TH ED M	09-SEP-23 16:20	MK			SOL104

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD72469

Varian, Beverly, MA

Project No: VARMS105.A.CS.EV.08.78

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD72469-7	SW846 8260D	11-SEP-23 21:38	JN			V8260MCP
JD72469-8	Collected: 08-SEP-23 09:20 By: DK		Received: 08-SEP-23 By: JW			
	SB501_20230908_62-63_N_SO					
JD72469-8	SM2540 G 18TH ED MOD	SEP-23 16:20	MK			SOL104
JD72469-8	SW846 8260D	11-SEP-23 22:00	JN			V8260MCP
JD72469-9	Collected: 08-SEP-23 09:20 By:		Received: 08-SEP-23 By: JW			
	TB_20230908_SO_03M					
JD72469-9	SW846 8260D	11-SEP-23 14:06	JN			V8260MCP
JD72469-10	Collected: 08-SEP-23 09:20 By:		Received: 08-SEP-23 By: JW			
	TB_20230908_SO_03L					
JD72469-10	SW846 8260D	12-SEP-23 16:46	JN			V8260MCP

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503	SW846 8260D						
V1C8503-BS	67-64-1	Acetone	BSP	REC	182 ^a	%	70-130
V1C8503-BS	71-43-2	Benzene	BSP	REC	86	%	70-130
V1C8503-BS	108-86-1	Bromobenzene	BSP	REC	89	%	70-130
V1C8503-BS	74-97-5	Bromochloromethane	BSP	REC	110	%	70-130
V1C8503-BS	75-27-4	Bromodichloromethane	BSP	REC	80 ^b	%	70-130
V1C8503-BS	75-25-2	Bromoform	BSP	REC	94	%	70-130
V1C8503-BS	74-83-9	Bromomethane	BSP	REC	92	%	70-130
V1C8503-BS	78-93-3	2-Butanone (MEK)	BSP	REC	136	%	70-130
V1C8503-BS	104-51-8	n-Butylbenzene	BSP	REC	80 ^b	%	70-130
V1C8503-BS	135-98-8	sec-Butylbenzene	BSP	REC	81	%	70-130
V1C8503-BS	98-06-6	tert-Butylbenzene	BSP	REC	83	%	70-130
V1C8503-BS	75-15-0	Carbon disulfide	BSP	REC	104	%	70-130
V1C8503-BS	56-23-5	Carbon tetrachloride	BSP	REC	99	%	70-130
V1C8503-BS	108-90-7	Chlorobenzene	BSP	REC	90	%	70-130
V1C8503-BS	75-00-3	Chloroethane	BSP	REC	106	%	70-130
V1C8503-BS	67-66-3	Chloroform	BSP	REC	103	%	70-130
V1C8503-BS	74-87-3	Chloromethane	BSP	REC	108	%	70-130
V1C8503-BS	95-49-8	o-Chlorotoluene	BSP	REC	87	%	70-130
V1C8503-BS	106-43-4	p-Chlorotoluene	BSP	REC	86	%	70-130
V1C8503-BS	108-20-3	Di-Isopropyl ether	BSP	REC	110	%	70-130
V1C8503-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	70 ^c	%	70-130
V1C8503-BS	124-48-1	Dibromochloromethane	BSP	REC	88	%	70-130
V1C8503-BS	106-93-4	1,2-Dibromoethane	BSP	REC	97	%	70-130
V1C8503-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	82 ^b	%	70-130
V1C8503-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	84	%	70-130
V1C8503-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	88	%	70-130
V1C8503-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	87	%	70-130
V1C8503-BS	75-34-3	1,1-Dichloroethane	BSP	REC	110	%	70-130
V1C8503-BS	107-06-2	1,2-Dichloroethane	BSP	REC	79	%	70-130
V1C8503-BS	75-35-4	1,1-Dichloroethene	BSP	REC	95	%	70-130
V1C8503-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	105	%	70-130
V1C8503-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	98	%	70-130
V1C8503-BS	78-87-5	1,2-Dichloropropane	BSP	REC	91	%	70-130
V1C8503-BS	142-28-9	1,3-Dichloropropane	BSP	REC	92	%	70-130
V1C8503-BS	594-20-7	2,2-Dichloropropane	BSP	REC	97	%	70-130
V1C8503-BS	563-58-6	1,1-Dichloropropene	BSP	REC	95	%	70-130
V1C8503-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	80 ^b	%	70-130
V1C8503-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	91	%	70-130
V1C8503-BS	123-91-1	1,4-Dioxane	BSP	REC	98	%	70-130
V1C8503-BS	60-29-7	Ethyl Ether	BSP	REC	111	%	70-130
V1C8503-BS	100-41-4	Ethylbenzene	BSP	REC	88	%	70-130
V1C8503-BS	87-68-3	Hexachlorobutadiene	BSP	REC	90	%	70-130

* Sample used for QC is not from job JD72469

QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BS	591-78-6	2-Hexanone	BSP	REC	109	%	70-130
V1C8503-BS	98-82-8	Isopropylbenzene	BSP	REC	83	%	70-130
V1C8503-BS	99-87-6	p-Isopropyltoluene	BSP	REC	80	%	70-130
V1C8503-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	103	%	70-130
V1C8503-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	90	%	70-130
V1C8503-BS	74-95-3	Methylene bromide	BSP	REC	85	%	70-130
V1C8503-BS	75-09-2	Methylene chloride	BSP	REC	105	%	70-130
V1C8503-BS	91-20-3	Naphthalene	BSP	REC	77	%	70-130
V1C8503-BS	103-65-1	n-Propylbenzene	BSP	REC	80	%	70-130
V1C8503-BS	100-42-5	Styrene	BSP	REC	86	%	70-130
V1C8503-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	87	%	70-130
V1C8503-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	117	%	70-130
V1C8503-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	94	%	70-130
V1C8503-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	83	%	70-130
V1C8503-BS	127-18-4	Tetrachloroethene	BSP	REC	89	%	70-130
V1C8503-BS	109-99-9	Tetrahydrofuran	BSP	REC	98	%	70-130
V1C8503-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V1C8503-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	83	%	70-130
V1C8503-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	87	%	70-130
V1C8503-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	101	%	70-130
V1C8503-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	93	%	70-130
V1C8503-BS	79-01-6	Trichloroethene	BSP	REC	85	%	70-130
V1C8503-BS	75-69-4	Trichlorofluoromethane	BSP	REC	96	%	70-130
V1C8503-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	92	%	70-130
V1C8503-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	88	%	70-130
V1C8503-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	84	%	70-130
V1C8503-BS	75-01-4	Vinyl chloride	BSP	REC	103	%	70-130
V1C8503-BS		m,p-Xylene	BSP	REC	89	%	70-130
V1C8503-BS	95-47-6	o-Xylene	BSP	REC	86	%	70-130
V1C8503-BS	1330-20-7	Xylene (total)	BSP	REC	88	%	70-130
V1C8503-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	115	%	70-130
V1C8503-BS	2037-26-5	Toluene-D8	BSP	SURR	105	%	70-130
V1C8503-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	94	%	70-130
V1C8503-BSD	67-64-1	Acetone	BSD	REC	168 ^a	%	70-130
V1C8503-BSD	67-64-1	Acetone	BSD	RPD	8	%	20
V1C8503-BSD	71-43-2	Benzene	BSD	REC	93	%	70-130
V1C8503-BSD	71-43-2	Benzene	BSD	RPD	8	%	20
V1C8503-BSD	108-86-1	Bromobenzene	BSD	REC	92	%	70-130
V1C8503-BSD	108-86-1	Bromobenzene	BSD	RPD	4	%	20
V1C8503-BSD	74-97-5	Bromochloromethane	BSD	REC	112	%	70-130
V1C8503-BSD	74-97-5	Bromochloromethane	BSD	RPD	2	%	20
V1C8503-BSD	75-27-4	Bromodichloromethane	BSD	REC	85	%	70-130
V1C8503-BSD	75-27-4	Bromodichloromethane	BSD	RPD	6	%	20
V1C8503-BSD	75-25-2	Bromoform	BSD	REC	95	%	70-130
V1C8503-BSD	75-25-2	Bromoform	BSD	RPD	2	%	20

* Sample used for QC is not from job JD72469

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	74-83-9	Bromomethane	BSD	REC	96	%	70-130
V1C8503-BSD	74-83-9	Bromomethane	BSD	RPD	4	%	20
V1C8503-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	128	%	70-130
V1C8503-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	6	%	20
V1C8503-BSD	104-51-8	n-Butylbenzene	BSD	REC	84	%	70-130
V1C8503-BSD	104-51-8	n-Butylbenzene	BSD	RPD	5	%	20
V1C8503-BSD	135-98-8	sec-Butylbenzene	BSD	REC	81	%	70-130
V1C8503-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	0	%	20
V1C8503-BSD	98-06-6	tert-Butylbenzene	BSD	REC	85	%	70-130
V1C8503-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V1C8503-BSD	75-15-0	Carbon disulfide	BSD	REC	106	%	70-130
V1C8503-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V1C8503-BSD	56-23-5	Carbon tetrachloride	BSD	REC	104	%	70-130
V1C8503-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V1C8503-BSD	108-90-7	Chlorobenzene	BSD	REC	94	%	70-130
V1C8503-BSD	108-90-7	Chlorobenzene	BSD	RPD	5	%	20
V1C8503-BSD	75-00-3	Chloroethane	BSD	REC	108	%	70-130
V1C8503-BSD	75-00-3	Chloroethane	BSD	RPD	2	%	20
V1C8503-BSD	67-66-3	Chloroform	BSD	REC	105	%	70-130
V1C8503-BSD	67-66-3	Chloroform	BSD	RPD	3	%	20
V1C8503-BSD	74-87-3	Chloromethane	BSD	REC	111	%	70-130
V1C8503-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V1C8503-BSD	95-49-8	o-Chlorotoluene	BSD	REC	86	%	70-130
V1C8503-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V1C8503-BSD	106-43-4	p-Chlorotoluene	BSD	REC	85	%	70-130
V1C8503-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	0	%	20
V1C8503-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	116	%	70-130
V1C8503-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	5	%	20
V1C8503-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	75	%	70-130
V1C8503-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	7	%	20
V1C8503-BSD	124-48-1	Dibromochloromethane	BSD	REC	91	%	70-130
V1C8503-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V1C8503-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	98	%	70-130
V1C8503-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1C8503-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8503-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	11 ^d	%	20
V1C8503-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	86	%	70-130
V1C8503-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V1C8503-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	91	%	70-130
V1C8503-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V1C8503-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	91	%	70-130
V1C8503-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	4	%	20
V1C8503-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	113	%	70-130
V1C8503-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V1C8503-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	84	%	70-130

* Sample used for QC is not from job JD72469

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	7	%	20
V1C8503-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	101	%	70-130
V1C8503-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	6	%	20
V1C8503-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	104	%	70-130
V1C8503-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V1C8503-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	99	%	70-130
V1C8503-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	1	%	20
V1C8503-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	98	%	70-130
V1C8503-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	8	%	20
V1C8503-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	99	%	70-130
V1C8503-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	7	%	20
V1C8503-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	97	%	70-130
V1C8503-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	0	%	20
V1C8503-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	101	%	70-130
V1C8503-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	7	%	20
V1C8503-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	89	%	70-130
V1C8503-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	11 ^d	%	20
V1C8503-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	95	%	70-130
V1C8503-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	4	%	20
V1C8503-BSD	123-91-1	1,4-Dioxane	BSD	REC	102	%	70-130
V1C8503-BSD	123-91-1	1,4-Dioxane	BSD	RPD	5	%	20
V1C8503-BSD	60-29-7	Ethyl Ether	BSD	REC	108	%	70-130
V1C8503-BSD	60-29-7	Ethyl Ether	BSD	RPD	3	%	20
V1C8503-BSD	100-41-4	Ethylbenzene	BSD	REC	94	%	70-130
V1C8503-BSD	100-41-4	Ethylbenzene	BSD	RPD	7	%	20
V1C8503-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	94	%	70-130
V1C8503-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	5	%	20
V1C8503-BSD	591-78-6	2-Hexanone	BSD	REC	114	%	70-130
V1C8503-BSD	591-78-6	2-Hexanone	BSD	RPD	4	%	20
V1C8503-BSD	98-82-8	Isopropylbenzene	BSD	REC	82	%	70-130
V1C8503-BSD	98-82-8	Isopropylbenzene	BSD	RPD	1	%	20
V1C8503-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	88	%	70-130
V1C8503-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	9	%	20
V1C8503-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	104	%	70-130
V1C8503-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	1	%	20
V1C8503-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	92	%	70-130
V1C8503-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	3	%	20
V1C8503-BSD	74-95-3	Methylene bromide	BSD	REC	92	%	70-130
V1C8503-BSD	74-95-3	Methylene bromide	BSD	RPD	8	%	20
V1C8503-BSD	75-09-2	Methylene chloride	BSD	REC	107	%	70-130
V1C8503-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V1C8503-BSD	91-20-3	Naphthalene	BSD	REC	84	%	70-130
V1C8503-BSD	91-20-3	Naphthalene	BSD	RPD	9	%	20
V1C8503-BSD	103-65-1	n-Propylbenzene	BSD	REC	82	%	70-130
V1C8503-BSD	103-65-1	n-Propylbenzene	BSD	RPD	2	%	20

* Sample used for QC is not from job JD72469

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-BSD	100-42-5	Styrene	BSD	REC	95	%	70-130
V1C8503-BSD	100-42-5	Styrene	BSD	RPD	11 ^d	%	20
V1C8503-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	95	%	70-130
V1C8503-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	8	%	20
V1C8503-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	118	%	70-130
V1C8503-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	1	%	20
V1C8503-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	99	%	70-130
V1C8503-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	6	%	20
V1C8503-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	90	%	70-130
V1C8503-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	8	%	20
V1C8503-BSD	127-18-4	Tetrachloroethene	BSD	REC	99	%	70-130
V1C8503-BSD	127-18-4	Tetrachloroethene	BSD	RPD	11	%	20
V1C8503-BSD	109-99-9	Tetrahydrofuran	BSD	REC	98	%	70-130
V1C8503-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	0	%	20
V1C8503-BSD	108-88-3	Toluene	BSD	REC	97	%	70-130
V1C8503-BSD	108-88-3	Toluene	BSD	RPD	4	%	20
V1C8503-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	88	%	70-130
V1C8503-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	7	%	20
V1C8503-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	94	%	70-130
V1C8503-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	9	%	20
V1C8503-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	107	%	70-130
V1C8503-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	6	%	20
V1C8503-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V1C8503-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V1C8503-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V1C8503-BSD	79-01-6	Trichloroethene	BSD	RPD	10	%	20
V1C8503-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	100	%	70-130
V1C8503-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	4	%	20
V1C8503-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	91	%	70-130
V1C8503-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	2	%	20
V1C8503-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	89	%	70-130
V1C8503-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	83	%	70-130
V1C8503-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	2	%	20
V1C8503-BSD	75-01-4	Vinyl chloride	BSD	REC	109	%	70-130
V1C8503-BSD	75-01-4	Vinyl chloride	BSD	RPD	6	%	20
V1C8503-BSD		m,p-Xylene	BSD	REC	92	%	70-130
V1C8503-BSD		m,p-Xylene	BSD	RPD	4	%	20
V1C8503-BSD	95-47-6	o-Xylene	BSD	REC	98	%	70-130
V1C8503-BSD	95-47-6	o-Xylene	BSD	RPD	13 ^d	%	20
V1C8503-BSD	1330-20-7	Xylene (total)	BSD	REC	94	%	70-130
V1C8503-BSD	1330-20-7	Xylene (total)	BSD	RPD	7	%	20
V1C8503-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	113	%	70-130
V1C8503-BSD	2037-26-5	Toluene-D8	BSD	SURR	107	%	70-130
V1C8503-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	94	%	70-130

* Sample used for QC is not from job JD72469

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1C8503-MB	1868-53-7	Dibromofluoromethane	MB	SURR	113	%	70-130
V1C8503-MB	2037-26-5	Toluene-D8	MB	SURR	109	%	70-130
V1C8503-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	94	%	70-130
JD72469-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	115	%	70-130
JD72469-1	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130
JD72469-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	70-130
JD72469-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	112	%	70-130
JD72469-10	2037-26-5	Toluene-D8	SAMP	SURR	108	%	70-130
JD72469-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	70-130
V3D8040	SW846 8260D						
V3D8040-BS	67-64-1	Acetone	BSP	REC	118	%	70-130
V3D8040-BS	71-43-2	Benzene	BSP	REC	91	%	70-130
V3D8040-BS	108-86-1	Bromobenzene	BSP	REC	92	%	70-130
V3D8040-BS	74-97-5	Bromochloromethane	BSP	REC	96	%	70-130
V3D8040-BS	75-27-4	Bromodichloromethane	BSP	REC	88	%	70-130
V3D8040-BS	75-25-2	Bromoform	BSP	REC	95	%	70-130
V3D8040-BS	74-83-9	Bromomethane	BSP	REC	106	%	70-130
V3D8040-BS	78-93-3	2-Butanone (MEK)	BSP	REC	108	%	70-130
V3D8040-BS	104-51-8	n-Butylbenzene	BSP	REC	93	%	70-130
V3D8040-BS	135-98-8	sec-Butylbenzene	BSP	REC	92	%	70-130
V3D8040-BS	98-06-6	tert-Butylbenzene	BSP	REC	93	%	70-130
V3D8040-BS	75-15-0	Carbon disulfide	BSP	REC	92	%	70-130
V3D8040-BS	56-23-5	Carbon tetrachloride	BSP	REC	91	%	70-130
V3D8040-BS	108-90-7	Chlorobenzene	BSP	REC	92	%	70-130
V3D8040-BS	75-00-3	Chloroethane	BSP	REC	103	%	70-130
V3D8040-BS	67-66-3	Chloroform	BSP	REC	83	%	70-130
V3D8040-BS	74-87-3	Chloromethane	BSP	REC	87	%	70-130
V3D8040-BS	95-49-8	o-Chlorotoluene	BSP	REC	92	%	70-130
V3D8040-BS	106-43-4	p-Chlorotoluene	BSP	REC	91	%	70-130
V3D8040-BS	108-20-3	Di-Isopropyl ether	BSP	REC	90	%	70-130
V3D8040-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	89	%	70-130
V3D8040-BS	124-48-1	Dibromochloromethane	BSP	REC	91	%	70-130
V3D8040-BS	106-93-4	1,2-Dibromoethane	BSP	REC	92	%	70-130
V3D8040-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	95	%	70-130
V3D8040-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	94	%	70-130
V3D8040-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	91	%	70-130
V3D8040-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	96	%	70-130
V3D8040-BS	75-34-3	1,1-Dichloroethane	BSP	REC	90	%	70-130
V3D8040-BS	107-06-2	1,2-Dichloroethane	BSP	REC	83	%	70-130
V3D8040-BS	75-35-4	1,1-Dichloroethene	BSP	REC	95	%	70-130
V3D8040-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	93	%	70-130
V3D8040-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	90	%	70-130
V3D8040-BS	78-87-5	1,2-Dichloropropane	BSP	REC	91	%	70-130

* Sample used for QC is not from job JD72469

QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BS	142-28-9	1,3-Dichloropropane	BSP	REC	91	%	70-130
V3D8040-BS	594-20-7	2,2-Dichloropropane	BSP	REC	88	%	70-130
V3D8040-BS	563-58-6	1,1-Dichloropropene	BSP	REC	92	%	70-130
V3D8040-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	93	%	70-130
V3D8040-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	93	%	70-130
V3D8040-BS	123-91-1	1,4-Dioxane	BSP	REC	124	%	70-130
V3D8040-BS	60-29-7	Ethyl Ether	BSP	REC	93	%	70-130
V3D8040-BS	100-41-4	Ethylbenzene	BSP	REC	92	%	70-130
V3D8040-BS	87-68-3	Hexachlorobutadiene	BSP	REC	87	%	70-130
V3D8040-BS	591-78-6	2-Hexanone	BSP	REC	97	%	70-130
V3D8040-BS	98-82-8	Isopropylbenzene	BSP	REC	93	%	70-130
V3D8040-BS	99-87-6	p-Isopropyltoluene	BSP	REC	94	%	70-130
V3D8040-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	94	%	70-130
V3D8040-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	93	%	70-130
V3D8040-BS	74-95-3	Methylene bromide	BSP	REC	88	%	70-130
V3D8040-BS	75-09-2	Methylene chloride	BSP	REC	85	%	70-130
V3D8040-BS	91-20-3	Naphthalene	BSP	REC	82	%	70-130
V3D8040-BS	103-65-1	n-Propylbenzene	BSP	REC	90	%	70-130
V3D8040-BS	100-42-5	Styrene	BSP	REC	98	%	70-130
V3D8040-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	94	%	70-130
V3D8040-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	90	%	70-130
V3D8040-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	95	%	70-130
V3D8040-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	88	%	70-130
V3D8040-BS	127-18-4	Tetrachloroethene	BSP	REC	88	%	70-130
V3D8040-BS	109-99-9	Tetrahydrofuran	BSP	REC	81	%	70-130
V3D8040-BS	108-88-3	Toluene	BSP	REC	90	%	70-130
V3D8040-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	84	%	70-130
V3D8040-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	90	%	70-130
V3D8040-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	88	%	70-130
V3D8040-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	89	%	70-130
V3D8040-BS	79-01-6	Trichloroethene	BSP	REC	92	%	70-130
V3D8040-BS	75-69-4	Trichlorofluoromethane	BSP	REC	89	%	70-130
V3D8040-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	86	%	70-130
V3D8040-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	88	%	70-130
V3D8040-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	91	%	70-130
V3D8040-BS	75-01-4	Vinyl chloride	BSP	REC	99	%	70-130
V3D8040-BS		m,p-Xylene	BSP	REC	93	%	70-130
V3D8040-BS	95-47-6	o-Xylene	BSP	REC	93	%	70-130
V3D8040-BS	1330-20-7	Xylene (total)	BSP	REC	93	%	70-130
V3D8040-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	100	%	70-130
V3D8040-BS	2037-26-5	Toluene-D8	BSP	SURR	99	%	70-130
V3D8040-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	91	%	70-130
V3D8040-BSD	67-64-1	Acetone	BSD	REC	136	%	70-130
V3D8040-BSD	67-64-1	Acetone	BSD	RPD	14 ^d	%	20
V3D8040-BSD	71-43-2	Benzene	BSD	REC	92	%	70-130

* Sample used for QC is not from job JD72469

QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD	71-43-2	Benzene	BSD	RPD	1	%	20
V3D8040-BSD	108-86-1	Bromobenzene	BSD	REC	93	%	70-130
V3D8040-BSD	108-86-1	Bromobenzene	BSD	RPD	1	%	20
V3D8040-BSD	74-97-5	Bromochloromethane	BSD	REC	96	%	70-130
V3D8040-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V3D8040-BSD	75-27-4	Bromodichloromethane	BSD	REC	90	%	70-130
V3D8040-BSD	75-27-4	Bromodichloromethane	BSD	RPD	3	%	20
V3D8040-BSD	75-25-2	Bromoform	BSD	REC	98	%	70-130
V3D8040-BSD	75-25-2	Bromoform	BSD	RPD	3	%	20
V3D8040-BSD	74-83-9	Bromomethane	BSD	REC	113	%	70-130
V3D8040-BSD	74-83-9	Bromomethane	BSD	RPD	6	%	20
V3D8040-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	119	%	70-130
V3D8040-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	10	%	20
V3D8040-BSD	104-51-8	n-Butylbenzene	BSD	REC	94	%	70-130
V3D8040-BSD	104-51-8	n-Butylbenzene	BSD	RPD	0	%	20
V3D8040-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V3D8040-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	0	%	20
V3D8040-BSD	98-06-6	tert-Butylbenzene	BSD	REC	94	%	70-130
V3D8040-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	1	%	20
V3D8040-BSD	75-15-0	Carbon disulfide	BSD	REC	95	%	70-130
V3D8040-BSD	75-15-0	Carbon disulfide	BSD	RPD	3	%	20
V3D8040-BSD	56-23-5	Carbon tetrachloride	BSD	REC	93	%	70-130
V3D8040-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	3	%	20
V3D8040-BSD	108-90-7	Chlorobenzene	BSD	REC	92	%	70-130
V3D8040-BSD	108-90-7	Chlorobenzene	BSD	RPD	1	%	20
V3D8040-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V3D8040-BSD	75-00-3	Chloroethane	BSD	RPD	3	%	20
V3D8040-BSD	67-66-3	Chloroform	BSD	REC	84	%	70-130
V3D8040-BSD	67-66-3	Chloroform	BSD	RPD	2	%	20
V3D8040-BSD	74-87-3	Chloromethane	BSD	REC	85	%	70-130
V3D8040-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V3D8040-BSD	95-49-8	o-Chlorotoluene	BSD	REC	92	%	70-130
V3D8040-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	0	%	20
V3D8040-BSD	106-43-4	p-Chlorotoluene	BSD	REC	92	%	70-130
V3D8040-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	0	%	20
V3D8040-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	90	%	70-130
V3D8040-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	0	%	20
V3D8040-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	95	%	70-130
V3D8040-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	6	%	20
V3D8040-BSD	124-48-1	Dibromochloromethane	BSD	REC	94	%	70-130
V3D8040-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V3D8040-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	95	%	70-130
V3D8040-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	3	%	20
V3D8040-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	95	%	70-130
V3D8040-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	0	%	20

* Sample used for QC is not from job JD72469

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	94	%	70-130
V3D8040-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	0	%	20
V3D8040-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	90	%	70-130
V3D8040-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	1	%	20
V3D8040-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	94	%	70-130
V3D8040-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	2	%	20
V3D8040-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	92	%	70-130
V3D8040-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	1	%	20
V3D8040-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	86	%	70-130
V3D8040-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	4	%	20
V3D8040-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	97	%	70-130
V3D8040-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V3D8040-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	96	%	70-130
V3D8040-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	3	%	20
V3D8040-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	92	%	70-130
V3D8040-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	2	%	20
V3D8040-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	92	%	70-130
V3D8040-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	1	%	20
V3D8040-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	93	%	70-130
V3D8040-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	2	%	20
V3D8040-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	89	%	70-130
V3D8040-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	2	%	20
V3D8040-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	95	%	70-130
V3D8040-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	3	%	20
V3D8040-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	94	%	70-130
V3D8040-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	1	%	20
V3D8040-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	94	%	70-130
V3D8040-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V3D8040-BSD	123-91-1	1,4-Dioxane	BSD	REC	129	%	70-130
V3D8040-BSD	123-91-1	1,4-Dioxane	BSD	RPD	4	%	20
V3D8040-BSD	60-29-7	Ethyl Ether	BSD	REC	95	%	70-130
V3D8040-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V3D8040-BSD	100-41-4	Ethylbenzene	BSD	REC	94	%	70-130
V3D8040-BSD	100-41-4	Ethylbenzene	BSD	RPD	2	%	20
V3D8040-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	88	%	70-130
V3D8040-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	1	%	20
V3D8040-BSD	591-78-6	2-Hexanone	BSD	REC	107	%	70-130
V3D8040-BSD	591-78-6	2-Hexanone	BSD	RPD	10	%	20
V3D8040-BSD	98-82-8	Isopropylbenzene	BSD	REC	95	%	70-130
V3D8040-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V3D8040-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	94	%	70-130
V3D8040-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	0	%	20
V3D8040-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	99	%	70-130
V3D8040-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	5	%	20
V3D8040-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	101	%	70-130

* Sample used for QC is not from job JD72469

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QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	8	%	20
V3D8040-BSD	74-95-3	Methylene bromide	BSD	REC	91	%	70-130
V3D8040-BSD	74-95-3	Methylene bromide	BSD	RPD	3	%	20
V3D8040-BSD	75-09-2	Methylene chloride	BSD	REC	86	%	70-130
V3D8040-BSD	75-09-2	Methylene chloride	BSD	RPD	1	%	20
V3D8040-BSD	91-20-3	Naphthalene	BSD	REC	90	%	70-130
V3D8040-BSD	91-20-3	Naphthalene	BSD	RPD	10	%	20
V3D8040-BSD	103-65-1	n-Propylbenzene	BSD	REC	91	%	70-130
V3D8040-BSD	103-65-1	n-Propylbenzene	BSD	RPD	1	%	20
V3D8040-BSD	100-42-5	Styrene	BSD	REC	99	%	70-130
V3D8040-BSD	100-42-5	Styrene	BSD	RPD	2	%	20
V3D8040-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	97	%	70-130
V3D8040-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	4	%	20
V3D8040-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	93	%	70-130
V3D8040-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	3	%	20
V3D8040-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	98	%	70-130
V3D8040-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	4	%	20
V3D8040-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	90	%	70-130
V3D8040-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	1	%	20
V3D8040-BSD	127-18-4	Tetrachloroethene	BSD	REC	89	%	70-130
V3D8040-BSD	127-18-4	Tetrachloroethene	BSD	RPD	1	%	20
V3D8040-BSD	109-99-9	Tetrahydrofuran	BSD	REC	87	%	70-130
V3D8040-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	7	%	20
V3D8040-BSD	108-88-3	Toluene	BSD	REC	91	%	70-130
V3D8040-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V3D8040-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	90	%	70-130
V3D8040-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	6	%	20
V3D8040-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	92	%	70-130
V3D8040-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	3	%	20
V3D8040-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	90	%	70-130
V3D8040-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	2	%	20
V3D8040-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	92	%	70-130
V3D8040-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V3D8040-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V3D8040-BSD	79-01-6	Trichloroethene	BSD	RPD	3	%	20
V3D8040-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	90	%	70-130
V3D8040-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	1	%	20
V3D8040-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	92	%	70-130
V3D8040-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	6	%	20
V3D8040-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	88	%	70-130
V3D8040-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	1	%	20
V3D8040-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	91	%	70-130
V3D8040-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	0	%	20
V3D8040-BSD	75-01-4	Vinyl chloride	BSD	REC	103	%	70-130
V3D8040-BSD	75-01-4	Vinyl chloride	BSD	RPD	4	%	20

* Sample used for QC is not from job JD72469

QC Evaluation: MA MCP Limits

Job Number: JD72469
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 09/07/23 thru 09/08/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V3D8040-BSD		m,p-Xylene	BSD	REC	95	%	70-130
V3D8040-BSD		m,p-Xylene	BSD	RPD	2	%	20
V3D8040-BSD	95-47-6	o-Xylene	BSD	REC	96	%	70-130
V3D8040-BSD	95-47-6	o-Xylene	BSD	RPD	3	%	20
V3D8040-BSD	1330-20-7	Xylene (total)	BSD	REC	95	%	70-130
V3D8040-BSD	1330-20-7	Xylene (total)	BSD	RPD	2	%	20
V3D8040-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	102	%	70-130
V3D8040-BSD	2037-26-5	Toluene-D8	BSD	SURR	99	%	70-130
V3D8040-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	90	%	70-130
V3D8040-MB	1868-53-7	Dibromofluoromethane	MB	SURR	99	%	70-130
V3D8040-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V3D8040-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	93	%	70-130
JD72469-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	96	%	70-130
JD72469-2	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD72469-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	92	%	70-130
JD72469-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	92	%	70-130
JD72469-3	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72469-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	90	%	70-130
JD72469-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	70-130
JD72469-4	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72469-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	92	%	70-130
JD72469-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	94	%	70-130
JD72469-5	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD72469-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	88	%	70-130
JD72469-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	95	%	70-130
JD72469-6	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD72469-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	92	%	70-130
JD72469-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	92	%	70-130
JD72469-7	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72469-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	89	%	70-130
JD72469-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	92	%	70-130
JD72469-8	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72469-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	89	%	70-130
JD72469-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	70-130
JD72469-9	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD72469-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	93	%	70-130

- (a) High percent recovery and no associated positive reported in the QC batch.
- (b) Outside of in house control limits, but within reasonable method recovery limits.
- (c) Outside of in house control limits, but within the marginal exceedance limits.
- (d) Outside in house control limits.

* Sample used for QC is not from job JD72469

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-2, JD72469-3, JD72469-4, JD72469-5, JD72469-6, JD72469-7, JD72469-8, JD72469-9

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	500	ug/kg	
71-43-2	Benzene	ND	25	ug/kg	
108-86-1	Bromobenzene	ND	250	ug/kg	
74-97-5	Bromochloromethane	ND	250	ug/kg	
75-27-4	Bromodichloromethane	ND	100	ug/kg	
75-25-2	Bromoform	ND	250	ug/kg	
74-83-9	Bromomethane	ND	250	ug/kg	
78-93-3	2-Butanone (MEK)	ND	500	ug/kg	
104-51-8	n-Butylbenzene	ND	100	ug/kg	
135-98-8	sec-Butylbenzene	ND	100	ug/kg	
98-06-6	tert-Butylbenzene	ND	100	ug/kg	
75-15-0	Carbon disulfide	ND	100	ug/kg	
56-23-5	Carbon tetrachloride	ND	100	ug/kg	
108-90-7	Chlorobenzene	ND	100	ug/kg	
75-00-3	Chloroethane	ND	250	ug/kg	
67-66-3	Chloroform	ND	100	ug/kg	
74-87-3	Chloromethane	ND	250	ug/kg	
95-49-8	o-Chlorotoluene	ND	100	ug/kg	
106-43-4	p-Chlorotoluene	ND	100	ug/kg	
108-20-3	Di-Isopropyl ether	ND	100	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	100	ug/kg	
124-48-1	Dibromochloromethane	ND	100	ug/kg	
106-93-4	1,2-Dibromoethane	ND	50	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	50	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	50	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	50	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	250	ug/kg	
75-34-3	1,1-Dichloroethane	ND	50	ug/kg	
107-06-2	1,2-Dichloroethane	ND	50	ug/kg	
75-35-4	1,1-Dichloroethene	ND	50	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	50	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	50	ug/kg	
78-87-5	1,2-Dichloropropane	ND	100	ug/kg	
142-28-9	1,3-Dichloropropane	ND	100	ug/kg	
594-20-7	2,2-Dichloropropane	ND	100	ug/kg	
563-58-6	1,1-Dichloropropene	ND	100	ug/kg	

Method Blank Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-2, JD72469-3, JD72469-4, JD72469-5, JD72469-6, JD72469-7, JD72469-8, JD72469-9

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	100	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	100	ug/kg	
123-91-1	1,4-Dioxane	ND	6300	ug/kg	
60-29-7	Ethyl Ether	ND	100	ug/kg	
100-41-4	Ethylbenzene	ND	50	ug/kg	
87-68-3	Hexachlorobutadiene	ND	250	ug/kg	
591-78-6	2-Hexanone	ND	250	ug/kg	
98-82-8	Isopropylbenzene	ND	100	ug/kg	
99-87-6	p-Isopropyltoluene	ND	100	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	50	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	250	ug/kg	
74-95-3	Methylene bromide	ND	250	ug/kg	
75-09-2	Methylene chloride	ND	250	ug/kg	
91-20-3	Naphthalene	ND	250	ug/kg	
103-65-1	n-Propylbenzene	ND	100	ug/kg	
100-42-5	Styrene	ND	100	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	100	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	100	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	ug/kg	
127-18-4	Tetrachloroethene	ND	100	ug/kg	
109-99-9	Tetrahydrofuran	ND	500	ug/kg	
108-88-3	Toluene	ND	50	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	250	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	250	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	100	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	100	ug/kg	
79-01-6	Trichloroethene	ND	50	ug/kg	
75-69-4	Trichlorofluoromethane	ND	250	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	250	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	100	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	100	ug/kg	
75-01-4	Vinyl chloride	ND	100	ug/kg	
	m,p-Xylene	ND	50	ug/kg	
95-47-6	o-Xylene	ND	50	ug/kg	
1330-20-7	Xylene (total)	ND	50	ug/kg	

Method Blank Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-MB	3D192344.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-2, JD72469-3, JD72469-4, JD72469-5, JD72469-6, JD72469-7, JD72469-8, JD72469-9

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	99%	80-124%
17060-07-0	1,2-Dichloroethane-D4	95%	75-133%
2037-26-5	Toluene-D8	100%	79-125%
460-00-4	4-Bromofluorobenzene	93%	58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	1.29	640	ug/kg	J
	system artifact	1.82	460	ug/kg	J
	Total TIC, Volatile		0	ug/kg	

Method Blank Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-1, JD72469-10

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/kg	
71-43-2	Benzene	ND	0.50	ug/kg	
108-86-1	Bromobenzene	ND	5.0	ug/kg	
74-97-5	Bromochloromethane	ND	5.0	ug/kg	
75-27-4	Bromodichloromethane	ND	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	ug/kg	
74-83-9	Bromomethane	ND	5.0	ug/kg	
78-93-3	2-Butanone (MEK)	ND	10	ug/kg	
104-51-8	n-Butylbenzene	ND	2.0	ug/kg	
135-98-8	sec-Butylbenzene	ND	2.0	ug/kg	
98-06-6	tert-Butylbenzene	ND	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	ug/kg	
67-66-3	Chloroform	ND	2.0	ug/kg	
74-87-3	Chloromethane	ND	5.0	ug/kg	
95-49-8	o-Chlorotoluene	ND	2.0	ug/kg	
106-43-4	p-Chlorotoluene	ND	2.0	ug/kg	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/kg	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	2.0	ug/kg	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/kg	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/kg	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/kg	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/kg	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/kg	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/kg	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/kg	
142-28-9	1,3-Dichloropropane	ND	2.0	ug/kg	
594-20-7	2,2-Dichloropropane	ND	2.0	ug/kg	
563-58-6	1,1-Dichloropropene	ND	2.0	ug/kg	

Method Blank Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-1, JD72469-10

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/kg	
123-91-1	1,4-Dioxane	ND	130	ug/kg	
60-29-7	Ethyl Ether	ND	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	ug/kg	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/kg	
591-78-6	2-Hexanone	ND	5.0	ug/kg	
98-82-8	Isopropylbenzene	ND	2.0	ug/kg	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/kg	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/kg	
74-95-3	Methylene bromide	ND	5.0	ug/kg	
75-09-2	Methylene chloride	2.7	5.0	ug/kg	J
91-20-3	Naphthalene	ND	5.0	ug/kg	
103-65-1	n-Propylbenzene	ND	2.0	ug/kg	
100-42-5	Styrene	ND	2.0	ug/kg	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/kg	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/kg	
630-20-6	1,1,1,2-Tetrachloroethane	ND	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/kg	
127-18-4	Tetrachloroethene	ND	2.0	ug/kg	
109-99-9	Tetrahydrofuran	ND	10	ug/kg	
108-88-3	Toluene	ND	1.0	ug/kg	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/kg	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/kg	
79-01-6	Trichloroethene	ND	1.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/kg	
96-18-4	1,2,3-Trichloropropane	ND	5.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	2.0	ug/kg	
	m,p-Xylene	ND	1.0	ug/kg	
95-47-6	o-Xylene	ND	1.0	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	ug/kg	

Method Blank Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-MB	1C196259.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-1, JD72469-10

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	113%	80-124%
17060-07-0	1,2-Dichloroethane-D4	90%	75-133%
2037-26-5	Toluene-D8	109%	79-125%
460-00-4	4-Bromofluorobenzene	94%	58-148%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/kg	

6.12
6

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-2, JD72469-3, JD72469-4, JD72469-5, JD72469-6, JD72469-7, JD72469-8, JD72469-9

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10000	11800	118	13600	136	14* a	52-156/12
71-43-2	Benzene	2500	2280	91	2300	92	1	82-119/10
108-86-1	Bromobenzene	2500	2310	92	2330	93	1	82-115/10
74-97-5	Bromochloromethane	2500	2390	96	2410	96	1	82-123/10
75-27-4	Bromodichloromethane	2500	2200	88	2260	90	3	83-121/10
75-25-2	Bromoform	2500	2370	95	2450	98	3	74-138/10
74-83-9	Bromomethane	2500	2660	106	2820	113	6	56-150/12
78-93-3	2-Butanone (MEK)	10000	10800	108	11900	119	10	72-138/10
104-51-8	n-Butylbenzene	2500	2330	93	2340	94	0	81-124/11
135-98-8	sec-Butylbenzene	2500	2310	92	2310	92	0	78-120/10
98-06-6	tert-Butylbenzene	2500	2330	93	2360	94	1	78-121/10
75-15-0	Carbon disulfide	2500	2300	92	2370	95	3	67-131/11
56-23-5	Carbon tetrachloride	2500	2270	91	2330	93	3	72-130/11
108-90-7	Chlorobenzene	2500	2290	92	2310	92	1	83-114/10
75-00-3	Chloroethane	2500	2570	103	2640	106	3	67-141/12
67-66-3	Chloroform	2500	2070	83	2110	84	2	76-115/10
74-87-3	Chloromethane	2500	2180	87	2130	85	2	57-141/13
95-49-8	o-Chlorotoluene	2500	2290	92	2300	92	0	81-118/10
106-43-4	p-Chlorotoluene	2500	2280	91	2290	92	0	78-117/10
108-20-3	Di-Isopropyl ether	2500	2260	90	2260	90	0	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	2500	2230	89	2370	95	6	72-131/11
124-48-1	Dibromochloromethane	2500	2280	91	2360	94	3	80-128/10
106-93-4	1,2-Dibromoethane	2500	2300	92	2370	95	3	58-145/10
95-50-1	1,2-Dichlorobenzene	2500	2370	95	2380	95	0	83-117/10
541-73-1	1,3-Dichlorobenzene	2500	2360	94	2350	94	0	82-114/10
106-46-7	1,4-Dichlorobenzene	2500	2270	91	2250	90	1	79-114/10
75-71-8	Dichlorodifluoromethane	2500	2390	96	2340	94	2	49-146/13
75-34-3	1,1-Dichloroethane	2500	2260	90	2290	92	1	76-126/10
107-06-2	1,2-Dichloroethane	2500	2080	83	2160	86	4	76-118/10
75-35-4	1,1-Dichloroethene	2500	2380	95	2420	97	2	72-125/11
156-59-2	cis-1,2-Dichloroethene	2500	2320	93	2390	96	3	80-118/10
156-60-5	trans-1,2-Dichloroethene	2500	2260	90	2300	92	2	76-122/10
78-87-5	1,2-Dichloropropane	2500	2280	91	2300	92	1	82-123/10
142-28-9	1,3-Dichloropropane	2500	2280	91	2330	93	2	84-120/10
594-20-7	2,2-Dichloropropane	2500	2190	88	2230	89	2	66-130/11
563-58-6	1,1-Dichloropropene	2500	2310	92	2380	95	3	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-2, JD72469-3, JD72469-4, JD72469-5, JD72469-6, JD72469-7, JD72469-8, JD72469-9

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	2500	2320	93	2350	94	1	83-123/10
10061-02-6	trans-1,3-Dichloropropene	2500	2320	93	2340	94	1	83-123/10
123-91-1	1,4-Dioxane	62500	77400	124	80400	129	4	64-163/20
60-29-7	Ethyl Ether	2500	2330	93	2380	95	2	78-131/10
100-41-4	Ethylbenzene	2500	2290	92	2340	94	2	83-115/10
87-68-3	Hexachlorobutadiene	2500	2170	87	2200	88	1	65-130/11
591-78-6	2-Hexanone	10000	9650	97	10700	107	10	73-138/10
98-82-8	Isopropylbenzene	2500	2330	93	2370	95	2	81-122/11
99-87-6	p-Isopropyltoluene	2500	2340	94	2340	94	0	80-120/10
1634-04-4	Methyl Tert Butyl Ether	2500	2340	94	2470	99	5	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	10000	9320	93	10100	101	8	71-138/10
74-95-3	Methylene bromide	2500	2210	88	2270	91	3	81-122/10
75-09-2	Methylene chloride	2500	2130	85	2160	86	1	73-122/10
91-20-3	Naphthalene	2500	2050	82	2260	90	10	71-129/14
103-65-1	n-Propylbenzene	2500	2250	90	2280	91	1	77-120/10
100-42-5	Styrene	2500	2440	98	2480	99	2	84-122/10
994-05-8	tert-Amyl Methyl Ether	2500	2340	94	2430	97	4	77-125/11
637-92-3	tert-Butyl Ethyl Ether	2500	2260	90	2330	93	3	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	2500	2370	95	2460	98	4	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	2500	2210	88	2240	90	1	75-127/10
127-18-4	Tetrachloroethene	2500	2200	88	2230	89	1	73-125/11
109-99-9	Tetrahydrofuran	2500	2030	81	2180	87	7	61-136/11
108-88-3	Toluene	2500	2240	90	2280	91	2	82-118/10
87-61-6	1,2,3-Trichlorobenzene	2500	2100	84	2240	90	6	68-132/13
120-82-1	1,2,4-Trichlorobenzene	2500	2240	90	2310	92	3	72-133/12
71-55-6	1,1,1-Trichloroethane	2500	2190	88	2240	90	2	77-124/11
79-00-5	1,1,2-Trichloroethane	2500	2220	89	2290	92	3	83-122/10
79-01-6	Trichloroethene	2500	2290	92	2360	94	3	80-122/10
75-69-4	Trichlorofluoromethane	2500	2220	89	2240	90	1	69-132/11
96-18-4	1,2,3-Trichloropropane	2500	2160	86	2300	92	6	80-120/10
95-63-6	1,2,4-Trimethylbenzene	2500	2190	88	2210	88	1	80-119/10
108-67-8	1,3,5-Trimethylbenzene	2500	2270	91	2280	91	0	79-120/10
75-01-4	Vinyl chloride	2500	2480	99	2580	103	4	60-144/13
	m,p-Xylene	5000	4670	93	4770	95	2	82-119/10
95-47-6	o-Xylene	2500	2330	93	2400	96	3	84-120/10
1330-20-7	Xylene (total)	7500	7000	93	7160	95	2	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3D8040-BS	3D192341.D	1	09/11/23	JN	n/a	n/a	V3D8040
V3D8040-BSD	3D192342.D	1	09/11/23	JN	n/a	n/a	V3D8040

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-2, JD72469-3, JD72469-4, JD72469-5, JD72469-6, JD72469-7, JD72469-8, JD72469-9

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	100%	102%	80-124%
17060-07-0	1,2-Dichloroethane-D4	93%	94%	75-133%
2037-26-5	Toluene-D8	99%	99%	79-125%
460-00-4	4-Bromofluorobenzene	91%	90%	58-148%

(a) Outside in house control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-1, JD72469-10

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	364	182* a	335	168* a	8	52-156/12
71-43-2	Benzene	50	43.0	86	46.4	93	8	82-119/10
108-86-1	Bromobenzene	50	44.4	89	46.1	92	4	82-115/10
74-97-5	Bromochloromethane	50	55.0	110	56.0	112	2	82-123/10
75-27-4	Bromodichloromethane	50	40.0	80* b	42.6	85	6	83-121/10
75-25-2	Bromoform	50	46.8	94	47.7	95	2	74-138/10
74-83-9	Bromomethane	50	46.0	92	48.0	96	4	56-150/12
78-93-3	2-Butanone (MEK)	200	271	136	255	128	6	72-138/10
104-51-8	n-Butylbenzene	50	40.1	80* b	42.1	84	5	81-124/11
135-98-8	sec-Butylbenzene	50	40.3	81	40.5	81	0	78-120/10
98-06-6	tert-Butylbenzene	50	41.6	83	42.7	85	3	78-121/10
75-15-0	Carbon disulfide	50	51.9	104	53.0	106	2	67-131/11
56-23-5	Carbon tetrachloride	50	49.4	99	52.1	104	5	72-130/11
108-90-7	Chlorobenzene	50	45.1	90	47.2	94	5	83-114/10
75-00-3	Chloroethane	50	53.2	106	54.1	108	2	67-141/12
67-66-3	Chloroform	50	51.3	103	52.6	105	3	76-115/10
74-87-3	Chloromethane	50	54.2	108	55.4	111	2	57-141/13
95-49-8	o-Chlorotoluene	50	43.7	87	42.9	86	2	81-118/10
106-43-4	p-Chlorotoluene	50	42.8	86	42.6	85	0	78-117/10
108-20-3	Di-Isopropyl ether	50	55.2	110	58.0	116	5	66-138/10
96-12-8	1,2-Dibromo-3-chloropropane	50	35.0	70* c	37.4	75	7	72-131/11
124-48-1	Dibromochloromethane	50	44.2	88	45.6	91	3	80-128/10
106-93-4	1,2-Dibromoethane	50	48.5	97	48.8	98	1	58-145/10
95-50-1	1,2-Dichlorobenzene	50	41.1	82* b	45.7	91	11* d	83-117/10
541-73-1	1,3-Dichlorobenzene	50	42.2	84	43.1	86	2	82-114/10
106-46-7	1,4-Dichlorobenzene	50	43.9	88	45.4	91	3	79-114/10
75-71-8	Dichlorodifluoromethane	50	43.7	87	45.7	91	4	49-146/13
75-34-3	1,1-Dichloroethane	50	54.8	110	56.7	113	3	76-126/10
107-06-2	1,2-Dichloroethane	50	39.3	79	42.1	84	7	76-118/10
75-35-4	1,1-Dichloroethene	50	47.7	95	50.6	101	6	72-125/11
156-59-2	cis-1,2-Dichloroethene	50	52.7	105	51.9	104	2	80-118/10
156-60-5	trans-1,2-Dichloroethene	50	49.0	98	49.5	99	1	76-122/10
78-87-5	1,2-Dichloropropane	50	45.3	91	49.2	98	8	82-123/10
142-28-9	1,3-Dichloropropane	50	46.1	92	49.6	99	7	84-120/10
594-20-7	2,2-Dichloropropane	50	48.4	97	48.3	97	0	66-130/11
563-58-6	1,1-Dichloropropene	50	47.5	95	50.7	101	7	78-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-1, JD72469-10

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	BSD ug/kg	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	40.2	80* b	44.7	89	11* d	83-123/10
10061-02-6	trans-1,3-Dichloropropene	50	45.5	91	47.5	95	4	83-123/10
123-91-1	1,4-Dioxane	1250	1220	98	1280	102	5	64-163/20
60-29-7	Ethyl Ether	50	55.6	111	54.0	108	3	78-131/10
100-41-4	Ethylbenzene	50	44.0	88	47.2	94	7	83-115/10
87-68-3	Hexachlorobutadiene	50	44.8	90	47.2	94	5	65-130/11
591-78-6	2-Hexanone	200	218	109	228	114	4	73-138/10
98-82-8	Isopropylbenzene	50	41.6	83	41.2	82	1	81-122/11
99-87-6	p-Isopropyltoluene	50	40.1	80	43.9	88	9	80-120/10
1634-04-4	Methyl Tert Butyl Ether	50	51.7	103	52.0	104	1	75-126/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	179	90	184	92	3	71-138/10
74-95-3	Methylene bromide	50	42.6	85	46.0	92	8	81-122/10
75-09-2	Methylene chloride	50	52.5	105	53.3	107	2	73-122/10
91-20-3	Naphthalene	50	38.5	77	42.0	84	9	71-129/14
103-65-1	n-Propylbenzene	50	40.2	80	41.1	82	2	77-120/10
100-42-5	Styrene	50	42.9	86	47.7	95	11* d	84-122/10
994-05-8	tert-Amyl Methyl Ether	50	43.6	87	47.4	95	8	77-125/11
637-92-3	tert-Butyl Ethyl Ether	50	58.3	117	59.1	118	1	75-131/10
630-20-6	1,1,1,2-Tetrachloroethane	50	47.0	94	49.7	99	6	81-125/10
79-34-5	1,1,2,2-Tetrachloroethane	50	41.5	83	44.9	90	8	75-127/10
127-18-4	Tetrachloroethene	50	44.4	89	49.7	99	11	73-125/11
109-99-9	Tetrahydrofuran	50	48.9	98	49.1	98	0	61-136/11
108-88-3	Toluene	50	46.6	93	48.6	97	4	82-118/10
87-61-6	1,2,3-Trichlorobenzene	50	41.3	83	44.2	88	7	68-132/13
120-82-1	1,2,4-Trichlorobenzene	50	43.3	87	47.2	94	9	72-133/12
71-55-6	1,1,1-Trichloroethane	50	50.5	101	53.7	107	6	77-124/11
79-00-5	1,1,2-Trichloroethane	50	46.7	93	47.9	96	3	83-122/10
79-01-6	Trichloroethene	50	42.6	85	47.1	94	10	80-122/10
75-69-4	Trichlorofluoromethane	50	47.9	96	49.8	100	4	69-132/11
96-18-4	1,2,3-Trichloropropane	50	46.2	92	45.3	91	2	80-120/10
95-63-6	1,2,4-Trimethylbenzene	50	43.8	88	44.6	89	2	80-119/10
108-67-8	1,3,5-Trimethylbenzene	50	42.1	84	41.4	83	2	79-120/10
75-01-4	Vinyl chloride	50	51.5	103	54.6	109	6	60-144/13
	m,p-Xylene	100	88.9	89	92.3	92	4	82-119/10
95-47-6	o-Xylene	50	42.9	86	48.8	98	13* d	84-120/10
1330-20-7	Xylene (total)	150	132	88	141	94	7	83-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1C8503-BS	1C196256.D	1	09/12/23	JN	n/a	n/a	V1C8503
V1C8503-BSD	1C196257.D	1	09/12/23	JN	n/a	n/a	V1C8503

The QC reported here applies to the following samples:

Method: SW846 8260D

JD72469-1, JD72469-10

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	115%	113%	80-124%
17060-07-0	1,2-Dichloroethane-D4	91%	94%	75-133%
2037-26-5	Toluene-D8	105%	107%	79-125%
460-00-4	4-Bromofluorobenzene	94%	94%	58-148%

- (a) High percent recovery and no associated positive reported in the QC batch.
- (b) Outside of in house control limits, but within reasonable method recovery limits.
- (c) Outside of in house control limits, but within the marginal exceedance limits.
- (d) Outside in house control limits.

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1C8503-CC8418	Injection Date:	09/12/23
Lab File ID:	1C196254.D	Injection Time:	09:48
Instrument ID:	GCMS1C	Method:	SW846 8260D

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	119196	7.09	432044	9.34	639510	10.25	488318	13.41	253637	15.73
Upper Limit ^a	238392	7.59	864088	9.84	1279020	10.75	976636	13.91	507274	16.23
Lower Limit ^b	59598	6.59	216022	8.84	319755	9.75	244159	12.91	126819	15.23

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
V1C8503-BS	128004	7.10	432297	9.34	643251	10.25	498401	13.41	263144	15.73
V1C8503-BS D	123998	7.09	436540	9.34	627853	10.25	500852	13.41	264829	15.73
V1C8503-MB	128509	7.09	449216	9.34	655914	10.25	513903	13.41	258024	15.73
JD72387-1	132691	7.10	454597	9.34	681243	10.25	529268	13.41	257886	15.73
JD72387-2	123598	7.09	418695	9.34	626551	10.25	486718	13.41	234579	15.73
ZZZZZZ	120730	7.10	439264	9.34	639266	10.25	522632	13.41	250993	15.73
ZZZZZZ	123726	7.09	428376	9.34	636215	10.25	514685	13.41	245974	15.73
ZZZZZZ	108374	7.10	428819	9.34	647262	10.25	520430	13.41	261790	15.74
JD72387-2MS	119305	7.09	424036	9.34	635574	10.25	501729	13.41	262759	15.73
JD72387-1DUP	174111	7.09	432273	9.34	657772	10.25	554272	13.41	270961	15.73
ZZZZZZ	112789	7.09	423863	9.34	623792	10.25	523837	13.41	247400	15.73
JD72469-10	118944	7.09	428863	9.34	621363	10.25	507456	13.41	244485	15.73
ZZZZZZ	128903	7.09	458794	9.34	673149	10.25	526424	13.41	268607	15.73
ZZZZZZ	117876	7.10	432784	9.34	642103	10.25	543173	13.41	269317	15.73
ZZZZZZ	135021	7.09	442960	9.34	653801	10.25	543636	13.41	281014	15.73
ZZZZZZ	126281	7.10	427863	9.34	625418	10.25	540569	13.41	247576	15.73
JD72469-1	118047	7.10	435290	9.34	635750	10.25	532475	13.41	258952	15.73
ZZZZZZ	116435	7.10	430266	9.34	637882	10.25	502308	13.41	251007	15.73
ZZZZZZ	122830	7.09	441905	9.34	648800	10.25	508321	13.41	261432	15.73
ZZZZZZ	119874	7.10	420290	9.34	622985	10.25	494364	13.41	243325	15.74

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.3.1
6

Internal Standard Area Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V3D8040-CC8035	Injection Date: 09/11/23
Lab File ID: 3D192340.D	Injection Time: 10:06
Instrument ID: GCMS3D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	219654	2.69	473501	3.86	936346	4.40	822400	6.76	357652	8.94
Upper Limit ^a	439308	3.19	947002	4.36	1872692	4.90	1644800	7.26	715304	9.44
Lower Limit ^b	109827	2.19	236751	3.36	468173	3.90	411200	6.26	178826	8.44

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3D8040-BS	200567	2.69	501181	3.86	979814	4.40	848470	6.76	381428	8.93
V3D8040-BSD	223652	2.69	499718	3.86	987889	4.40	860330	6.76	392502	8.94
V3D8040-MB	189806	2.70	468595	3.86	908102	4.40	788227	6.76	339045	8.93
ZZZZZZ	189806	2.70	468595	3.86	908102	4.40	788227	6.76	339045	8.93
ZZZZZZ	210591	2.70	464373	3.86	912403	4.40	785858	6.76	339641	8.93
ZZZZZZ	204100	2.70	470392	3.86	924637	4.40	796333	6.76	340938	8.94
ZZZZZZ	196527	2.70	470197	3.86	917133	4.40	795337	6.76	345236	8.94
JD72469-9	183450	2.70	455833	3.86	892060	4.40	771215	6.76	334599	8.94
ZZZZZZ	197966	2.70	459384	3.86	893449	4.40	767712	6.76	335284	8.94
ZZZZZZ	185942	2.70	453640	3.86	894251	4.40	778086	6.76	337040	8.94
ZZZZZZ	185390	2.70	447510	3.86	880099	4.40	766567	6.76	335519	8.94
JD72452-1	200045	2.70	475242	3.86	932141	4.40	807827	6.76	350422	8.94
ZZZZZZ	195999	2.70	452173	3.86	888835	4.40	775432	6.76	343414	8.94
ZZZZZZ	199050	2.70	451147	3.86	887320	4.40	771551	6.76	348145	8.93
ZZZZZZ	171175	2.70	444880	3.86	877906	4.40	762275	6.76	337740	8.94
ZZZZZZ	207342	2.70	456367	3.86	897277	4.40	782487	6.76	352638	8.94
ZZZZZZ	229081	2.70	484173	3.86	962037	4.40	859496	6.76	392865	8.94
JD72452-1MS	234300	2.70	526064	3.86	1033237	4.40	886238	6.76	412824	8.94
JD72452-1MSD	251445	2.71	526987	3.86	1017477	4.40	880115	6.76	416542	8.94
ZZZZZZ	193059	2.70	489300	3.86	953724	4.40	831040	6.76	370309	8.94
JD72469-2 ^c	162134	2.70	487662	3.86	934482	4.40	812683	6.76	353031	8.94
JD72469-3 ^c	163580	2.70	491823	3.86	924386	4.40	797297	6.76	353221	8.94
JD72469-4 ^c	154948	2.70	488530	3.86	912673	4.40	792362	6.76	353630	8.94
JD72469-5 ^c	151895	2.70	492420	3.86	914440	4.40	799580	6.76	361260	8.94
JD72469-6 ^c	169533	2.70	477839	3.86	897310	4.40	771883	6.76	334979	8.94
JD72469-7 ^c	173204	2.70	474539	3.86	881042	4.40	767322	6.76	343636	8.94
JD72469-8 ^c	159577	2.70	478415	3.86	885758	4.40	772683	6.76	342552	8.94

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

Internal Standard Area Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V3D8040-CC8035	Injection Date: 09/11/23
Lab File ID: 3D192340.D	Injection Time: 10:06
Instrument ID: GCMS3D	Method: SW846 8260D

Lab	IS 1		IS 2		IS 3		IS 4		IS 5	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

- (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
- (c) Dilution required due to high concentration of target compound.

6.3.2
6

Surrogate Recovery Summary

Job Number: JD72469
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: SO
----------------------------	-------------------

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD72469-1	1C196274.D	115	96	104	98
JD72469-2	3D192364.D	96	94	99	92
JD72469-3	3D192365.D	92	95	98	90
JD72469-4	3D192366.D	95	94	98	92
JD72469-5	3D192367.D	94	93	99	88
JD72469-6	3D192368.D	95	93	99	92
JD72469-7	3D192369.D	92	95	98	89
JD72469-8	3D192370.D	92	95	98	89
JD72469-9	3D192348.D	99	94	98	93
JD72469-10	1C196269.D	112	92	108	104
V1C8503-BS	1C196256.D	115	91	105	94
V1C8503-BSD	1C196257.D	113	94	107	94
V1C8503-MB	1C196259.D	113	90	109	94
V3D8040-BS	3D192341.D	100	93	99	91
V3D8040-BSD	3D192342.D	102	94	99	90
V3D8040-MB	3D192344.D	99	95	100	93

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-124%
S2 = 1,2-Dichloroethane-D4	75-133%
S3 = Toluene-D8	79-125%
S4 = 4-Bromofluorobenzene	58-148%

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS111.A.CS.3.EV.02FL PO#148048917

SGS Job Number: JD74811

Sampling Dates: 10/12/23 - 10/13/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorette@jacobs.com; Bernice.Kidd@jacobs.com;
EDMData@jacobs.com
ATTN: Raymond J. Cadorette

Total number of pages in report: **43**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200
Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD74811

Varian, Beverly, MA

Project No: VARMS111.A.CS.3.EV.02FL PO#148048917

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD74811-1	10/13/23	12:50	DK	10/13/23	AQ	Ground Water	OB-62_20231013_N_WG
JD74811-2	10/13/23	11:50	DK	10/13/23	AQ	Ground Water	OB-63_20231013_N_WG
JD74811-3	10/13/23	13:40	DK	10/13/23	AQ	Ground Water	OB-64_20231013_N_WG
JD74811-4	10/12/23	12:35	DK	10/13/23	AQ	Ground Water	OB-65_20231012_N_WG

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD74811

Site: Varian, Beverly, MA

Report Date 10/20/2023 5:30:37 P

On 10/13/2023, 4 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 4.4 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD74811 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ	Batch ID: VIR257
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ	Batch ID: V4D5848
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD74811-2: Dilution required due to high concentration of target compound.
- JD74811-2 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-2 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD74811-1 for Bromomethane: This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-1 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-3 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD74811-3 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-3 for Bromomethane: This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-4 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD74811-4 for 2-Butanone (MEK): Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-4 for Bromomethane: This compound is outside the MCP limits in the associated BSD biased high.
- JD74811-1 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- The BSD recovery(s) for Chloroform: Outside of in house control limits, but within reasonable method recovery limits.
- Not all RL meet the requirement.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Summary of Hits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD74811-1 OB-62_20231013_N_WG

Chloroform	2.4	1.0		ug/l	SW846 8260D
Naphthalene	6.3	5.0		ug/l	SW846 8260D
Tetrachloroethene	9.3	1.0		ug/l	SW846 8260D
Trichloroethene	5.3	1.0		ug/l	SW846 8260D

JD74811-2 OB-63_20231013_N_WG

Acetone ^a	2550	1000		ug/l	SW846 8260D
cis-1,2-Dichloroethene ^b	3410	100		ug/l	SW846 8260D
Ethylbenzene ^b	126	100		ug/l	SW846 8260D
Tetrachloroethene ^b	7930	100		ug/l	SW846 8260D
Trichloroethene ^b	18000	100		ug/l	SW846 8260D

JD74811-3 OB-64_20231013_N_WG

1,1-Dichloroethane	1.0	1.0		ug/l	SW846 8260D
1,1-Dichloroethene	1.6	1.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene	38.5	1.0		ug/l	SW846 8260D
Tetrachloroethene	12.9	1.0		ug/l	SW846 8260D
Trichloroethene	254	10		ug/l	SW846 8260D

JD74811-4 OB-65_20231012_N_WG

cis-1,2-Dichloroethene	1.0	1.0		ug/l	SW846 8260D
Tetrachloroethene	46.0	1.0		ug/l	SW846 8260D
Trichloroethene	93.1	1.0		ug/l	SW846 8260D

(a) Dilution required due to high concentration of target compound. Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high.

(b) Dilution required due to high concentration of target compound.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	OB-62_20231013_N_WG	Date Sampled:	10/13/23
Lab Sample ID:	JD74811-1	Date Received:	10/13/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D132094.D	1	10/17/23 18:34	NW	n/a	n/a	V4D5848
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK) ^c	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	2.4	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-62_20231013_N_WG	Date Sampled:	10/13/23
Lab Sample ID:	JD74811-1	Date Received:	10/13/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	6.3	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	9.3	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	5.3	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-62_20231013_N_WG	
Lab Sample ID: JD74811-1	Date Sampled: 10/13/23
Matrix: AQ - Ground Water	Date Received: 10/13/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: OB-63_20231013_N_WG	
Lab Sample ID: JD74811-2	Date Sampled: 10/13/23
Matrix: AQ - Ground Water	Date Received: 10/13/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	4D132097.D	100	10/17/23 19:59	NW	n/a	n/a	V4D5848
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	2550	1000	ug/l	
71-43-2	Benzene	ND	50	ug/l	
108-86-1	Bromobenzene	ND	100	ug/l	
74-97-5	Bromochloromethane	ND	100	ug/l	
75-27-4	Bromodichloromethane	ND	100	ug/l	
75-25-2	Bromoform	ND	100	ug/l	
74-83-9	Bromomethane ^c	ND	200	ug/l	
78-93-3	2-Butanone (MEK) ^d	ND	1000	ug/l	
104-51-8	n-Butylbenzene	ND	200	ug/l	
135-98-8	sec-Butylbenzene	ND	200	ug/l	
98-06-6	tert-Butylbenzene	ND	200	ug/l	
75-15-0	Carbon disulfide	ND	200	ug/l	
56-23-5	Carbon tetrachloride	ND	100	ug/l	
108-90-7	Chlorobenzene	ND	100	ug/l	
75-00-3	Chloroethane	ND	100	ug/l	
67-66-3	Chloroform	ND	100	ug/l	
74-87-3	Chloromethane	ND	100	ug/l	
95-49-8	o-Chlorotoluene	ND	200	ug/l	
106-43-4	p-Chlorotoluene	ND	200	ug/l	
108-20-3	Di-Isopropyl ether	ND	200	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	200	ug/l	
124-48-1	Dibromochloromethane	ND	100	ug/l	
106-93-4	1,2-Dibromoethane	ND	100	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	100	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	100	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	100	ug/l	
75-71-8	Dichlorodifluoromethane	ND	200	ug/l	
75-34-3	1,1-Dichloroethane	ND	100	ug/l	
107-06-2	1,2-Dichloroethane	ND	100	ug/l	
75-35-4	1,1-Dichloroethene	ND	100	ug/l	
156-59-2	cis-1,2-Dichloroethene	3410	100	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	100	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-63_20231013_N_WG
Lab Sample ID: JD74811-2
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 10/13/23
Date Received: 10/13/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	100	ug/l	
142-28-9	1,3-Dichloropropane	ND	100	ug/l	
594-20-7	2,2-Dichloropropane	ND	100	ug/l	
563-58-6	1,1-Dichloropropene	ND	100	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	100	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	100	ug/l	
123-91-1	1,4-Dioxane	ND	13000	ug/l	
60-29-7	Ethyl Ether	ND	200	ug/l	
100-41-4	Ethylbenzene	126	100	ug/l	
87-68-3	Hexachlorobutadiene	ND	200	ug/l	
591-78-6	2-Hexanone	ND	500	ug/l	
98-82-8	Isopropylbenzene	ND	100	ug/l	
99-87-6	p-Isopropyltoluene	ND	200	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	100	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	500	ug/l	
74-95-3	Methylene bromide	ND	100	ug/l	
75-09-2	Methylene chloride	ND	200	ug/l	
91-20-3	Naphthalene	ND	500	ug/l	
103-65-1	n-Propylbenzene	ND	200	ug/l	
100-42-5	Styrene	ND	100	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	200	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	200	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	ug/l	
127-18-4	Tetrachloroethene	7930	100	ug/l	
109-99-9	Tetrahydrofuran	ND	1000	ug/l	
108-88-3	Toluene	ND	100	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	100	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	100	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	100	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	100	ug/l	
79-01-6	Trichloroethene	18000	100	ug/l	
75-69-4	Trichlorofluoromethane	ND	200	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	200	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	200	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	200	ug/l	
75-01-4	Vinyl chloride	ND	100	ug/l	
	m,p-Xylene	ND	100	ug/l	
95-47-6	o-Xylene	ND	100	ug/l	
1330-20-7	Xylene (total)	ND	100	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-63_20231013_N_WG		Date Sampled: 10/13/23
Lab Sample ID: JD74811-2		Date Received: 10/13/23
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Varian, Beverly, MA		

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	101%		82-114%

- (a) Dilution required due to high concentration of target compound.
- (b) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) This compound is outside the MCP limits in the associated BSD biased high.
- (d) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	OB-64_20231013_N_WG	Date Sampled:	10/13/23
Lab Sample ID:	JD74811-3	Date Received:	10/13/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D132095.D	1	10/17/23 19:02	NW	n/a	n/a	V4D5848
Run #2	1R07473.D	10	10/19/23 16:58	JN	n/a	n/a	V1R257

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK) ^c	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	1.0	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	1.6	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	38.5	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-64_20231013_N_WG
Lab Sample ID: JD74811-3
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 10/13/23
Date Received: 10/13/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	12.9	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	254 ^d	10	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-64_20231013_N_WG Lab Sample ID: JD74811-3 Matrix: AQ - Ground Water Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 10/13/23 Date Received: 10/13/23 Percent Solids: n/a
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%	94%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	103%	80-120%
2037-26-5	Toluene-D8	99%	98%	80-120%
460-00-4	4-Bromofluorobenzene	100%	98%	82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (d) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID:	OB-65_20231012_N_WG	Date Sampled:	10/12/23
Lab Sample ID:	JD74811-4	Date Received:	10/13/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D132096.D	1	10/17/23 19:31	NW	n/a	n/a	V4D5848
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK) ^c	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	1.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-65_20231012_N_WG	Date Sampled:	10/12/23
Lab Sample ID:	JD74811-4	Date Received:	10/13/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	46.0	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	93.1	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-65_20231012_N_WG	Date Sampled: 10/12/23
Lab Sample ID: JD74811-4	Date Received: 10/13/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

4.4
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	100%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits



aw

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200
www.sgs.com/ehsusa

FED-EX Tracking # 6435 9822 0388
Bottle Order Control # VP-10423-5
SGS Quote #
SGS Job # JD74811

Client / Reporting Information, Project Information, Billing Information, Matrix Codes, Collection table with columns for Date, Time, Sampled by, Grab (G) Comp (C), Source Chlorinated (YN), Matrix, # of bottles, and various chemical parameters.

Turn Around Time (Business Days), Approved By (SGS PM) / Date, Deliverable, Comments / Special Instructions, SGS Courier logo and address.

Sample Custody must be documented below each time samples change possession, including courier delivery. Includes columns for Relinquished/Received By, Date/Time, and Custody Seal #.

5.1
5

SGS Sample Receipt Summary

Job Number: JD74811

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 10/13/2023 5:00:00 PM

Delivery Method: FED EX

Airbill #'s: 6455 9822 0388

Cooler Temps (Raw Measured) °C: Cooler 1: (4.7);

Cooler Temps (Corrected) °C: Cooler 1: (4.4);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smp'l Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>IR Gun 40</u> | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservatio

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: <u>231619</u>	pH 12+: <u>203117A</u>	Other: (Specify) _____
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Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JD74811

Requested Date: 10/16/2023 Received Date: 10/13/2023
Account Name: Jacobs Engineering Due Date: 10/20/2023
Project Description: Varian, Beverly, MA MAMCP
C/O Initiated By: TASHA_SAN PM: VP TAT (Days): 7

=====
Sample #: JD74811-1 Dept:
Client ID: OB62_20231013_N_WG TAT: 7
Change: Revise ID to OB-62_20231013_N_WG

=====
Sample #: JD74811-2 Dept:
Client ID: OB63_20231013_N_WG TAT: 7
Change: Revise ID to OB-63_20231013_N_WG

=====
Sample #: JD74811-4 Dept:
Client ID: OB65_20231012_N_WG TAT: 7
Change: Revise ID to OB-65_20231012_N_WG

=====
Sample #: JD74811-3 Dept:
Client ID: OB64_20231013_N_WG TAT: 7
Change: Revise ID to OB-64_20231013_N_WG

Above Changes Per: Bernice Kidd Date/Time: 10/16/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM
July 1, 2010
Final

Exhibit VII A
Revision No. 1

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD74811
Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD74811-1,JD74811-2,JD74811-3,JD74811-4

Matrices: Groundwater/Surface Water (X) Soil/Sediment () Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

¹ All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 20-Oct-23

5.2
5

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD74811

Varian, Beverly, MA

Project No: VARMS111.A.CS.3.EV.02FL PO#148048917

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD74811-1 Collected: 13-OCT-23 12:50 By: DK Received: 13-OCT-23 By: JK OB-62_20231013_N_WG						
JD74811-1	SW846 8260D	17-OCT-23 18:34	NW			V8260MCP
JD74811-2 Collected: 13-OCT-23 11:50 By: DK Received: 13-OCT-23 By: JK OB-63_20231013_N_WG						
JD74811-2	SW846 8260D	17-OCT-23 19:59	NW			V8260MCP
JD74811-3 Collected: 13-OCT-23 13:40 By: DK Received: 13-OCT-23 By: JK OB-64_20231013_N_WG						
JD74811-3	SW846 8260D	17-OCT-23 19:02	NW			V8260MCP
JD74811-3	SW846 8260D	19-OCT-23 16:58	JN			V8260MCP
JD74811-4 Collected: 12-OCT-23 12:35 By: DK Received: 13-OCT-23 By: JK OB-65_20231012_N_WG						
JD74811-4	SW846 8260D	17-OCT-23 19:31	NW			V8260MCP

QC Evaluation: MA MCP Limits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1R257 SW846 8260D							
V1R257-BS	79-01-6	Trichloroethene	BSP	REC	117	%	70-130
V1R257-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	86	%	70-130
V1R257-BS	2037-26-5	Toluene-D8	BSP	SURR	105	%	70-130
V1R257-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	100	%	70-130
V1R257-BSD	79-01-6	Trichloroethene	BSD	REC	115	%	70-130
V1R257-BSD	79-01-6	Trichloroethene	BSD	RPD	2	%	20
V1R257-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	88	%	70-130
V1R257-BSD	2037-26-5	Toluene-D8	BSD	SURR	103	%	70-130
V1R257-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	103	%	70-130
V1R257-MB	1868-53-7	Dibromofluoromethane	MB	SURR	93	%	70-130
V1R257-MB	2037-26-5	Toluene-D8	MB	SURR	99	%	70-130
V1R257-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	96	%	70-130
JD74811-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	94	%	70-130
JD74811-3	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD74811-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	70-130
V4D5848 SW846 8260D							
V4D5848-BS	67-64-1	Acetone	BSP	REC	153	%	70-130
V4D5848-BS	71-43-2	Benzene	BSP	REC	99	%	70-130
V4D5848-BS	108-86-1	Bromobenzene	BSP	REC	100	%	70-130
V4D5848-BS	74-97-5	Bromochloromethane	BSP	REC	110	%	70-130
V4D5848-BS	75-27-4	Bromodichloromethane	BSP	REC	100	%	70-130
V4D5848-BS	75-25-2	Bromoform	BSP	REC	94	%	70-130
V4D5848-BS	74-83-9	Bromomethane	BSP	REC	127	%	70-130
V4D5848-BS	78-93-3	2-Butanone (MEK)	BSP	REC	130	%	70-130
V4D5848-BS	104-51-8	n-Butylbenzene	BSP	REC	99	%	70-130
V4D5848-BS	135-98-8	sec-Butylbenzene	BSP	REC	97	%	70-130
V4D5848-BS	98-06-6	tert-Butylbenzene	BSP	REC	99	%	70-130
V4D5848-BS	75-15-0	Carbon disulfide	BSP	REC	114	%	70-130
V4D5848-BS	56-23-5	Carbon tetrachloride	BSP	REC	113	%	70-130
V4D5848-BS	108-90-7	Chlorobenzene	BSP	REC	97	%	70-130
V4D5848-BS	75-00-3	Chloroethane	BSP	REC	106	%	70-130
V4D5848-BS	67-66-3	Chloroform	BSP	REC	116	%	70-130
V4D5848-BS	74-87-3	Chloromethane	BSP	REC	106	%	70-130
V4D5848-BS	95-49-8	o-Chlorotoluene	BSP	REC	97	%	70-130
V4D5848-BS	106-43-4	p-Chlorotoluene	BSP	REC	94	%	70-130
V4D5848-BS	108-20-3	Di-Isopropyl ether	BSP	REC	107	%	70-130
V4D5848-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	98	%	70-130
V4D5848-BS	124-48-1	Dibromochloromethane	BSP	REC	96	%	70-130
V4D5848-BS	106-93-4	1,2-Dibromoethane	BSP	REC	96	%	70-130
V4D5848-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	99	%	70-130

* Sample used for QC is not from job JD74811

QC Evaluation: MA MCP Limits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5848-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	98	%	70-130
V4D5848-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	99	%	70-130
V4D5848-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	106	%	70-130
V4D5848-BS	75-34-3	1,1-Dichloroethane	BSP	REC	109	%	70-130
V4D5848-BS	107-06-2	1,2-Dichloroethane	BSP	REC	98	%	70-130
V4D5848-BS	75-35-4	1,1-Dichloroethene	BSP	REC	113	%	70-130
V4D5848-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	106	%	70-130
V4D5848-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	111	%	70-130
V4D5848-BS	78-87-5	1,2-Dichloropropane	BSP	REC	103	%	70-130
V4D5848-BS	142-28-9	1,3-Dichloropropane	BSP	REC	96	%	70-130
V4D5848-BS	594-20-7	2,2-Dichloropropane	BSP	REC	106	%	70-130
V4D5848-BS	563-58-6	1,1-Dichloropropene	BSP	REC	111	%	70-130
V4D5848-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	101	%	70-130
V4D5848-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	95	%	70-130
V4D5848-BS	123-91-1	1,4-Dioxane	BSP	REC	98	%	70-130
V4D5848-BS	60-29-7	Ethyl Ether	BSP	REC	119	%	70-130
V4D5848-BS	100-41-4	Ethylbenzene	BSP	REC	96	%	70-130
V4D5848-BS	87-68-3	Hexachlorobutadiene	BSP	REC	109	%	70-130
V4D5848-BS	591-78-6	2-Hexanone	BSP	REC	102	%	70-130
V4D5848-BS	98-82-8	Isopropylbenzene	BSP	REC	96	%	70-130
V4D5848-BS	99-87-6	p-Isopropyltoluene	BSP	REC	98	%	70-130
V4D5848-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	110	%	70-130
V4D5848-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	97	%	70-130
V4D5848-BS	74-95-3	Methylene bromide	BSP	REC	101	%	70-130
V4D5848-BS	75-09-2	Methylene chloride	BSP	REC	101	%	70-130
V4D5848-BS	91-20-3	Naphthalene	BSP	REC	100	%	70-130
V4D5848-BS	103-65-1	n-Propylbenzene	BSP	REC	98	%	70-130
V4D5848-BS	100-42-5	Styrene	BSP	REC	97	%	70-130
V4D5848-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	101	%	70-130
V4D5848-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	109	%	70-130
V4D5848-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	97	%	70-130
V4D5848-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	95	%	70-130
V4D5848-BS	127-18-4	Tetrachloroethene	BSP	REC	97	%	70-130
V4D5848-BS	109-99-9	Tetrahydrofuran	BSP	REC	103	%	70-130
V4D5848-BS	108-88-3	Toluene	BSP	REC	97	%	70-130
V4D5848-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	100	%	70-130
V4D5848-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	105	%	70-130
V4D5848-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	112	%	70-130
V4D5848-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	95	%	70-130
V4D5848-BS	79-01-6	Trichloroethene	BSP	REC	105	%	70-130
V4D5848-BS	75-69-4	Trichlorofluoromethane	BSP	REC	118	%	70-130
V4D5848-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	100	%	70-130
V4D5848-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	98	%	70-130
V4D5848-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	97	%	70-130
V4D5848-BS	75-01-4	Vinyl chloride	BSP	REC	116	%	70-130

* Sample used for QC is not from job JD74811

5.4
5

QC Evaluation: MA MCP Limits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5848-BS		m,p-Xylene	BSP	REC	96	%	70-130
V4D5848-BS	95-47-6	o-Xylene	BSP	REC	97	%	70-130
V4D5848-BS	1330-20-7	Xylene (total)	BSP	REC	96	%	70-130
V4D5848-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	112	%	70-130
V4D5848-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	70-130
V4D5848-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	101	%	70-130
V4D5848-BSD	67-64-1	Acetone	BSD	REC	160	%	70-130
V4D5848-BSD	67-64-1	Acetone	BSD	RPD	4	%	20
V4D5848-BSD	71-43-2	Benzene	BSD	REC	101	%	70-130
V4D5848-BSD	71-43-2	Benzene	BSD	RPD	2	%	20
V4D5848-BSD	108-86-1	Bromobenzene	BSD	REC	101	%	70-130
V4D5848-BSD	108-86-1	Bromobenzene	BSD	RPD	1	%	20
V4D5848-BSD	74-97-5	Bromochloromethane	BSD	REC	112	%	70-130
V4D5848-BSD	74-97-5	Bromochloromethane	BSD	RPD	2	%	20
V4D5848-BSD	75-27-4	Bromodichloromethane	BSD	REC	102	%	70-130
V4D5848-BSD	75-27-4	Bromodichloromethane	BSD	RPD	1	%	20
V4D5848-BSD	75-25-2	Bromoform	BSD	REC	99	%	70-130
V4D5848-BSD	75-25-2	Bromoform	BSD	RPD	5	%	20
V4D5848-BSD	74-83-9	Bromomethane	BSD	REC	132	%	70-130
V4D5848-BSD	74-83-9	Bromomethane	BSD	RPD	4	%	20
V4D5848-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	140	%	70-130
V4D5848-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	8	%	20
V4D5848-BSD	104-51-8	n-Butylbenzene	BSD	REC	103	%	70-130
V4D5848-BSD	104-51-8	n-Butylbenzene	BSD	RPD	4	%	20
V4D5848-BSD	135-98-8	sec-Butylbenzene	BSD	REC	100	%	70-130
V4D5848-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	3	%	20
V4D5848-BSD	98-06-6	tert-Butylbenzene	BSD	REC	102	%	70-130
V4D5848-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V4D5848-BSD	75-15-0	Carbon disulfide	BSD	REC	114	%	70-130
V4D5848-BSD	75-15-0	Carbon disulfide	BSD	RPD	0	%	20
V4D5848-BSD	56-23-5	Carbon tetrachloride	BSD	REC	115	%	70-130
V4D5848-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	2	%	20
V4D5848-BSD	108-90-7	Chlorobenzene	BSD	REC	100	%	70-130
V4D5848-BSD	108-90-7	Chlorobenzene	BSD	RPD	3	%	20
V4D5848-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V4D5848-BSD	75-00-3	Chloroethane	BSD	RPD	0	%	20
V4D5848-BSD	67-66-3	Chloroform	BSD	REC	119 ^a	%	70-130
V4D5848-BSD	67-66-3	Chloroform	BSD	RPD	2	%	20
V4D5848-BSD	74-87-3	Chloromethane	BSD	REC	103	%	70-130
V4D5848-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V4D5848-BSD	95-49-8	o-Chlorotoluene	BSD	REC	99	%	70-130
V4D5848-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	3	%	20
V4D5848-BSD	106-43-4	p-Chlorotoluene	BSD	REC	96	%	70-130
V4D5848-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V4D5848-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	109	%	70-130

* Sample used for QC is not from job JD74811

QC Evaluation: MA MCP Limits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5848-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	1	%	20
V4D5848-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	107	%	70-130
V4D5848-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	9	%	20
V4D5848-BSD	124-48-1	Dibromochloromethane	BSD	REC	100	%	70-130
V4D5848-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V4D5848-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	100	%	70-130
V4D5848-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	4	%	20
V4D5848-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	101	%	70-130
V4D5848-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	2	%	20
V4D5848-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	99	%	70-130
V4D5848-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V4D5848-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	102	%	70-130
V4D5848-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V4D5848-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	107	%	70-130
V4D5848-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	0	%	20
V4D5848-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	111	%	70-130
V4D5848-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	1	%	20
V4D5848-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	101	%	70-130
V4D5848-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	2	%	20
V4D5848-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	115	%	70-130
V4D5848-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V4D5848-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	108	%	70-130
V4D5848-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V4D5848-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	112	%	70-130
V4D5848-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	1	%	20
V4D5848-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	105	%	70-130
V4D5848-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	2	%	20
V4D5848-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	98	%	70-130
V4D5848-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V4D5848-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	107	%	70-130
V4D5848-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	1	%	20
V4D5848-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	113	%	70-130
V4D5848-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	2	%	20
V4D5848-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	103	%	70-130
V4D5848-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	2	%	20
V4D5848-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	98	%	70-130
V4D5848-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	3	%	20
V4D5848-BSD	123-91-1	1,4-Dioxane	BSD	REC	96	%	70-130
V4D5848-BSD	123-91-1	1,4-Dioxane	BSD	RPD	2	%	20
V4D5848-BSD	60-29-7	Ethyl Ether	BSD	REC	119	%	70-130
V4D5848-BSD	60-29-7	Ethyl Ether	BSD	RPD	0	%	20
V4D5848-BSD	100-41-4	Ethylbenzene	BSD	REC	99	%	70-130
V4D5848-BSD	100-41-4	Ethylbenzene	BSD	RPD	3	%	20
V4D5848-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	111	%	70-130
V4D5848-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	1	%	20

* Sample used for QC is not from job JD74811

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QC Evaluation: MA MCP Limits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5848-BSD	591-78-6	2-Hexanone	BSD	REC	110	%	70-130
V4D5848-BSD	591-78-6	2-Hexanone	BSD	RPD	8	%	20
V4D5848-BSD	98-82-8	Isopropylbenzene	BSD	REC	99	%	70-130
V4D5848-BSD	98-82-8	Isopropylbenzene	BSD	RPD	3	%	20
V4D5848-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	101	%	70-130
V4D5848-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	3	%	20
V4D5848-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	113	%	70-130
V4D5848-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	3	%	20
V4D5848-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	103	%	70-130
V4D5848-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	6	%	20
V4D5848-BSD	74-95-3	Methylene bromide	BSD	REC	104	%	70-130
V4D5848-BSD	74-95-3	Methylene bromide	BSD	RPD	2	%	20
V4D5848-BSD	75-09-2	Methylene chloride	BSD	REC	101	%	70-130
V4D5848-BSD	75-09-2	Methylene chloride	BSD	RPD	1	%	20
V4D5848-BSD	91-20-3	Naphthalene	BSD	REC	105	%	70-130
V4D5848-BSD	91-20-3	Naphthalene	BSD	RPD	5	%	20
V4D5848-BSD	103-65-1	n-Propylbenzene	BSD	REC	99	%	70-130
V4D5848-BSD	103-65-1	n-Propylbenzene	BSD	RPD	1	%	20
V4D5848-BSD	100-42-5	Styrene	BSD	REC	100	%	70-130
V4D5848-BSD	100-42-5	Styrene	BSD	RPD	3	%	20
V4D5848-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	104	%	70-130
V4D5848-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	3	%	20
V4D5848-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	111	%	70-130
V4D5848-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	2	%	20
V4D5848-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	100	%	70-130
V4D5848-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	3	%	20
V4D5848-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	98	%	70-130
V4D5848-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	4	%	20
V4D5848-BSD	127-18-4	Tetrachloroethene	BSD	REC	99	%	70-130
V4D5848-BSD	127-18-4	Tetrachloroethene	BSD	RPD	2	%	20
V4D5848-BSD	109-99-9	Tetrahydrofuran	BSD	REC	108	%	70-130
V4D5848-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	5	%	20
V4D5848-BSD	108-88-3	Toluene	BSD	REC	99	%	70-130
V4D5848-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V4D5848-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	104	%	70-130
V4D5848-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	4	%	25
V4D5848-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	106	%	70-130
V4D5848-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	2	%	20
V4D5848-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	115	%	70-130
V4D5848-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	2	%	20
V4D5848-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	99	%	70-130
V4D5848-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	4	%	20
V4D5848-BSD	79-01-6	Trichloroethene	BSD	REC	108	%	70-130
V4D5848-BSD	79-01-6	Trichloroethene	BSD	RPD	3	%	20
V4D5848-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	119	%	70-130

* Sample used for QC is not from job JD74811

QC Evaluation: MA MCP Limits

Job Number: JD74811
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/12/23 thru 10/13/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5848-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	1	%	20
V4D5848-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	106	%	70-130
V4D5848-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	5	%	20
V4D5848-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	100	%	70-130
V4D5848-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	2	%	20
V4D5848-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	99	%	70-130
V4D5848-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	2	%	20
V4D5848-BSD	75-01-4	Vinyl chloride	BSD	REC	115	%	70-130
V4D5848-BSD	75-01-4	Vinyl chloride	BSD	RPD	1	%	20
V4D5848-BSD		m,p-Xylene	BSD	REC	99	%	70-130
V4D5848-BSD		m,p-Xylene	BSD	RPD	3	%	20
V4D5848-BSD	95-47-6	o-Xylene	BSD	REC	99	%	70-130
V4D5848-BSD	95-47-6	o-Xylene	BSD	RPD	2	%	20
V4D5848-BSD	1330-20-7	Xylene (total)	BSD	REC	99	%	70-130
V4D5848-BSD	1330-20-7	Xylene (total)	BSD	RPD	3	%	20
V4D5848-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	112	%	70-130
V4D5848-BSD	2037-26-5	Toluene-D8	BSD	SURR	98	%	70-130
V4D5848-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	100	%	70-130
V4D5848-MB	1868-53-7	Dibromofluoromethane	MB	SURR	113	%	70-130
V4D5848-MB	2037-26-5	Toluene-D8	MB	SURR	101	%	70-130
V4D5848-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	101	%	70-130
JD74811-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	111	%	70-130
JD74811-1	2037-26-5	Toluene-D8	SAMP	SURR	101	%	70-130
JD74811-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	70-130
JD74811-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	110	%	70-130
JD74811-2	2037-26-5	Toluene-D8	SAMP	SURR	101	%	70-130
JD74811-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	101	%	70-130
JD74811-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	111	%	70-130
JD74811-3	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD74811-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	70-130
JD74811-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	111	%	70-130
JD74811-4	2037-26-5	Toluene-D8	SAMP	SURR	100	%	70-130
JD74811-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	70-130

(a) Outside of in house control limits, but within reasonable method recovery limits.

* Sample used for QC is not from job JD74811

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MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5848-MB	4D132088.D	1	10/17/23	NW	n/a	n/a	V4D5848

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-1, JD74811-2, JD74811-3, JD74811-4

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5848-MB	4D132088.D	1	10/17/23	NW	n/a	n/a	V4D5848

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-1, JD74811-2, JD74811-3, JD74811-4

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5848-MB	4D132088.D	1	10/17/23	NW	n/a	n/a	V4D5848

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-1, JD74811-2, JD74811-3, JD74811-4

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	113%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	80-120%
2037-26-5	Toluene-D8	101%	80-120%
460-00-4	4-Bromofluorobenzene	101%	82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	4.27	5.2	ug/l	J
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1R257-MB	1R07470.D	1	10/19/23	JN	n/a	n/a	V1R257

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-3

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	93%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	80-120%
2037-26-5	Toluene-D8	99%	80-120%
460-00-4	4-Bromofluorobenzene	96%	82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Blank Spike/Blank Spike Duplicate Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5848-BS	4D132085.D	1	10/17/23	NW	n/a	n/a	V4D5848
V4D5848-BSD	4D132086.D	1	10/17/23	NW	n/a	n/a	V4D5848

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-1, JD74811-2, JD74811-3, JD74811-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	306	153	320	160	4	27-175/31
71-43-2	Benzene	50	49.4	99	50.4	101	2	80-115/11
108-86-1	Bromobenzene	50	50.2	100	50.5	101	1	79-119/11
74-97-5	Bromochloromethane	50	55.0	110	56.2	112	2	83-122/10
75-27-4	Bromodichloromethane	50	50.2	100	50.8	102	1	82-119/12
75-25-2	Bromoform	50	47.2	94	49.5	99	5	77-135/11
74-83-9	Bromomethane	50	63.6	127	66.0	132	4	40-162/23
78-93-3	2-Butanone (MEK)	200	259	130	280	140	8	61-150/16
104-51-8	n-Butylbenzene	50	49.4	99	51.4	103	4	77-124/12
135-98-8	sec-Butylbenzene	50	48.7	97	50.1	100	3	75-121/12
98-06-6	tert-Butylbenzene	50	49.5	99	50.9	102	3	74-120/11
75-15-0	Carbon disulfide	50	57.1	114	57.2	114	0	64-130/13
56-23-5	Carbon tetrachloride	50	56.3	113	57.6	115	2	75-127/11
108-90-7	Chlorobenzene	50	48.7	97	50.0	100	3	80-115/10
75-00-3	Chloroethane	50	53.1	106	53.1	106	0	56-144/14
67-66-3	Chloroform	50	58.0	116	59.3	119* a	2	75-116/10
74-87-3	Chloromethane	50	52.9	106	51.6	103	2	41-153/14
95-49-8	o-Chlorotoluene	50	48.4	97	49.7	99	3	79-119/11
106-43-4	p-Chlorotoluene	50	46.9	94	48.0	96	2	77-117/11
108-20-3	Di-Isopropyl ether	50	53.6	107	54.4	109	1	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	48.8	98	53.4	107	9	69-134/11
124-48-1	Dibromochloromethane	50	48.2	96	49.8	100	3	81-123/11
106-93-4	1,2-Dibromoethane	50	48.2	96	50.2	100	4	67-138/11
95-50-1	1,2-Dichlorobenzene	50	49.3	99	50.5	101	2	81-117/10
541-73-1	1,3-Dichlorobenzene	50	48.8	98	49.7	99	2	81-115/10
106-46-7	1,4-Dichlorobenzene	50	49.4	99	50.8	102	3	80-114/10
75-71-8	Dichlorodifluoromethane	50	53.1	106	53.3	107	0	43-152/16
75-34-3	1,1-Dichloroethane	50	54.6	109	55.4	111	1	75-125/11
107-06-2	1,2-Dichloroethane	50	49.2	98	50.3	101	2	73-117/10
75-35-4	1,1-Dichloroethene	50	56.4	113	57.6	115	2	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	52.9	106	54.0	108	2	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	55.4	111	56.1	112	1	77-121/12
78-87-5	1,2-Dichloropropane	50	51.3	103	52.3	105	2	79-121/10
142-28-9	1,3-Dichloropropane	50	47.8	96	49.2	98	3	81-117/11
594-20-7	2,2-Dichloropropane	50	52.9	106	53.6	107	1	70-131/12
563-58-6	1,1-Dichloropropene	50	55.7	111	56.7	113	2	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5848-BS	4D132085.D	1	10/17/23	NW	n/a	n/a	V4D5848
V4D5848-BSD	4D132086.D	1	10/17/23	NW	n/a	n/a	V4D5848

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-1, JD74811-2, JD74811-3, JD74811-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	50.7	101	51.7	103	2	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	47.7	95	49.0	98	3	83-122/12
123-91-1	1,4-Dioxane	1250	1220	98	1200	96	2	64-150/20
60-29-7	Ethyl Ether	50	59.5	119	59.5	119	0	74-132/11
100-41-4	Ethylbenzene	50	48.0	96	49.4	99	3	78-116/10
87-68-3	Hexachlorobutadiene	50	54.7	109	55.5	111	1	55-136/14
591-78-6	2-Hexanone	200	204	102	220	110	8	66-136/14
98-82-8	Isopropylbenzene	50	48.1	96	49.5	99	3	78-121/11
99-87-6	p-Isopropyltoluene	50	49.0	98	50.4	101	3	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	54.8	110	56.4	113	3	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	193	97	205	103	6	73-134/13
74-95-3	Methylene bromide	50	50.6	101	51.8	104	2	82-117/10
75-09-2	Methylene chloride	50	50.3	101	50.7	101	1	73-123/11
91-20-3	Naphthalene	50	50.2	100	52.7	105	5	64-136/13
103-65-1	n-Propylbenzene	50	49.2	98	49.7	99	1	75-121/11
100-42-5	Styrene	50	48.4	97	49.8	100	3	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	50.3	101	51.8	104	3	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	54.5	109	55.4	111	2	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	48.7	97	50.2	100	3	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	47.4	95	49.1	98	4	73-126/12
127-18-4	Tetrachloroethene	50	48.4	97	49.6	99	2	73-119/12
109-99-9	Tetrahydrofuran	50	51.3	103	53.9	108	5	63-133/11
108-88-3	Toluene	50	48.3	97	49.4	99	2	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	49.8	100	51.8	104	4	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	52.3	105	53.2	106	2	68-135/12
71-55-6	1,1,1-Trichloroethane	50	56.1	112	57.5	115	2	76-124/11
79-00-5	1,1,2-Trichloroethane	50	47.7	95	49.5	99	4	83-117/11
79-01-6	Trichloroethene	50	52.5	105	53.9	108	3	80-118/11
75-69-4	Trichlorofluoromethane	50	59.0	118	59.7	119	1	67-134/13
96-18-4	1,2,3-Trichloropropane	50	50.2	100	52.9	106	5	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	48.9	98	49.9	100	2	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	48.4	97	49.5	99	2	77-120/11
75-01-4	Vinyl chloride	50	58.0	116	57.4	115	1	52-146/15
	m,p-Xylene	100	95.6	96	98.5	99	3	79-119/10
95-47-6	o-Xylene	50	48.5	97	49.7	99	2	81-119/10
1330-20-7	Xylene (total)	150	144	96	148	99	3	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5848-BS	4D132085.D	1	10/17/23	NW	n/a	n/a	V4D5848
V4D5848-BSD	4D132086.D	1	10/17/23	NW	n/a	n/a	V4D5848

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-1, JD74811-2, JD74811-3, JD74811-4

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	112%	112%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	101%	80-120%
2037-26-5	Toluene-D8	98%	98%	80-120%
460-00-4	4-Bromofluorobenzene	101%	100%	82-114%

(a) Outside of in house control limits, but within reasonable method recovery limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1R257-BS	1R07467.D	1	10/19/23	JN	n/a	n/a	V1R257
V1R257-BSD	1R07468.D	1	10/19/23	JN	n/a	n/a	V1R257

The QC reported here applies to the following samples:

Method: SW846 8260D

JD74811-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
79-01-6	Trichloroethene	50	58.4	117	57.5	115	2	80-118/11

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	86%	88%	80-120%
17060-07-0	1,2-Dichloroethane-D4	88%	89%	80-120%
2037-26-5	Toluene-D8	105%	103%	80-120%
460-00-4	4-Bromofluorobenzene	100%	103%	82-114%

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1R257-CC216	Injection Date:	10/19/23
Lab File ID:	1R07465.D	Injection Time:	13:33
Instrument ID:	GCMS1R	Method:	SW846 8260D

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	296313	3.39	346213	4.93	565512	5.56	472498	7.74	261746	9.20
Upper Limit ^a	592626	3.89	692426	5.43	1131024	6.06	944996	8.24	523492	9.70
Lower Limit ^b	148157	2.89	173107	4.43	282756	5.06	236249	7.24	130873	8.70

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
V1R257-BS	297195	3.39	349343	4.93	582651	5.56	478941	7.74	267482	9.20
V1R257-BSD	316268	3.39	342200	4.93	586725	5.56	486704	7.74	270302	9.20
V1R257-MB	233083	3.39	317359	4.93	479027	5.56	440085	7.74	254557	9.20
ZZZZZZ	234314	3.39	318417	4.93	483856	5.56	449308	7.74	255187	9.20
ZZZZZZ	256207	3.38	331436	4.93	518637	5.56	453527	7.74	262724	9.20
JD74811-3	239901	3.39	317426	4.93	490045	5.56	451319	7.74	259958	9.20
JD74991-1	256373	3.39	346240	4.93	523380	5.56	471041	7.74	263287	9.20
JD74991-1MS ^c	309854	3.39	345211	4.93	561098	5.56	483104	7.74	261880	9.20
JD74991-1MSD ^c	304139	3.39	345229	4.93	576230	5.56	483299	7.74	264498	9.20
ZZZZZZ	231739	3.39	314932	4.93	480085	5.56	443960	7.74	257520	9.20
ZZZZZZ	234342	3.39	310004	4.93	482772	5.56	442402	7.74	258073	9.20
ZZZZZZ	245046	3.39	320295	4.93	493338	5.56	453104	7.74	265659	9.20
ZZZZZZ	217520	3.39	308444	4.93	476582	5.56	432504	7.74	250089	9.20
ZZZZZZ	232211	3.39	305595	4.93	476901	5.56	431776	7.74	262461	9.20
ZZZZZZ	227925	3.38	312343	4.93	480194	5.56	441310	7.74	255108	9.20
ZZZZZZ	210200	3.39	312101	4.93	475956	5.56	424031	7.74	243074	9.20
ZZZZZZ	237053	3.39	322429	4.93	493156	5.56	450046	7.74	261948	9.20
ZZZZZZ	262987	3.39	343768	4.93	528476	5.56	476941	7.74	271639	9.20
ZZZZZZ	296886	3.38	349585	4.93	587953	5.56	485788	7.74	271409	9.20
ZZZZZZ	225430	3.38	340336	4.93	536834	5.55	469655	7.74	263560	9.20
ZZZZZZ	285844	3.38	351137	4.93	590562	5.55	491344	7.74	276033	9.20
ZZZZZZ	259508	3.38	343745	4.93	553367	5.55	475121	7.74	272211	9.20
ZZZZZZ	258186	3.38	339109	4.93	532075	5.55	476773	7.74	279062	9.20
ZZZZZZ	257457	3.38	325598	4.93	513432	5.55	448890	7.74	262896	9.20
V1R258-BS	338075	3.39	375558	4.93	629218	5.56	515008	7.74	274730	9.20

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
 (c) corr-#104, #105 same RT

Internal Standard Area Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V4D5848-CC5842	Injection Date: 10/17/23
Lab File ID: 4D132084.D	Injection Time: 13:26
Instrument ID: GCMS4D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	468267	8.82	386702	11.29	687488	12.21	569633	15.07	248845	17.19
Upper Limit ^a	936534	9.32	773404	11.79	1374976	12.71	1139266	15.57	497690	17.69
Lower Limit ^b	234134	8.32	193351	10.79	343744	11.71	284817	14.57	124423	16.69

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V4D5848-BS	427222	8.82	367530	11.29	656585	12.21	548868	15.07	238188	17.19
V4D5848-BSD	468742	8.83	367344	11.30	655763	12.21	545721	15.07	240099	17.19
V4D5848-MB	483073	8.82	429638	11.30	773358	12.21	637519	15.07	278727	17.19
JD74788-9	522479	8.82	420488	11.30	721539	12.21	624851	15.07	277100	17.19
ZZZZZZ	484493	8.82	381018	11.30	649036	12.21	577236	15.07	251617	17.19
JD74788-9MS	471558	8.83	362991	11.30	646021	12.21	543664	15.07	238915	17.19
JD74788-9MSD	442210	8.82	378746	11.30	670549	12.21	558976	15.07	240507	17.19
ZZZZZZ	487288	8.82	422994	11.30	740791	12.21	622795	15.07	274727	17.19
JD74811-1	494884	8.82	415601	11.30	743167	12.21	606443	15.07	265800	17.19
JD74811-3	499149	8.82	415137	11.30	744148	12.21	599942	15.07	266197	17.19
JD74811-4	471709	8.82	417151	11.30	745866	12.21	601064	15.07	266854	17.19
JD74811-2 ^c	447008	8.82	412444	11.30	730863	12.21	586418	15.07	257309	17.19
ZZZZZZ	487152	8.82	417134	11.30	737767	12.21	605783	15.07	266736	17.19
ZZZZZZ	505459	8.82	414203	11.30	733602	12.21	602942	15.07	268543	17.19
ZZZZZZ	474951	8.82	422610	11.30	743796	12.21	609681	15.07	265815	17.19
ZZZZZZ	495723	8.82	422456	11.30	740064	12.21	608518	15.07	268096	17.19
ZZZZZZ	485529	8.82	423202	11.30	743722	12.21	611357	15.07	264959	17.19
ZZZZZZ	499232	8.82	424334	11.30	743832	12.21	607082	15.07	268916	17.19
ZZZZZZ	442958	8.82	417682	11.30	731747	12.21	603705	15.07	257417	17.19
ZZZZZZ	472667	8.82	417397	11.30	731672	12.21	599140	15.07	260450	17.19
ZZZZZZ	494572	8.82	419459	11.30	736207	12.21	603050	15.07	265641	17.19
ZZZZZZ	492911	8.82	410449	11.30	718111	12.21	593525	15.07	265160	17.19
ZZZZZZ	486045	8.82	417068	11.30	731790	12.21	602983	15.07	260245	17.19

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
 (c) Dilution required due to high concentration of target compound.

Surrogate Recovery Summary

Job Number: JD74811
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD74811-1	4D132094.D	111	106	101	100
JD74811-2	4D132097.D	110	106	101	101
JD74811-3	1R07473.D	94	103	98	98
JD74811-3	4D132095.D	111	106	99	100
JD74811-4	4D132096.D	111	106	100	100
V1R257-BS	1R07467.D	86	88	105	100
V1R257-BSD	1R07468.D	88	89	103	103
V1R257-MB	1R07470.D	93	102	99	96
V4D5848-BS	4D132085.D	112	101	98	101
V4D5848-BSD	4D132086.D	112	101	98	100
V4D5848-MB	4D132088.D	113	106	101	101

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS109.A.CS.EV.01.M1

SGS Job Number: JD75483

Sampling Date: 10/24/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorette@jacobs.com; Bernice.Kidd@jacobs.com;
EDMData@jacobs.com
ATTN: Raymond J. Cadorette

Total number of pages in report: 32



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

A handwritten signature in blue ink, appearing to read 'D. Chastain'.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200
Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA(68-00408), RI, SC, TX, UT, VA, WV

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Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD75483

Varian, Beverly, MA

Project No: VARMS109.A.CS.EV.01.M1

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:

Organics ND = Not detected above the RL

JD75483-1 10/24/23 10:45 DK 10/25/23 AQ Water

VAR_STRM_PIPE_20231024

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD75483

Site: Varian, Beverly, MA

Report Date 11/3/2023 8:28:20 AM

On 10/25/2023, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 1 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD75483 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ

Batch ID: V4D5857

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ

Batch ID: V4D5860

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD75483-1 for Bromomethane: This compound is outside the MCP limits in the associated BSD biased high.
- JD75483-1 for Acetone: This compound is outside the MCP limits in the associated BS/BSD biased high.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Friday, November 3, 2023

Page 1 of 1

Summary of Hits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD75483-1 VAR_STRM_PIPE_20231024

1,1-Dichloroethane	2.1	1.0			ug/l	SW846 8260D
1,1-Dichloroethene	3.2	1.0			ug/l	SW846 8260D
cis-1,2-Dichloroethene	340	4.0			ug/l	SW846 8260D
trans-1,2-Dichloroethene	2.0	1.0			ug/l	SW846 8260D
Tetrachloroethene	115	1.0			ug/l	SW846 8260D
Trichloroethene	391	4.0			ug/l	SW846 8260D
Vinyl chloride	4.3	1.0			ug/l	SW846 8260D

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	VAR_STRM_PIPE_20231024	Date Sampled:	10/24/23
Lab Sample ID:	JD75483-1	Date Received:	10/25/23
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4D132385.D	1	10/31/23 11:49	NW	n/a	n/a	V4D5860
Run #2	4D132315.D	4	10/27/23 17:33	NW	n/a	n/a	V4D5857

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	2.1	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	3.2	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	340 ^c	4.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	2.0	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	VAR_STRM_PIPE_20231024	Date Sampled:	10/24/23
Lab Sample ID:	JD75483-1	Date Received:	10/25/23
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	115	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	391 ^c	4.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	4.3	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: VAR_STRM_PIPE_20231024	Date Sampled: 10/24/23
Lab Sample ID: JD75483-1	Date Received: 10/25/23
Matrix: AQ - Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	106%	80-120%
17060-07-0	1,2-Dichloroethane-D4	88%	102%	80-120%
2037-26-5	Toluene-D8	96%	98%	80-120%
460-00-4	4-Bromofluorobenzene	93%	100%	82-114%

- (a) This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits

SGS Sample Receipt Summary

Job Number: JD75483

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 10/25/2023 9:14:00 PM

Delivery Method: SGS

Airbill #s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.3);

Cooler Temps (Corrected) °C: Cooler 1: (1.0);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smp'l Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>IR Gun 40</u> | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: <u>231619</u>	pH 12+: <u>203117A</u>	Other: (Specify) _____
--------------------	------------------------	------------------------	------------------------

Comments

SM089-03
Rev. Date 12/7/17

JD75483: Chain of Custody

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Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM
July 1, 2010
Final

Exhibit VII A
Revision No. 1

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD75483
Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD75483-1

Matrices: Groundwater/Surface Water () Soil/Sediment () Drinking Water () Air () Other (X)

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

¹ All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 03-Nov-23

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Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD75483

Varian, Beverly, MA

Project No: VARMS109.A.CS.EV.01.M1

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD75483-1 Collected: 24-OCT-23 10:45 By: DK Received: 25-OCT-23 By: KG VAR_STRM_PIPE_20231024						
JD75483-1	SW846 8260D	27-OCT-23 17:33	NW			V8260MCP
JD75483-1	SW846 8260D	31-OCT-23 11:49	NW			V8260MCP

QC Evaluation: MA MCP Limits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5857		SW846 8260D					
V4D5857-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	100	%	70-130
V4D5857-BS	79-01-6	Trichloroethene	BSP	REC	98	%	70-130
V4D5857-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	106	%	70-130
V4D5857-BS	2037-26-5	Toluene-D8	BSP	SURR	96	%	70-130
V4D5857-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	100	%	70-130
V4D5857-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	102	%	70-130
V4D5857-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	1	%	20
V4D5857-BSD	79-01-6	Trichloroethene	BSD	REC	102	%	70-130
V4D5857-BSD	79-01-6	Trichloroethene	BSD	RPD	3	%	20
V4D5857-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	101	%	70-130
V4D5857-BSD	2037-26-5	Toluene-D8	BSD	SURR	96	%	70-130
V4D5857-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	96	%	70-130
V4D5857-MB	1868-53-7	Dibromofluoromethane	MB	SURR	101	%	70-130
V4D5857-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V4D5857-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	97	%	70-130
JD75483-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	70-130
JD75483-1	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD75483-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	70-130
V4D5860		SW846 8260D					
V4D5860-BS	67-64-1	Acetone	BSP	REC	133	%	70-130
V4D5860-BS	71-43-2	Benzene	BSP	REC	95	%	70-130
V4D5860-BS	108-86-1	Bromobenzene	BSP	REC	93	%	70-130
V4D5860-BS	74-97-5	Bromochloromethane	BSP	REC	104	%	70-130
V4D5860-BS	75-27-4	Bromodichloromethane	BSP	REC	89	%	70-130
V4D5860-BS	75-25-2	Bromoform	BSP	REC	92	%	70-130
V4D5860-BS	74-83-9	Bromomethane	BSP	REC	125	%	70-130
V4D5860-BS	78-93-3	2-Butanone (MEK)	BSP	REC	118	%	70-130
V4D5860-BS	104-51-8	n-Butylbenzene	BSP	REC	86	%	70-130
V4D5860-BS	135-98-8	sec-Butylbenzene	BSP	REC	86	%	70-130
V4D5860-BS	98-06-6	tert-Butylbenzene	BSP	REC	90	%	70-130
V4D5860-BS	75-15-0	Carbon disulfide	BSP	REC	108	%	70-130
V4D5860-BS	56-23-5	Carbon tetrachloride	BSP	REC	99	%	70-130
V4D5860-BS	108-90-7	Chlorobenzene	BSP	REC	92	%	70-130
V4D5860-BS	75-00-3	Chloroethane	BSP	REC	106	%	70-130
V4D5860-BS	67-66-3	Chloroform	BSP	REC	101	%	70-130
V4D5860-BS	74-87-3	Chloromethane	BSP	REC	93	%	70-130
V4D5860-BS	95-49-8	o-Chlorotoluene	BSP	REC	87	%	70-130
V4D5860-BS	106-43-4	p-Chlorotoluene	BSP	REC	82	%	70-130
V4D5860-BS	108-20-3	Di-Isopropyl ether	BSP	REC	89	%	70-130
V4D5860-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	93	%	70-130

* Sample used for QC is not from job JD75483

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QC Evaluation: MA MCP Limits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5860-BS	124-48-1	Dibromochloromethane	BSP	REC	91	%	70-130
V4D5860-BS	106-93-4	1,2-Dibromoethane	BSP	REC	91	%	70-130
V4D5860-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	91	%	70-130
V4D5860-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V4D5860-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	91	%	70-130
V4D5860-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	101	%	70-130
V4D5860-BS	75-34-3	1,1-Dichloroethane	BSP	REC	96	%	70-130
V4D5860-BS	107-06-2	1,2-Dichloroethane	BSP	REC	82	%	70-130
V4D5860-BS	75-35-4	1,1-Dichloroethene	BSP	REC	109	%	70-130
V4D5860-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	106	%	70-130
V4D5860-BS	78-87-5	1,2-Dichloropropane	BSP	REC	91	%	70-130
V4D5860-BS	142-28-9	1,3-Dichloropropane	BSP	REC	86	%	70-130
V4D5860-BS	594-20-7	2,2-Dichloropropane	BSP	REC	94	%	70-130
V4D5860-BS	563-58-6	1,1-Dichloropropene	BSP	REC	98	%	70-130
V4D5860-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	91	%	70-130
V4D5860-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	85	%	70-130
V4D5860-BS	123-91-1	1,4-Dioxane	BSP	REC	89	%	70-130
V4D5860-BS	60-29-7	Ethyl Ether	BSP	REC	112	%	70-130
V4D5860-BS	100-41-4	Ethylbenzene	BSP	REC	88	%	70-130
V4D5860-BS	87-68-3	Hexachlorobutadiene	BSP	REC	105	%	70-130
V4D5860-BS	591-78-6	2-Hexanone	BSP	REC	87	%	70-130
V4D5860-BS	98-82-8	Isopropylbenzene	BSP	REC	89	%	70-130
V4D5860-BS	99-87-6	p-Isopropyltoluene	BSP	REC	88	%	70-130
V4D5860-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	100	%	70-130
V4D5860-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	86	%	70-130
V4D5860-BS	74-95-3	Methylene bromide	BSP	REC	93	%	70-130
V4D5860-BS	75-09-2	Methylene chloride	BSP	REC	96	%	70-130
V4D5860-BS	91-20-3	Naphthalene	BSP	REC	91	%	70-130
V4D5860-BS	103-65-1	n-Propylbenzene	BSP	REC	84	%	70-130
V4D5860-BS	100-42-5	Styrene	BSP	REC	89	%	70-130
V4D5860-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	95	%	70-130
V4D5860-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	96	%	70-130
V4D5860-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	92	%	70-130
V4D5860-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	85	%	70-130
V4D5860-BS	127-18-4	Tetrachloroethene	BSP	REC	95	%	70-130
V4D5860-BS	109-99-9	Tetrahydrofuran	BSP	REC	99	%	70-130
V4D5860-BS	108-88-3	Toluene	BSP	REC	90	%	70-130
V4D5860-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	93	%	70-130
V4D5860-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	98	%	70-130
V4D5860-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	97	%	70-130
V4D5860-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	87	%	70-130
V4D5860-BS	75-69-4	Trichlorofluoromethane	BSP	REC	108	%	70-130
V4D5860-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	88	%	70-130
V4D5860-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	87	%	70-130
V4D5860-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	86	%	70-130

* Sample used for QC is not from job JD75483

5.4
5

QC Evaluation: MA MCP Limits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5860-BS	75-01-4	Vinyl chloride	BSP	REC	101	%	70-130
V4D5860-BS		m,p-Xylene	BSP	REC	89	%	70-130
V4D5860-BS	95-47-6	o-Xylene	BSP	REC	89	%	70-130
V4D5860-BS	1330-20-7	Xylene (total)	BSP	REC	89	%	70-130
V4D5860-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	103	%	70-130
V4D5860-BS	2037-26-5	Toluene-D8	BSP	SURR	95	%	70-130
V4D5860-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	92	%	70-130
V4D5860-BSD	67-64-1	Acetone	BSD	REC	135	%	70-130
V4D5860-BSD	67-64-1	Acetone	BSD	RPD	1	%	20
V4D5860-BSD	71-43-2	Benzene	BSD	REC	98	%	70-130
V4D5860-BSD	71-43-2	Benzene	BSD	RPD	3	%	20
V4D5860-BSD	108-86-1	Bromobenzene	BSD	REC	98	%	70-130
V4D5860-BSD	108-86-1	Bromobenzene	BSD	RPD	6	%	20
V4D5860-BSD	74-97-5	Bromochloromethane	BSD	REC	108	%	70-130
V4D5860-BSD	74-97-5	Bromochloromethane	BSD	RPD	3	%	20
V4D5860-BSD	75-27-4	Bromodichloromethane	BSD	REC	93	%	70-130
V4D5860-BSD	75-27-4	Bromodichloromethane	BSD	RPD	4	%	20
V4D5860-BSD	75-25-2	Bromoform	BSD	REC	95	%	70-130
V4D5860-BSD	75-25-2	Bromoform	BSD	RPD	3	%	20
V4D5860-BSD	74-83-9	Bromomethane	BSD	REC	136	%	70-130
V4D5860-BSD	74-83-9	Bromomethane	BSD	RPD	9	%	20
V4D5860-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	120	%	70-130
V4D5860-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	1	%	20
V4D5860-BSD	104-51-8	n-Butylbenzene	BSD	REC	91	%	70-130
V4D5860-BSD	104-51-8	n-Butylbenzene	BSD	RPD	6	%	20
V4D5860-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V4D5860-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	7	%	20
V4D5860-BSD	98-06-6	tert-Butylbenzene	BSD	REC	97	%	70-130
V4D5860-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	8	%	20
V4D5860-BSD	75-15-0	Carbon disulfide	BSD	REC	111	%	70-130
V4D5860-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V4D5860-BSD	56-23-5	Carbon tetrachloride	BSD	REC	103	%	70-130
V4D5860-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	4	%	20
V4D5860-BSD	108-90-7	Chlorobenzene	BSD	REC	95	%	70-130
V4D5860-BSD	108-90-7	Chlorobenzene	BSD	RPD	4	%	20
V4D5860-BSD	75-00-3	Chloroethane	BSD	REC	106	%	70-130
V4D5860-BSD	75-00-3	Chloroethane	BSD	RPD	0	%	20
V4D5860-BSD	67-66-3	Chloroform	BSD	REC	106	%	70-130
V4D5860-BSD	67-66-3	Chloroform	BSD	RPD	5	%	20
V4D5860-BSD	74-87-3	Chloromethane	BSD	REC	92	%	70-130
V4D5860-BSD	74-87-3	Chloromethane	BSD	RPD	1	%	20
V4D5860-BSD	95-49-8	o-Chlorotoluene	BSD	REC	93	%	70-130
V4D5860-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	6	%	20
V4D5860-BSD	106-43-4	p-Chlorotoluene	BSD	REC	87	%	70-130
V4D5860-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	6	%	20

* Sample used for QC is not from job JD75483

5.4
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QC Evaluation: MA MCP Limits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5860-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	91	%	70-130
V4D5860-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	2	%	20
V4D5860-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	97	%	70-130
V4D5860-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	4	%	20
V4D5860-BSD	124-48-1	Dibromochloromethane	BSD	REC	95	%	70-130
V4D5860-BSD	124-48-1	Dibromochloromethane	BSD	RPD	4	%	20
V4D5860-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	94	%	70-130
V4D5860-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	3	%	20
V4D5860-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	96	%	70-130
V4D5860-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	6	%	20
V4D5860-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	95	%	70-130
V4D5860-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	5	%	20
V4D5860-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	96	%	70-130
V4D5860-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	5	%	20
V4D5860-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	101	%	70-130
V4D5860-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	0	%	20
V4D5860-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	99	%	70-130
V4D5860-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V4D5860-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	84	%	70-130
V4D5860-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	3	%	20
V4D5860-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	112	%	70-130
V4D5860-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	3	%	20
V4D5860-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	109	%	70-130
V4D5860-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	3	%	20
V4D5860-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	94	%	70-130
V4D5860-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	4	%	20
V4D5860-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	89	%	70-130
V4D5860-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V4D5860-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	97	%	70-130
V4D5860-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	3	%	20
V4D5860-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	103	%	70-130
V4D5860-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	5	%	20
V4D5860-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	95	%	70-130
V4D5860-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	3	%	20
V4D5860-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	88	%	70-130
V4D5860-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	4	%	20
V4D5860-BSD	123-91-1	1,4-Dioxane	BSD	REC	96	%	70-130
V4D5860-BSD	123-91-1	1,4-Dioxane	BSD	RPD	8	%	20
V4D5860-BSD	60-29-7	Ethyl Ether	BSD	REC	115	%	70-130
V4D5860-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V4D5860-BSD	100-41-4	Ethylbenzene	BSD	REC	92	%	70-130
V4D5860-BSD	100-41-4	Ethylbenzene	BSD	RPD	5	%	20
V4D5860-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	114	%	70-130
V4D5860-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	8	%	20
V4D5860-BSD	591-78-6	2-Hexanone	BSD	REC	88	%	70-130

* Sample used for QC is not from job JD75483

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QC Evaluation: MA MCP Limits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5860-BSD	591-78-6	2-Hexanone	BSD	RPD	2	%	20
V4D5860-BSD	98-82-8	Isopropylbenzene	BSD	REC	94	%	70-130
V4D5860-BSD	98-82-8	Isopropylbenzene	BSD	RPD	5	%	20
V4D5860-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	94	%	70-130
V4D5860-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	7	%	20
V4D5860-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	103	%	70-130
V4D5860-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	3	%	20
V4D5860-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	87	%	70-130
V4D5860-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	1	%	20
V4D5860-BSD	74-95-3	Methylene bromide	BSD	REC	95	%	70-130
V4D5860-BSD	74-95-3	Methylene bromide	BSD	RPD	2	%	20
V4D5860-BSD	75-09-2	Methylene chloride	BSD	REC	98	%	70-130
V4D5860-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V4D5860-BSD	91-20-3	Naphthalene	BSD	REC	94	%	70-130
V4D5860-BSD	91-20-3	Naphthalene	BSD	RPD	3	%	20
V4D5860-BSD	103-65-1	n-Propylbenzene	BSD	REC	90	%	70-130
V4D5860-BSD	103-65-1	n-Propylbenzene	BSD	RPD	7	%	20
V4D5860-BSD	100-42-5	Styrene	BSD	REC	94	%	70-130
V4D5860-BSD	100-42-5	Styrene	BSD	RPD	5	%	20
V4D5860-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	98	%	70-130
V4D5860-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	3	%	20
V4D5860-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	99	%	70-130
V4D5860-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	3	%	20
V4D5860-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	97	%	70-130
V4D5860-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	5	%	20
V4D5860-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	88	%	70-130
V4D5860-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	4	%	20
V4D5860-BSD	127-18-4	Tetrachloroethene	BSD	REC	100	%	70-130
V4D5860-BSD	127-18-4	Tetrachloroethene	BSD	RPD	5	%	20
V4D5860-BSD	109-99-9	Tetrahydrofuran	BSD	REC	94	%	70-130
V4D5860-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	5	%	20
V4D5860-BSD	108-88-3	Toluene	BSD	REC	95	%	70-130
V4D5860-BSD	108-88-3	Toluene	BSD	RPD	5	%	20
V4D5860-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	98	%	70-130
V4D5860-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	5	%	25
V4D5860-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	102	%	70-130
V4D5860-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	5	%	20
V4D5860-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	101	%	70-130
V4D5860-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	5	%	20
V4D5860-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	90	%	70-130
V4D5860-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	4	%	20
V4D5860-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	110	%	70-130
V4D5860-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	2	%	20
V4D5860-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	93	%	70-130
V4D5860-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	5	%	20

* Sample used for QC is not from job JD75483

5.4
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QC Evaluation: MA MCP Limits

Job Number: JD75483
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 10/24/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5860-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	92	%	70-130
V4D5860-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	6	%	20
V4D5860-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	92	%	70-130
V4D5860-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	6	%	20
V4D5860-BSD	75-01-4	Vinyl chloride	BSD	REC	102	%	70-130
V4D5860-BSD	75-01-4	Vinyl chloride	BSD	RPD	1	%	20
V4D5860-BSD		m,p-Xylene	BSD	REC	94	%	70-130
V4D5860-BSD		m,p-Xylene	BSD	RPD	5	%	20
V4D5860-BSD	95-47-6	o-Xylene	BSD	REC	94	%	70-130
V4D5860-BSD	95-47-6	o-Xylene	BSD	RPD	5	%	20
V4D5860-BSD	1330-20-7	Xylene (total)	BSD	REC	94	%	70-130
V4D5860-BSD	1330-20-7	Xylene (total)	BSD	RPD	5	%	20
V4D5860-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	103	%	70-130
V4D5860-BSD	2037-26-5	Toluene-D8	BSD	SURR	95	%	70-130
V4D5860-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	94	%	70-130
V4D5860-MB	1868-53-7	Dibromofluoromethane	MB	SURR	102	%	70-130
V4D5860-MB	2037-26-5	Toluene-D8	MB	SURR	97	%	70-130
V4D5860-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	94	%	70-130
JD75483-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD75483-1	2037-26-5	Toluene-D8	SAMP	SURR	96	%	70-130
JD75483-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	93	%	70-130

* Sample used for QC is not from job JD75483

5.4
5

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5857-MB	4D132302.D	1	10/27/23	NW	n/a	n/a	V4D5857

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Compound	Result	RL	Units	Q
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	101% 80-120%
17060-07-0	1,2-Dichloroethane-D4	94% 80-120%
2037-26-5	Toluene-D8	100% 80-120%
460-00-4	4-Bromofluorobenzene	97% 82-114%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact	4.27	6.6	ug/l	J
	Total TIC, Volatile		0	ug/l	

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Method Blank Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5860-MB	4D132384.D	1	10/31/23	NW	n/a	n/a	V4D5860

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5860-MB	4D132384.D	1	10/31/23	NW	n/a	n/a	V4D5860

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Compound	Result	RL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethylbenzene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5860-MB	4D132384.D	1	10/31/23	NW	n/a	n/a	V4D5860

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	102% 80-120%
17060-07-0	1,2-Dichloroethane-D4	88% 80-120%
2037-26-5	Toluene-D8	97% 80-120%
460-00-4	4-Bromofluorobenzene	94% 82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	System artifact	4.27	6.5	ug/l	J
	Total TIC, Volatile		0	ug/l	

6.12
6

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5857-BS	4D132299.D	1	10/27/23	NW	n/a	n/a	V4D5857
V4D5857-BSD	4D132300.D	1	10/27/23	NW	n/a	n/a	V4D5857

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
156-59-2	cis-1,2-Dichloroethene	50	50.1	100	50.8	102	1	80-120/10
79-01-6	Trichloroethene	50	49.2	98	50.8	102	3	80-118/11

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	89%	80-120%
2037-26-5	Toluene-D8	96%	96%	80-120%
460-00-4	4-Bromofluorobenzene	100%	96%	82-114%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5860-BS	4D132381.D	1	10/31/23	NW	n/a	n/a	V4D5860
V4D5860-BSD	4D132382.D	1	10/31/23	NW	n/a	n/a	V4D5860

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	266	133	269	135	1	27-175/31
71-43-2	Benzene	50	47.6	95	48.9	98	3	80-115/11
108-86-1	Bromobenzene	50	46.3	93	49.0	98	6	79-119/11
74-97-5	Bromochloromethane	50	52.0	104	53.8	108	3	83-122/10
75-27-4	Bromodichloromethane	50	44.7	89	46.5	93	4	82-119/12
75-25-2	Bromoform	50	46.2	92	47.7	95	3	77-135/11
74-83-9	Bromomethane	50	62.4	125	68.0	136	9	40-162/23
78-93-3	2-Butanone (MEK)	200	236	118	239	120	1	61-150/16
104-51-8	n-Butylbenzene	50	43.1	86	45.6	91	6	77-124/12
135-98-8	sec-Butylbenzene	50	43.0	86	46.0	92	7	75-121/12
98-06-6	tert-Butylbenzene	50	44.8	90	48.5	97	8	74-120/11
75-15-0	Carbon disulfide	50	54.1	108	55.3	111	2	64-130/13
56-23-5	Carbon tetrachloride	50	49.3	99	51.3	103	4	75-127/11
108-90-7	Chlorobenzene	50	46.0	92	47.7	95	4	80-115/10
75-00-3	Chloroethane	50	52.9	106	53.0	106	0	56-144/14
67-66-3	Chloroform	50	50.5	101	53.1	106	5	75-116/10
74-87-3	Chloromethane	50	46.4	93	45.8	92	1	41-153/14
95-49-8	o-Chlorotoluene	50	43.6	87	46.3	93	6	79-119/11
106-43-4	p-Chlorotoluene	50	41.0	82	43.4	87	6	77-117/11
108-20-3	Di-Isopropyl ether	50	44.5	89	45.6	91	2	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	46.4	93	48.4	97	4	69-134/11
124-48-1	Dibromochloromethane	50	45.5	91	47.5	95	4	81-123/11
106-93-4	1,2-Dibromoethane	50	45.3	91	46.9	94	3	67-138/11
95-50-1	1,2-Dichlorobenzene	50	45.3	91	48.1	96	6	81-117/10
541-73-1	1,3-Dichlorobenzene	50	45.0	90	47.4	95	5	81-115/10
106-46-7	1,4-Dichlorobenzene	50	45.7	91	48.2	96	5	80-114/10
75-71-8	Dichlorodifluoromethane	50	50.3	101	50.3	101	0	43-152/16
75-34-3	1,1-Dichloroethane	50	48.2	96	49.7	99	3	75-125/11
107-06-2	1,2-Dichloroethane	50	41.0	82	42.1	84	3	73-117/10
75-35-4	1,1-Dichloroethene	50	54.5	109	55.9	112	3	70-124/12
156-60-5	trans-1,2-Dichloroethene	50	53.1	106	54.7	109	3	77-121/12
78-87-5	1,2-Dichloropropane	50	45.4	91	47.2	94	4	79-121/10
142-28-9	1,3-Dichloropropane	50	42.9	86	44.4	89	3	81-117/11
594-20-7	2,2-Dichloropropane	50	47.1	94	48.7	97	3	70-131/12
563-58-6	1,1-Dichloropropene	50	48.9	98	51.3	103	5	77-122/10
10061-01-5	cis-1,3-Dichloropropene	50	45.7	91	47.3	95	3	83-123/11

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5860-BS	4D132381.D	1	10/31/23	NW	n/a	n/a	V4D5860
V4D5860-BSD	4D132382.D	1	10/31/23	NW	n/a	n/a	V4D5860

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	50	42.4	85	44.0	88	4	83-122/12
123-91-1	1,4-Dioxane	1250	1110	89	1200	96	8	64-150/20
60-29-7	Ethyl Ether	50	56.2	112	57.5	115	2	74-132/11
100-41-4	Ethylbenzene	50	43.9	88	46.0	92	5	78-116/10
87-68-3	Hexachlorobutadiene	50	52.6	105	56.9	114	8	55-136/14
591-78-6	2-Hexanone	200	173	87	176	88	2	66-136/14
98-82-8	Isopropylbenzene	50	44.5	89	46.8	94	5	78-121/11
99-87-6	p-Isopropyltoluene	50	44.1	88	47.2	94	7	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	49.9	100	51.4	103	3	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	172	86	174	87	1	73-134/13
74-95-3	Methylene bromide	50	46.6	93	47.5	95	2	82-117/10
75-09-2	Methylene chloride	50	47.9	96	49.1	98	2	73-123/11
91-20-3	Naphthalene	50	45.6	91	47.2	94	3	64-136/13
103-65-1	n-Propylbenzene	50	42.1	84	45.1	90	7	75-121/11
100-42-5	Styrene	50	44.7	89	46.9	94	5	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	47.5	95	49.1	98	3	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	48.2	96	49.6	99	3	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	46.0	92	48.3	97	5	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	42.3	85	44.2	88	4	73-126/12
127-18-4	Tetrachloroethene	50	47.5	95	49.9	100	5	73-119/12
109-99-9	Tetrahydrofuran	50	49.6	99	47.0	94	5	63-133/11
108-88-3	Toluene	50	45.1	90	47.4	95	5	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	46.5	93	49.0	98	5	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	48.9	98	51.2	102	5	68-135/12
71-55-6	1,1,1-Trichloroethane	50	48.3	97	50.7	101	5	76-124/11
79-00-5	1,1,2-Trichloroethane	50	43.4	87	45.0	90	4	83-117/11
75-69-4	Trichlorofluoromethane	50	54.2	108	55.2	110	2	67-134/13
96-18-4	1,2,3-Trichloropropane	50	44.2	88	46.5	93	5	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	43.5	87	46.0	92	6	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	43.2	86	45.9	92	6	77-120/11
75-01-4	Vinyl chloride	50	50.5	101	51.0	102	1	52-146/15
	m,p-Xylene	100	89.4	89	93.7	94	5	79-119/10
95-47-6	o-Xylene	50	44.7	89	47.0	94	5	81-119/10
1330-20-7	Xylene (total)	150	134	89	141	94	5	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5860-BS	4D132381.D	1	10/31/23	NW	n/a	n/a	V4D5860
V4D5860-BSD	4D132382.D	1	10/31/23	NW	n/a	n/a	V4D5860

The QC reported here applies to the following samples:

Method: SW846 8260D

JD75483-1

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	103%	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	86%	84%	80-120%
2037-26-5	Toluene-D8	95%	95%	80-120%
460-00-4	4-Bromofluorobenzene	92%	94%	82-114%

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V4D5857-CC5842	Injection Date: 10/27/23
Lab File ID: 4D132298.D	Injection Time: 09:19
Instrument ID: GCMS4D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	507343	8.82	405368	11.30	698736	12.21	586292	15.07	262485	17.19
Upper Limit ^a	1014686	9.32	810736	11.80	1397472	12.71	1172584	15.57	524970	17.69
Lower Limit ^b	253672	8.32	202684	10.80	349368	11.71	293146	14.57	131243	16.69

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V4D5857-BS	479902	8.82	401281	11.29	698346	12.21	589320	15.07	258770	17.19
V4D5857-BSD	439007	8.82	376198	11.30	634609	12.21	520930	15.07	232388	17.19
V4D5857-MB	462162	8.81	452192	11.30	755989	12.21	600485	15.07	263505	17.19
ZZZZZZ	513865	8.82	455697	11.30	764762	12.21	619234	15.07	276139	17.19
ZZZZZZ	558005	8.82	448085	11.30	774965	12.21	652207	15.07	276473	17.19
ZZZZZZ	546441	8.82	467920	11.30	815089	12.21	675889	15.07	299292	17.19
ZZZZZZ	531305	8.82	468891	11.30	817885	12.21	680536	15.07	298841	17.19
ZZZZZZ	547598	8.82	458063	11.30	791927	12.21	664194	15.07	296470	17.19
JD75506-1	499010	8.82	435950	11.30	763611	12.21	652515	15.07	272642	17.19
ZZZZZZ	586465	8.82	442504	11.30	755357	12.21	659513	15.07	276774	17.19
JD75506-1MS	522211	8.83	403846	11.30	710258	12.21	607285	15.07	263579	17.19
JD75506-1MSD	551300	8.83	414564	11.30	726855	12.21	618908	15.07	270654	17.19
ZZZZZZ	525121	8.82	466492	11.30	803473	12.21	673359	15.07	294442	17.19
JD75483-1	504929	8.82	457632	11.30	798247	12.21	664527	15.07	293965	17.19
ZZZZZZ	533496	8.82	448568	11.30	756112	12.21	612678	15.07	275961	17.19
ZZZZZZ	543278	8.82	456300	11.30	789943	12.21	664686	15.07	293711	17.19
ZZZZZZ	538383	8.82	432758	11.30	748780	12.21	641206	15.07	284175	17.19
ZZZZZZ	546401	8.82	452509	11.30	784762	12.21	664029	15.07	295643	17.19
ZZZZZZ	552120	8.82	460646	11.30	798491	12.21	669351	15.07	294774	17.19
ZZZZZZ	549703	8.82	455461	11.30	787892	12.21	664796	15.07	296421	17.19

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.3.1
6

Internal Standard Area Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V4D5860-CC5842	Injection Date: 10/31/23
Lab File ID: 4D132380.D	Injection Time: 09:14
Instrument ID: GCMS4D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	412520	8.81	356831	11.29	598560	12.21	487255	15.07	216722	17.19
Upper Limit ^a	825040	9.31	713662	11.79	1197120	12.71	974510	15.57	433444	17.69
Lower Limit ^b	206260	8.31	178416	10.79	299280	11.71	243628	14.57	108361	16.69

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V4D5860-BS	405806	8.82	329651	11.29	560913	12.20	468621	15.07	214221	17.19
V4D5860-BSD	375279	8.82	327628	11.30	561577	12.21	464947	15.07	208669	17.19
V4D5860-MB	427840	8.82	388296	11.30	663184	12.21	535723	15.07	239692	17.19
JD75483-1	443765	8.82	370914	11.30	645386	12.21	518164	15.07	237333	17.19
JD75665-1	435139	8.82	392380	11.30	662726	12.21	525736	15.07	238606	17.19
JD75669-1	473298	8.82	404552	11.30	678352	12.21	539957	15.07	243274	17.19
ZZZZZZ	440092	8.82	375963	11.30	644281	12.21	532039	15.07	245678	17.19
ZZZZZZ	444394	8.82	394127	11.30	662823	12.21	534364	15.07	242728	17.19
ZZZZZZ	445112	8.82	380885	11.30	650945	12.21	531226	15.07	239281	17.19
JD75665-1MS	400707	8.82	340094	11.30	574939	12.21	476753	15.07	215789	17.19
JD75665-1MSD	431847	8.83	340697	11.30	577624	12.21	481763	15.07	221895	17.19
ZZZZZZ	427438	8.82	388557	11.30	652419	12.21	530332	15.07	239072	17.19
ZZZZZZ	467903	8.82	393361	11.30	656933	12.21	538331	15.07	247210	17.19
ZZZZZZ	473424	8.81	403500	11.30	674125	12.21	548875	15.07	247617	17.19
ZZZZZZ	440648	8.82	393285	11.30	659117	12.21	539494	15.07	243125	17.19
ZZZZZZ	427940	8.81	394878	11.30	659741	12.21	530613	15.07	240165	17.19
ZZZZZZ	483632	8.82	398830	11.30	664923	12.21	541861	15.07	248590	17.19
ZZZZZZ	466583	8.81	396239	11.30	657910	12.21	530853	15.07	243191	17.19
JD75669-1	439895	8.82	389815	11.30	652217	12.21	522027	15.07	237666	17.19
ZZZZZZ	419734	8.82	377540	11.30	635180	12.21	522029	15.07	233363	17.19
ZZZZZZ	446171	8.82	398369	11.30	658578	12.21	536176	15.07	237558	17.19
ZZZZZZ	474212	8.81	394100	11.30	654884	12.21	529924	15.07	240374	17.19
ZZZZZZ	434809	8.82	391072	11.30	645705	12.21	522734	15.07	235459	17.19

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.3.2
6

Surrogate Recovery Summary

Job Number: JD75483
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD75483-1	4D132315.D	106	102	98	100
JD75483-1	4D132385.D	103	88	96	93
V4D5857-BS	4D132299.D	106	97	96	100
V4D5857-BSD	4D132300.D	101	89	96	96
V4D5857-MB	4D132302.D	101	94	100	97
V4D5860-BS	4D132381.D	103	86	95	92
V4D5860-BSD	4D132382.D	103	84	95	94
V4D5860-MB	4D132384.D	102	88	97	94

Surrogate Compounds	Recovery Limits
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S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

6.4.1
6

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS107.A.CS.EV.2.23

SGS Job Number: JD78052

Sampling Dates: 12/01/23 - 12/04/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorett@jacobs.com; Bernice.Kidd@jacobs.com;
EDMData@jacobs.com
ATTN: Raymond J. Cadorette

Total number of pages in report: **127**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129),NY(10983),CA,CO,CT,FL,HI,IL,IN,KY,LA (120428),MA,MD,ME,MN,NC,NH,NV,AK (UST-103),AZ (AZ0786),PA(68-00408),RI,SC,TX (T104704234),UT,VA,WA,WV

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Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD78052

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD78052-1	12/01/23	15:50 DK	12/05/23	AQ	Ground Water	OB-41-S_20231201_N_WG
JD78052-2	12/01/23	16:05 DK	12/05/23	AQ	Ground Water	OB-42-S_20231201_N_WG
JD78052-3	12/01/23	16:10 DK	12/05/23	AQ	Ground Water	OB-42-BR_20231201_N_WG
JD78052-4	12/01/23	16:20 DK	12/05/23	AQ	Ground Water	GFS-03_20231202_N_WG
JD78052-5	12/01/23	16:30 DK	12/05/23	AQ	Ground Water	OB-05-DO_20231201_N_WG
JD78052-6	12/01/23	16:30 DK	12/05/23	AQ	Ground Water	OB-05-DO_20231201_FD_WG
JD78052-7	12/01/23	17:00 DK	12/05/23	AQ	Ground Water	OB-04-DO_20231201_N_WG
JD78052-8	12/01/23	15:10 DK	12/05/23	AQ	Ground Water	MW-2_32-TOZER_20231201_N_WG
JD78052-9	12/01/23	16:45 DK	12/05/23	AQ	Ground Water	OB-43-S_20231201_N_WG
JD78052-10	12/04/23	10:00 DK	12/05/23	AQ	Surface Water	STR-05_20231204_N_WS
JD78052-11	12/04/23	10:35 DK	12/05/23	AQ	Surface Water	STRHA-04_20231204_N_WS
JD78052-12	12/04/23	10:50 DK	12/05/23	AQ	Surface Water	STR-17_20231204_N_WS



Sample Summary

(continued)

Jacobs Engineering

Job No: JD78052

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JD78052-13	12/04/23	11:10 DK	12/05/23	AQ	Surface Water	STRHA-07B_20231204_N_WS
JD78052-14	12/04/23	11:20 DK	12/05/23	AQ	Surface Water	STRHA-07A_20231204_N_WS
JD78052-15	12/04/23	11:40 DK	12/05/23	AQ	Ground Water	P-19A_20231204_N_WG
JD78052-16	12/04/23	11:40 DK	12/05/23	AQ	Ground Water	P-19A_20231204_FD_WG
JD78052-17	12/04/23	12:30 DK	12/05/23	AQ	Ground Water	BR-6_ZONE3_20231204_N_WG
JD78052-18	12/04/23	12:45 DK	12/05/23	AQ	Surface Water	STR-18_20231204_N_WG

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD78052

Site: Varian, Beverly, MA

Report Date 12/18/2023 4:35:42 P

On 12/05/2023, 18 sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 4.7 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD78052 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ	Batch ID: V1U2361
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD78052-5: Dilution required due to high concentration of target compound.
- JD78052-5 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-5 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78052-18 for Ethyl Ether: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-14 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-15 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78052-15 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-15 for Ethyl Ether: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-18 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-14 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78052-3 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78052-3 for Ethyl Ether: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-8 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78052-8 for Ethyl Ether: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-18 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- Not all RL meet the requirement.

Matrix: AQ	Batch ID: V2U2361
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of 1,3-Dichlorobenzene are outside control limits.
- JD78052-6: Dilution required due to high concentration of target compound.
- JD78052-6 for 1,1-Dichloroethene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

Monday, December 18, 2023

Page 1 of 2

MS Volatiles By Method SW846 8260D

Matrix: AQ

Batch ID: V2U2361

- JD78052-16 for 1,1-Dichloroethene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-4 for 1,1-Dichloroethene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- V2U2361-BS for 1,3-Dichlorobenzene: Outside in house control limits, but meets MCP criteria.
- JD78052-1 for 1,1-Dichloroethene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-13 for 1,1-Dichloroethene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-17 for 1,1-Dichloroethene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- Not all RL meet the requirement.

Matrix: AQ

Batch ID: V2V4085

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD78052-2: Dilution required due to high concentration of target compound. No pH.
- JD78052-2 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-9 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-10 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-11 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78052-12 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- Not all RL meet the requirement.

Matrix: AQ

Batch ID: V4D5893

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD78052-7: Dilution required due to high concentration of target compound.
- JD78052-7 for Acetone: This compound is outside the MCP limits in the associated BSD biased high.
- V4D5893-BSD for n-Propylbenzene: Outside in house control limits, but meets MCP criteria.
- V4D5893-BSD for 1,1,2,2-Tetrachloroethane: Outside in house control limits, but meets MCP criteria.
- V4D5893-BSD for 1,2,3-Trichloropropane: Outside in house control limits, but meets MCP criteria.
- V4D5893-BSD for 1,2-Dichloroethane: Outside in house control limits, but meets MCP criteria.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Monday, December 18, 2023

Page 2 of 2

Summary of Hits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD78052-1 OB-41-S_20231201_N_WG

cis-1,2-Dichloroethene	35.4	1.0		ug/l	SW846 8260D
Tetrachloroethene	19.1	1.0		ug/l	SW846 8260D
Trichloroethene	94.6	1.0		ug/l	SW846 8260D

JD78052-2 OB-42-S_20231201_N_WG

cis-1,2-Dichloroethene ^a	118	10		ug/l	SW846 8260D
Tetrachloroethene ^a	59.8	10		ug/l	SW846 8260D
Trichloroethene ^a	1710	10		ug/l	SW846 8260D

JD78052-3 OB-42-BR_20231201_N_WG

1,1-Dichloroethane	1.3	1.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene	404	10		ug/l	SW846 8260D
Trichloroethene	29.0	1.0		ug/l	SW846 8260D

JD78052-4 GFS-03_20231202_N_WG

1,1-Dichloroethane	1.8	1.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene	58.6	1.0		ug/l	SW846 8260D
Tetrachloroethene	37.9	1.0		ug/l	SW846 8260D
1,1,1-Trichloroethane	1.5	1.0		ug/l	SW846 8260D
Trichloroethene	259	10		ug/l	SW846 8260D

JD78052-5 OB-05-DO_20231201_N_WG

cis-1,2-Dichloroethene ^b	750	5.0		ug/l	SW846 8260D
Tetrachloroethene ^b	206	5.0		ug/l	SW846 8260D
Trichloroethene	1470	50		ug/l	SW846 8260D
Vinyl chloride ^b	51.7	5.0		ug/l	SW846 8260D

JD78052-6 OB-05-DO_20231201_FD_WG

cis-1,2-Dichloroethene ^b	766	5.0		ug/l	SW846 8260D
Tetrachloroethene ^b	181	5.0		ug/l	SW846 8260D
Trichloroethene	1450	50		ug/l	SW846 8260D
Vinyl chloride ^b	51.0	5.0		ug/l	SW846 8260D

JD78052-7 OB-04-DO_20231201_N_WG

1,1-Dichloroethene ^b	4.4	4.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene	847	40		ug/l	SW846 8260D
Tetrachloroethene ^b	251	4.0		ug/l	SW846 8260D

Summary of Hits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Trichloroethene ^b		786	4.0		ug/l	SW846 8260D
Vinyl chloride ^b		81.5	4.0		ug/l	SW846 8260D
JD78052-8 MW-2_32-TOZER_20231201_N_WG						
Chlorobenzene		1.4	1.0		ug/l	SW846 8260D
1,2-Dichlorobenzene		3.3	1.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene		104	1.0		ug/l	SW846 8260D
Tetrachloroethene		354	10		ug/l	SW846 8260D
Trichloroethene		66.0	1.0		ug/l	SW846 8260D
Vinyl chloride		4.3	1.0		ug/l	SW846 8260D
JD78052-9 OB-43-S_20231201_N_WG						
cis-1,2-Dichloroethene		6.0	1.0		ug/l	SW846 8260D
Tetrachloroethene		3.3	1.0		ug/l	SW846 8260D
Trichloroethene		17.6	1.0		ug/l	SW846 8260D
JD78052-10 STR-05_20231204_N_WS						
cis-1,2-Dichloroethene		11.8	1.0		ug/l	SW846 8260D
Tetrachloroethene		4.6	1.0		ug/l	SW846 8260D
Trichloroethene		19.4	1.0		ug/l	SW846 8260D
Vinyl chloride		2.1	1.0		ug/l	SW846 8260D
JD78052-11 STRHA-04_20231204_N_WS						
cis-1,2-Dichloroethene		8.7	1.0		ug/l	SW846 8260D
Tetrachloroethene		2.8	1.0		ug/l	SW846 8260D
Trichloroethene		12.5	1.0		ug/l	SW846 8260D
Vinyl chloride		1.3	1.0		ug/l	SW846 8260D
JD78052-12 STR-17_20231204_N_WS						
cis-1,2-Dichloroethene		6.6	1.0		ug/l	SW846 8260D
Trichloroethene		3.6	1.0		ug/l	SW846 8260D
JD78052-13 STRHA-07B_20231204_N_WS						
cis-1,2-Dichloroethene		9.2	1.0		ug/l	SW846 8260D
Tetrachloroethene		6.9	1.0		ug/l	SW846 8260D
Trichloroethene		27.5	1.0		ug/l	SW846 8260D

Summary of Hits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD78052-14 STRHA-07A_20231204_N_WS

cis-1,2-Dichloroethene	8.2	1.0			ug/l	SW846 8260D
Tetrachloroethene	4.1	1.0			ug/l	SW846 8260D
Trichloroethene	16.7	1.0			ug/l	SW846 8260D

JD78052-15 P-19A_20231204_N_WG

cis-1,2-Dichloroethene	19.1	1.0			ug/l	SW846 8260D
Trichloroethene	1.5	1.0			ug/l	SW846 8260D

JD78052-16 P-19A_20231204_FD_WG

cis-1,2-Dichloroethene	19.4	1.0			ug/l	SW846 8260D
Trichloroethene	1.4	1.0			ug/l	SW846 8260D

JD78052-17 BR-6_ZONE3_20231204_N_WG

No hits reported in this sample.

JD78052-18 STR-18_20231204_N_WG

cis-1,2-Dichloroethene	10.4	1.0			ug/l	SW846 8260D
Tetrachloroethene	1.2	1.0			ug/l	SW846 8260D
Trichloroethene	3.7	1.0			ug/l	SW846 8260D

- (a) Dilution required due to high concentration of target compound. No pH.
- (b) Dilution required due to high concentration of target compound.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: OB-41-S_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-1	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2U62031.D	1	12/07/23 15:18	LD	n/a	n/a	V2U2361
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene ^a	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	35.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	OB-41-S_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-1	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	19.1	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	94.6	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-41-S_20231201_N_WG	
Lab Sample ID: JD78052-1	Date Sampled: 12/01/23
Matrix: AQ - Ground Water	Date Received: 12/05/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	105%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	OB-42-S_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-2	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2V102629.D	10	12/06/23 18:19	LD	n/a	n/a	V2V4085
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	100	ug/l	
71-43-2	Benzene	ND	5.0	ug/l	
108-86-1	Bromobenzene	ND	10	ug/l	
74-97-5	Bromochloromethane	ND	10	ug/l	
75-27-4	Bromodichloromethane	ND	10	ug/l	
75-25-2	Bromoform	ND	10	ug/l	
74-83-9	Bromomethane	ND	20	ug/l	
78-93-3	2-Butanone (MEK)	ND	100	ug/l	
104-51-8	n-Butylbenzene	ND	20	ug/l	
135-98-8	sec-Butylbenzene	ND	20	ug/l	
98-06-6	tert-Butylbenzene	ND	20	ug/l	
75-15-0	Carbon disulfide	ND	20	ug/l	
56-23-5	Carbon tetrachloride	ND	10	ug/l	
108-90-7	Chlorobenzene	ND	10	ug/l	
75-00-3	Chloroethane	ND	10	ug/l	
67-66-3	Chloroform	ND	10	ug/l	
74-87-3	Chloromethane	ND	10	ug/l	
95-49-8	o-Chlorotoluene	ND	20	ug/l	
106-43-4	p-Chlorotoluene	ND	20	ug/l	
108-20-3	Di-Isopropyl ether	ND	20	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	20	ug/l	
124-48-1	Dibromochloromethane	ND	10	ug/l	
106-93-4	1,2-Dibromoethane	ND	10	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	10	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	10	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	10	ug/l	
75-71-8	Dichlorodifluoromethane ^b	ND	20	ug/l	
75-34-3	1,1-Dichloroethane	ND	10	ug/l	
107-06-2	1,2-Dichloroethane	ND	10	ug/l	
75-35-4	1,1-Dichloroethene	ND	10	ug/l	
156-59-2	cis-1,2-Dichloroethene	118	10	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	10	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-42-S_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-2	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	10	ug/l	
142-28-9	1,3-Dichloropropane	ND	10	ug/l	
594-20-7	2,2-Dichloropropane	ND	10	ug/l	
563-58-6	1,1-Dichloropropene	ND	10	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	10	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	10	ug/l	
123-91-1	1,4-Dioxane	ND	1300	ug/l	
60-29-7	Ethyl Ether	ND	20	ug/l	
100-41-4	Ethylbenzene	ND	10	ug/l	
87-68-3	Hexachlorobutadiene	ND	20	ug/l	
591-78-6	2-Hexanone	ND	50	ug/l	
98-82-8	Isopropylbenzene	ND	10	ug/l	
99-87-6	p-Isopropyltoluene	ND	20	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	50	ug/l	
74-95-3	Methylene bromide	ND	10	ug/l	
75-09-2	Methylene chloride	ND	20	ug/l	
91-20-3	Naphthalene	ND	50	ug/l	
103-65-1	n-Propylbenzene	ND	20	ug/l	
100-42-5	Styrene	ND	10	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	20	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	20	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	10	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	ug/l	
127-18-4	Tetrachloroethene	59.8	10	ug/l	
109-99-9	Tetrahydrofuran	ND	100	ug/l	
108-88-3	Toluene	ND	10	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	10	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	10	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	10	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	10	ug/l	
79-01-6	Trichloroethene	1710	10	ug/l	
75-69-4	Trichlorofluoromethane	ND	20	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	20	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	20	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	20	ug/l	
75-01-4	Vinyl chloride	ND	10	ug/l	
	m,p-Xylene	ND	10	ug/l	
95-47-6	o-Xylene	ND	10	ug/l	
1330-20-7	Xylene (total)	ND	10	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-42-S_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-2	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	105%		82-114%

- (a) Dilution required due to high concentration of target compound. No pH.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-42-BR_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-3	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1U62044.D	1	12/07/23 18:31	LD	n/a	n/a	V1U2361
Run #2	1U62040.D	10	12/07/23 17:32	LD	n/a	n/a	V1U2361

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	1.3	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	404 ^b	10	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-42-BR_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-3	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether ^c	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	29.0	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-42-BR_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-3	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	100%	80-120%
2037-26-5	Toluene-D8	107%	105%	80-120%
460-00-4	4-Bromofluorobenzene	105%	107%	82-114%

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) Result is from Run# 2
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GFS-03_20231202_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-4	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2U62045.D	1	12/07/23 18:46	LD	n/a	n/a	V2U2361
Run #2	2U62041.D	10	12/07/23 17:47	LD	n/a	n/a	V2U2361

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	1.8	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene ^a	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	58.6	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GFS-03_20231202_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-4	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	37.9	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	1.5	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	259 ^b	10	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: GFS-03_20231202_N_WG Lab Sample ID: JD78052-4 Matrix: AQ - Ground Water Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 12/01/23 Date Received: 12/05/23 Percent Solids: n/a
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	105%	80-120%
2037-26-5	Toluene-D8	104%	105%	80-120%
460-00-4	4-Bromofluorobenzene	105%	106%	82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID:	OB-05-DO_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-5	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	1U62034.D	5	12/07/23 16:03	LD	n/a	n/a	V1U2361
Run #2	1U62032.D	50	12/07/23 15:33	LD	n/a	n/a	V1U2361

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	50	ug/l	
71-43-2	Benzene	ND	2.5	ug/l	
108-86-1	Bromobenzene	ND	5.0	ug/l	
74-97-5	Bromochloromethane	ND	5.0	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	ug/l	
75-25-2	Bromoform	ND	5.0	ug/l	
74-83-9	Bromomethane	ND	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	ug/l	
104-51-8	n-Butylbenzene	ND	10	ug/l	
135-98-8	sec-Butylbenzene	ND	10	ug/l	
98-06-6	tert-Butylbenzene	ND	10	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	ug/l	
108-90-7	Chlorobenzene	ND	5.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	5.0	ug/l	
74-87-3	Chloromethane	ND	5.0	ug/l	
95-49-8	o-Chlorotoluene	ND	10	ug/l	
106-43-4	p-Chlorotoluene	ND	10	ug/l	
108-20-3	Di-Isopropyl ether	ND	10	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	5.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	5.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	10	ug/l	
75-34-3	1,1-Dichloroethane	ND	5.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	750	5.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-05-DO_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-5	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	5.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	ug/l	
123-91-1	1,4-Dioxane	ND	630	ug/l	
60-29-7	Ethyl Ether ^b	ND	10	ug/l	
100-41-4	Ethylbenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	10	ug/l	
591-78-6	2-Hexanone	ND	25	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	ug/l	
74-95-3	Methylene bromide	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
91-20-3	Naphthalene	ND	25	ug/l	
103-65-1	n-Propylbenzene	ND	10	ug/l	
100-42-5	Styrene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	10	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	ug/l	
127-18-4	Tetrachloroethene	206	5.0	ug/l	
109-99-9	Tetrahydrofuran	ND	50	ug/l	
108-88-3	Toluene	ND	5.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	5.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	ug/l	
79-01-6	Trichloroethene	1470 ^d	50	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	10	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	10	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	10	ug/l	
75-01-4	Vinyl chloride	51.7	5.0	ug/l	
	m,p-Xylene	ND	5.0	ug/l	
95-47-6	o-Xylene	ND	5.0	ug/l	
1330-20-7	Xylene (total)	ND	5.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-05-DO_20231201_N_WG Lab Sample ID: JD78052-5 Matrix: AQ - Ground Water Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 12/01/23 Date Received: 12/05/23 Percent Solids: n/a
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	107%	80-120%
2037-26-5	Toluene-D8	106%	107%	80-120%
460-00-4	4-Bromofluorobenzene	105%	104%	82-114%

- (a) Dilution required due to high concentration of target compound.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (c) Associated CCV outside of control limits high, sample was ND.
- (d) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.5
4

Report of Analysis

Client Sample ID:	OB-05-DO_20231201_FD_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-6	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2U62035.D	5	12/07/23 16:18	LD	n/a	n/a	V2U2361
Run #2	2U62033.D	50	12/07/23 15:48	LD	n/a	n/a	V2U2361

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	2.5	ug/l	
108-86-1	Bromobenzene	ND	5.0	ug/l	
74-97-5	Bromochloromethane	ND	5.0	ug/l	
75-27-4	Bromodichloromethane	ND	5.0	ug/l	
75-25-2	Bromoform	ND	5.0	ug/l	
74-83-9	Bromomethane	ND	10	ug/l	
78-93-3	2-Butanone (MEK)	ND	50	ug/l	
104-51-8	n-Butylbenzene	ND	10	ug/l	
135-98-8	sec-Butylbenzene	ND	10	ug/l	
98-06-6	tert-Butylbenzene	ND	10	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	5.0	ug/l	
108-90-7	Chlorobenzene	ND	5.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	5.0	ug/l	
74-87-3	Chloromethane	ND	5.0	ug/l	
95-49-8	o-Chlorotoluene	ND	10	ug/l	
106-43-4	p-Chlorotoluene	ND	10	ug/l	
108-20-3	Di-Isopropyl ether	ND	10	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	10	ug/l	
124-48-1	Dibromochloromethane	ND	5.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	5.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	5.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	5.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	5.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	10	ug/l	
75-34-3	1,1-Dichloroethane	ND	5.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	5.0	ug/l	
75-35-4	1,1-Dichloroethene ^b	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	766	5.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	5.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-05-DO_20231201_FD_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-6	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	5.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	ug/l	
123-91-1	1,4-Dioxane	ND	630	ug/l	
60-29-7	Ethyl Ether	ND	10	ug/l	
100-41-4	Ethylbenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	10	ug/l	
591-78-6	2-Hexanone	ND	25	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	5.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	25	ug/l	
74-95-3	Methylene bromide	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	10	ug/l	
91-20-3	Naphthalene	ND	25	ug/l	
103-65-1	n-Propylbenzene	ND	10	ug/l	
100-42-5	Styrene	ND	5.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	10	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	10	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	ug/l	
127-18-4	Tetrachloroethene	181	5.0	ug/l	
109-99-9	Tetrahydrofuran	ND	50	ug/l	
108-88-3	Toluene	ND	5.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	5.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	5.0	ug/l	
79-01-6	Trichloroethene	1450 ^c	50	ug/l	
75-69-4	Trichlorofluoromethane	ND	10	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	10	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	10	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	10	ug/l	
75-01-4	Vinyl chloride	51.0	5.0	ug/l	
	m,p-Xylene	ND	5.0	ug/l	
95-47-6	o-Xylene	ND	5.0	ug/l	
1330-20-7	Xylene (total)	ND	5.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-05-DO_20231201_FD_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-6	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	102%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	107%	80-120%
2037-26-5	Toluene-D8	106%	104%	80-120%
460-00-4	4-Bromofluorobenzene	108%	105%	82-114%

- (a) Dilution required due to high concentration of target compound.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (c) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-04-DO_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-7	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	4D133222.D	4	12/08/23 12:25	NW	n/a	n/a	V4D5893
Run #2	2U62043.D	40	12/07/23 18:17	LD	n/a	n/a	V2U2361

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^b	ND	40	ug/l	
71-43-2	Benzene	ND	2.0	ug/l	
108-86-1	Bromobenzene	ND	4.0	ug/l	
74-97-5	Bromochloromethane	ND	4.0	ug/l	
75-27-4	Bromodichloromethane	ND	4.0	ug/l	
75-25-2	Bromoform	ND	4.0	ug/l	
74-83-9	Bromomethane	ND	8.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	40	ug/l	
104-51-8	n-Butylbenzene	ND	8.0	ug/l	
135-98-8	sec-Butylbenzene	ND	8.0	ug/l	
98-06-6	tert-Butylbenzene	ND	8.0	ug/l	
75-15-0	Carbon disulfide	ND	8.0	ug/l	
56-23-5	Carbon tetrachloride	ND	4.0	ug/l	
108-90-7	Chlorobenzene	ND	4.0	ug/l	
75-00-3	Chloroethane	ND	4.0	ug/l	
67-66-3	Chloroform	ND	4.0	ug/l	
74-87-3	Chloromethane	ND	4.0	ug/l	
95-49-8	o-Chlorotoluene	ND	8.0	ug/l	
106-43-4	p-Chlorotoluene	ND	8.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	8.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	8.0	ug/l	
124-48-1	Dibromochloromethane	ND	4.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	4.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	4.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	4.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	4.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	8.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	4.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	4.0	ug/l	
75-35-4	1,1-Dichloroethene	4.4	4.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	847 ^c	40	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	4.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID:	OB-04-DO_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-7	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	4.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	4.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	4.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	4.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	4.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	4.0	ug/l	
123-91-1	1,4-Dioxane	ND	500	ug/l	
60-29-7	Ethyl Ether	ND	8.0	ug/l	
100-41-4	Ethylbenzene	ND	4.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	8.0	ug/l	
591-78-6	2-Hexanone	ND	20	ug/l	
98-82-8	Isopropylbenzene	ND	4.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	8.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	4.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	20	ug/l	
74-95-3	Methylene bromide	ND	4.0	ug/l	
75-09-2	Methylene chloride	ND	8.0	ug/l	
91-20-3	Naphthalene	ND	20	ug/l	
103-65-1	n-Propylbenzene	ND	8.0	ug/l	
100-42-5	Styrene	ND	4.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	8.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	8.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	4.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	4.0	ug/l	
127-18-4	Tetrachloroethene	251	4.0	ug/l	
109-99-9	Tetrahydrofuran	ND	40	ug/l	
108-88-3	Toluene	ND	4.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	4.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	4.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	4.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	4.0	ug/l	
79-01-6	Trichloroethene	786	4.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	8.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	8.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	8.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	8.0	ug/l	
75-01-4	Vinyl chloride	81.5	4.0	ug/l	
	m,p-Xylene	ND	4.0	ug/l	
95-47-6	o-Xylene	ND	4.0	ug/l	
1330-20-7	Xylene (total)	ND	4.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-04-DO_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-7	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	106%	80-120%
2037-26-5	Toluene-D8	95%	104%	80-120%
460-00-4	4-Bromofluorobenzene	100%	105%	82-114%

- (a) Dilution required due to high concentration of target compound.
- (b) This compound is outside the MCP limits in the associated BSD biased high.
- (c) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID:	MW-2_32-TOZER_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-8	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1U62046.D	1	12/07/23 19:01	LD	n/a	n/a	V1U2361
Run #2	1U62042.D	10	12/07/23 18:02	LD	n/a	n/a	V1U2361

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	1.4	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	3.3	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	104	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-2_32-TOZER_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-8	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether ^b	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	354 ^c	10	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	66.0	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	4.3	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-2_32-TOZER_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-8	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	105%	80-120%
2037-26-5	Toluene-D8	105%	105%	80-120%
460-00-4	4-Bromofluorobenzene	105%	106%	82-114%

- (a) Associated CCV outside of control limits high, sample was ND.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (c) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-43-S_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-9	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102632.D	1	12/06/23 19:37	LD	n/a	n/a	V2V4085
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	6.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-43-S_20231201_N_WG	Date Sampled:	12/01/23
Lab Sample ID:	JD78052-9	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	3.3	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	17.6	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-43-S_20231201_N_WG	Date Sampled: 12/01/23
Lab Sample ID: JD78052-9	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	110%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-05_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-10	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102633.D	1	12/06/23 20:02	LD	n/a	n/a	V2V4085
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	11.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID:	STR-05_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-10	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	4.6	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	19.4	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	2.1	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-05_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-10	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

4.10
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	109%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STRHA-04_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-11	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102634.D	1	12/06/23 20:28	LD	n/a	n/a	V2V4085
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	8.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STRHA-04_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-11	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	2.8	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	12.5	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	1.3	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STRHA-04_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-11	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		80-120%
2037-26-5	Toluene-D8	102%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-17_20231204_N_WS	
Lab Sample ID: JD78052-12	Date Sampled: 12/04/23
Matrix: AQ - Surface Water	Date Received: 12/05/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102635.D	1	12/06/23 20:54	LD	n/a	n/a	V2V4085
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	6.6	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-17_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-12	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	3.6	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-17_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-12	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		80-120%
17060-07-0	1,2-Dichloroethane-D4	111%		80-120%
2037-26-5	Toluene-D8	103%		80-120%
460-00-4	4-Bromofluorobenzene	104%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STRHA-07B_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-13	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2U62025.D	1	12/07/23 13:49	LD	n/a	n/a	V2U2361
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene ^a	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	9.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STRHA-07B_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-13	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	6.9	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	27.5	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STRHA-07B_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-13	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	105%		80-120%
460-00-4	4-Bromofluorobenzene	105%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STRHA-07A_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-14	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1U62026.D	1	12/07/23 14:04	LD	n/a	n/a	V1U2361
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^b	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	8.2	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.14
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Report of Analysis

Client Sample ID:	STRHA-07A_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-14	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	4.1	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	16.7	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STRHA-07A_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78052-14	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	104%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-19A_20231204_N_WG	
Lab Sample ID: JD78052-15	Date Sampled: 12/04/23
Matrix: AQ - Ground Water	Date Received: 12/05/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1U62028.D	1	12/07/23 14:34	LD	n/a	n/a	V1U2361
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^b	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	19.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-19A_20231204_N_WG
Lab Sample ID: JD78052-15
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 12/04/23
Date Received: 12/05/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether ^a	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	1.5	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-19A_20231204_N_WG Lab Sample ID: JD78052-15 Matrix: AQ - Ground Water Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 12/04/23 Date Received: 12/05/23 Percent Solids: n/a
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	104%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-19A_20231204_FD_WG	Date Sampled: 12/04/23
Lab Sample ID: JD78052-16	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2U62029.D	1	12/07/23 14:49	LD	n/a	n/a	V2U2361
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene ^a	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	19.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-19A_20231204_FD_WG	Date Sampled: 12/04/23
Lab Sample ID: JD78052-16	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

4.16
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VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	1.4	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-19A_20231204_FD_WG	
Lab Sample ID: JD78052-16	Date Sampled: 12/04/23
Matrix: AQ - Ground Water	Date Received: 12/05/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

4.16
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BR-6_ZONE3 _20231204_N_WG	Date Sampled: 12/04/23
Lab Sample ID: JD78052-17	Date Received: 12/05/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2U62027.D	1	12/07/23 14:19	LD	n/a	n/a	V2U2361
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene ^a	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	BR-6_ZONE3 _20231204_N_WG	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-17	Date Received:	12/05/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: BR-6_ZONE3 _20231204_N_WG Lab Sample ID: JD78052-17 Matrix: AQ - Ground Water Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 12/04/23 Date Received: 12/05/23 Percent Solids: n/a
---	---

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	105%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-18_20231204_N_WG	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-18	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1U62030.D	1	12/07/23 15:04	LD	n/a	n/a	V1U2361
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^b	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	10.4	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-18_20231204_N_WG	Date Sampled:	12/04/23
Lab Sample ID:	JD78052-18	Date Received:	12/05/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether ^a	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	1.2	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	3.7	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-18_20231204_N_WG	Date Sampled: 12/04/23
Lab Sample ID: JD78052-18	Date Received: 12/05/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

4.18
4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	106%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits

CHAIN OF CUSTODY

Page 1 of 2

0455 1922 3230 JD78052

Client/ Reporting Information			Project Information		
Company Name Jacobs Engineering			Project Name Varian Medical Systems		
Street Address 120 St. James Ave			Street 150 Sohier Rd		
City Boston	State MA	Zip 02166	City Beverly	State MA	
Project Contact Berney Kidd		Email Bernice.Kidd@jacobs.com	Project # VARMS107.A.CS.EV.2.23		
Phone # 530-229-3203		Client PO #		TAT Standard 10 day	
Sampler(s) Name(s) Deirdre Kearney		Phone # 781-710-4276	Project Manager Raymond Cadorette		

MJ-111623-82

VOCs SW8260	MEE RSK175	TOC SM6310C								
-------------	------------	-------------	--	--	--	--	--	--	--	--

SGS Sample #	Field ID/ Point of Collection	Collection		Sampled by	Grab / Comp	Matrix	Bottles		HCL	NaOH	HNO3	H2SO4	MEOH	DI water	NONE									
		Date	Time				# bottles																	
1	OB-41-S_20231201_N_WG	12/1	1550	DK	G	GW	3	3																
2	OB-42-S_20231201_N_WG	12/1	1605	DK	G	GW	3	3																
3	OB-42-BR_20231201_N_WG	12/1	1610	DK	G	GW	3	3																
4	GFS-3_20231202_N_WG	12/1	1620	DK	G	GW	3	3																
5	OB-05-DO_20231201_N_WG	12/1	1630	DK	G	GW	2	2																
6	OB-05-DO_20231201_FD_WG	12/1	1630	DK	G	GW	2	2																
7	OB-04-DO_20231201_N_WG	12/1	1700	DK	G	GW	3	3																
8	MW2-32TOZER_20231201_N_WG	12/1	1510	DK	G	GW	3	3																
9	OB-43-S_20231201_N_WG	12/1	1645	DK	G	GW	3	3																
10	STR-5-20231204_N_WS	12/4	1000	DK	G	W	3	3																
11	STR-4A-04-20231204_N_WS	12/4	1035	OK	G	W	3	3																
12	STR-17-20231204_N_WS	12/4	1050	DK	G	W	3	3																

V300

SGS Courier

Relinquished by:	Date / Time: 12/4/23 1300	Received by:	Relinquished by:	Date / Time: 12/4/23 1750	Received by:
Relinquished by:	Date / Time: 12/9/23 105	Received by:	Relinquished by:	Date / Time:	Received by:

Initial: _____
Label Verification: _____

SGS Service Center
Northborough, MA
12/14

4.7
R-40

JD78052: Chain of Custody

Page 1 of 5

CHAIN OF CUSTODY

JD78052

Client/ Reporting Information				Project Information											
Company Name Jacobs Engineering				Project Name Varian Medical Systems											
Street Address 120 St. James Ave				Street 150 Sohier Rd											
City Boston		State MA		Zip 02166		City Beverly				State MA					
Project Contact Bernie Kidd		Email Bernie.Kidd@Jacobs.com		Project # VARMS107.A.CS.EV.2.23											
Phone # 530-229-3203				Client PO #				TAT Standard 10 day							
Sampler(s) Name(s) Deirdre Kearney		Phone # 781-710-4276		Project Manager Raymond Cadorette											
Collection															
SGS Sample #	Field ID/ Point of Collection	Date	Time	Sampled by	Grab / Comp	Matrix	# bottles	HCL	NaOH	HNO3	H2SO4	MEOH	DI water	NONE	
13	STR-476-20231204-NLW5	12/4	1110	DK	G	W	3	3							X
14	STR-476-20231204-NLW	12/4	1120	DK	G	W	3	3							X
15	P-19A-20231204-NLW6	12/4	1146	DK	G	W	2	2							X
16	P-19A-20231204-FO-W6	12/4	1140	DK	G	W	2	2							X
17	BR-620231204-NLW6	12/4	1230	DK	G	W	3	3							X
18	STR-18-20231204-NLW6	12/4	1245	DK	G	W	3	3							X

Relinquished by:	Date / Time: 12/4/23 1300	Received by:	Relinquished by:	Date / Time: 12/4/23 1750	Received by:
Relinquished by:	Date / Time:	Received by:	Relinquished by:	Date / Time:	Received by:

SGS Service Center
Northborough, MA 214

JD78052: Chain of Custody

Page 2 of 5

5.1
5

SGS Sample Receipt Summary

Job Number: JD78052

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 12/5/2023 10:15:00 AM

Delivery Method: FED EX

Airbill #'s: 6455 9822 3230

Cooler Temps (Raw Measured) °C: Cooler 1: (4.7);

Cooler Temps (Corrected) °C: Cooler 1: (4.7);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smp'l Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | _____ | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservatio

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: <u>231619</u>	pH 12+: <u>203117A</u>	Other: (Specify) _____
--------------------	------------------------	------------------------	------------------------

Comments

SM089-03
Rev. Date 12/7/17

Job Change Order: JD78052

Requested Date: 12/6/2023 Received Date: 12/5/2023
Account Name: Jacobs Engineering Due Date: 12/6/2023
Project Description: Varian, Beverly, MA MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 14

=====
Sample #: JD78052-4 Dept:
Client ID: GFS-3_20231201_N_WG TAT: 14
Change: Revise ID to GFS-03_20231202_N_WG

=====
Sample #: JD78052-8 Dept:
Client ID: MW2-32TOZER_20231201_N_WG TAT: 14
Change: Revise ID to MW-2_32-TOZER_20231201_N_WG

=====
Sample #: JD78052-10 Dept:
Client ID: STR-5_20231204_N_WS TAT: 14
Change: Revise ID to STR-05_20231204_N_WS

=====
Sample #: JD78052-13 Dept:
Client ID: STRHA-7B_20231204_N_WS TAT: 14
Change: Revise ID to STRHA-07B_20231204_N_WS

Above Changes Per: Berney Kidd Date/Time: 12/6/2023
To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD78052

Requested Date: 12/6/2023 Received Date: 12/5/2023
Account Name: Jacobs Engineering Due Date: 12/6/2023
Project Description: Varian, Beverly, MA Deliverable: MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 14

=====
Sample #: JD78052-14 Dept:
Client ID: STRHA-7A_20231204_N_WS TAT: 14
Change: Revise ID to STRHA-07A_20231204_N_WS

=====
Sample #: JD78052-17 Dept:
Client ID: BR-6ZONE-3_20231204_N_WG TAT: 14
Change: Revise ID to BR-6_ZONE3_20231204_N_WG

JD78052: Chain of Custody
Page 5 of 5

Above Changes Per: Berney Kidd Date/Time: 12/6/2023
To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM

Exhibit VII A

July 1, 2010

Revision No. 1

Final

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton

Project #: JD78052

Project Location: Varian, Beverly, MA

MADEP RTN

None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD78052-1,JD78052-10,JD78052-11,JD78052-12,JD78052-13,JD78052-14,JD78052-15
JD78052-16,JD78052-17,JD78052-18,JD78052-2,JD78052-3,JD78052-4,JD78052-5
JD78052-6,JD78052-'

Matrices: Groundwater/Surface Water (X) Soil/Sediment () Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total () Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:

Position: General Manager

Printed Name: David Chastain

Date: 18-Dec-23

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Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78052

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78052-1 Collected: 01-DEC-23 15:50 By: DK Received: 05-DEC-23 By: JK OB-41-S_20231201_N_WG						
JD78052-1	SW846 8260D	07-DEC-23 15:18	LD			V8260MCP
JD78052-2 Collected: 01-DEC-23 16:05 By: DK Received: 05-DEC-23 By: JK OB-42-S_20231201_N_WG						
JD78052-2	SW846 8260D	06-DEC-23 18:19	LD			V8260MCP
JD78052-3 Collected: 01-DEC-23 16:10 By: DK Received: 05-DEC-23 By: JK OB-42-BR_20231201_N_WG						
JD78052-3	SW846 8260D	07-DEC-23 17:32	LD			V8260MCP
JD78052-3	SW846 8260D	07-DEC-23 18:31	LD			V8260MCP
JD78052-4 Collected: 01-DEC-23 16:20 By: DK Received: 05-DEC-23 By: JK GFS-03_20231202_N_WG						
JD78052-4	SW846 8260D	07-DEC-23 17:47	LD			V8260MCP
JD78052-4	SW846 8260D	07-DEC-23 18:46	LD			V8260MCP
JD78052-5 Collected: 01-DEC-23 16:30 By: DK Received: 05-DEC-23 By: JK OB-05-DO_20231201_N_WG						
JD78052-5	SW846 8260D	07-DEC-23 15:33	LD			V8260MCP
JD78052-5	SW846 8260D	07-DEC-23 16:03	LD			V8260MCP
JD78052-6 Collected: 01-DEC-23 16:30 By: DK Received: 05-DEC-23 By: JK OB-05-DO_20231201_FD_WG						
JD78052-6	SW846 8260D	07-DEC-23 15:48	LD			V8260MCP
JD78052-6	SW846 8260D	07-DEC-23 16:18	LD			V8260MCP
JD78052-7 Collected: 01-DEC-23 17:00 By: DK Received: 05-DEC-23 By: JK OB-04-DO_20231201_N_WG						
JD78052-7	SW846 8260D	07-DEC-23 18:17	LD			V8260MCP
JD78052-7	SW846 8260D	08-DEC-23 12:25	NW			V8260MCP

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78052

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78052-8 Collected: 01-DEC-23 15:10 By: DK Received: 05-DEC-23 By: JK MW-2_32-TOZER_20231201_N_WG						
JD78052-8	SW846 8260D	07-DEC-23 18:02	LD			V8260MCP
JD78052-8	SW846 8260D	07-DEC-23 19:01	LD			V8260MCP
JD78052-9 Collected: 01-DEC-23 16:45 By: DK Received: 05-DEC-23 By: JK OB-43-S_20231201_N_WG						
JD78052-9	SW846 8260D	06-DEC-23 19:37	LD			V8260MCP
JD78052-10 Collected: 04-DEC-23 10:00 By: DK Received: 05-DEC-23 By: JK STR-05_20231204_N_WS						
JD78052-10	SW846 8260D	06-DEC-23 20:02	LD			V8260MCP
JD78052-11 Collected: 04-DEC-23 10:35 By: DK Received: 05-DEC-23 By: JK STRHA-04_20231204_N_WS						
JD78052-11	SW846 8260D	06-DEC-23 20:28	LD			V8260MCP
JD78052-12 Collected: 04-DEC-23 10:50 By: DK Received: 05-DEC-23 By: JK STR-17_20231204_N_WS						
JD78052-12	SW846 8260D	06-DEC-23 20:54	LD			V8260MCP
JD78052-13 Collected: 04-DEC-23 11:10 By: DK Received: 05-DEC-23 By: JK STRHA-07B_20231204_N_WS						
JD78052-13	SW846 8260D	07-DEC-23 13:49	LD			V8260MCP
JD78052-14 Collected: 04-DEC-23 11:20 By: DK Received: 05-DEC-23 By: JK STRHA-07A_20231204_N_WS						
JD78052-14	SW846 8260D	07-DEC-23 14:04	LD			V8260MCP
JD78052-15 Collected: 04-DEC-23 11:40 By: DK Received: 05-DEC-23 By: JK P-19A_20231204_N_WG						

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78052

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78052-15	SW846 8260D	07-DEC-23 14:34	LD			V8260MCP
JD78052-16 Collected: 04-DEC-23 11:40 By: DK Received: 05-DEC-23 By: JK P-19A_20231204_FD_WG						
JD78052-16	SW846 8260D	07-DEC-23 14:49	LD			V8260MCP
JD78052-17 Collected: 04-DEC-23 12:30 By: DK Received: 05-DEC-23 By: JK BR-6_ZONE3_20231204_N_WG						
JD78052-17	SW846 8260D	07-DEC-23 14:19	LD			V8260MCP
JD78052-18 Collected: 04-DEC-23 12:45 By: DK Received: 05-DEC-23 By: JK STR-18_20231204_N_WG						
JD78052-18	SW846 8260D	07-DEC-23 15:04	LD			V8260MCP

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1U2361	SW846 8260D						
V1U2361-BS	67-64-1	Acetone	BSP	REC	76	%	70-130
V1U2361-BS	71-43-2	Benzene	BSP	REC	88	%	70-130
V1U2361-BS	108-86-1	Bromobenzene	BSP	REC	111	%	70-130
V1U2361-BS	74-97-5	Bromochloromethane	BSP	REC	98	%	70-130
V1U2361-BS	75-27-4	Bromodichloromethane	BSP	REC	96	%	70-130
V1U2361-BS	75-25-2	Bromoform	BSP	REC	108	%	70-130
V1U2361-BS	74-83-9	Bromomethane	BSP	REC	96	%	70-130
V1U2361-BS	78-93-3	2-Butanone (MEK)	BSP	REC	86	%	70-130
V1U2361-BS	104-51-8	n-Butylbenzene	BSP	REC	109	%	70-130
V1U2361-BS	135-98-8	sec-Butylbenzene	BSP	REC	109	%	70-130
V1U2361-BS	98-06-6	tert-Butylbenzene	BSP	REC	113	%	70-130
V1U2361-BS	75-15-0	Carbon disulfide	BSP	REC	79	%	70-130
V1U2361-BS	56-23-5	Carbon tetrachloride	BSP	REC	93	%	70-130
V1U2361-BS	108-90-7	Chlorobenzene	BSP	REC	106	%	70-130
V1U2361-BS	75-00-3	Chloroethane	BSP	REC	92	%	70-130
V1U2361-BS	67-66-3	Chloroform	BSP	REC	96	%	70-130
V1U2361-BS	74-87-3	Chloromethane	BSP	REC	88	%	70-130
V1U2361-BS	95-49-8	o-Chlorotoluene	BSP	REC	107	%	70-130
V1U2361-BS	106-43-4	p-Chlorotoluene	BSP	REC	105	%	70-130
V1U2361-BS	108-20-3	Di-Isopropyl ether	BSP	REC	83	%	70-130
V1U2361-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	105	%	70-130
V1U2361-BS	124-48-1	Dibromochloromethane	BSP	REC	104	%	70-130
V1U2361-BS	106-93-4	1,2-Dibromoethane	BSP	REC	107	%	70-130
V1U2361-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	111	%	70-130
V1U2361-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	111	%	70-130
V1U2361-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	100	%	70-130
V1U2361-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	95	%	70-130
V1U2361-BS	75-34-3	1,1-Dichloroethane	BSP	REC	86	%	70-130
V1U2361-BS	107-06-2	1,2-Dichloroethane	BSP	REC	90	%	70-130
V1U2361-BS	75-35-4	1,1-Dichloroethene	BSP	REC	79	%	70-130
V1U2361-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	87	%	70-130
V1U2361-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	87	%	70-130
V1U2361-BS	78-87-5	1,2-Dichloropropane	BSP	REC	89	%	70-130
V1U2361-BS	142-28-9	1,3-Dichloropropane	BSP	REC	96	%	70-130
V1U2361-BS	594-20-7	2,2-Dichloropropane	BSP	REC	96	%	70-130
V1U2361-BS	563-58-6	1,1-Dichloropropene	BSP	REC	92	%	70-130
V1U2361-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	98	%	70-130
V1U2361-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	99	%	70-130
V1U2361-BS	123-91-1	1,4-Dioxane	BSP	REC	110	%	70-130
V1U2361-BS	60-29-7	Ethyl Ether	BSP	REC	78	%	70-130
V1U2361-BS	100-41-4	Ethylbenzene	BSP	REC	100	%	70-130
V1U2361-BS	87-68-3	Hexachlorobutadiene	BSP	REC	107	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1U2361-BS	591-78-6	2-Hexanone	BSP	REC	87	%	70-130
V1U2361-BS	98-82-8	Isopropylbenzene	BSP	REC	112	%	70-130
V1U2361-BS	99-87-6	p-Isopropyltoluene	BSP	REC	113	%	70-130
V1U2361-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	85	%	70-130
V1U2361-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	89	%	70-130
V1U2361-BS	74-95-3	Methylene bromide	BSP	REC	95	%	70-130
V1U2361-BS	75-09-2	Methylene chloride	BSP	REC	85	%	70-130
V1U2361-BS	91-20-3	Naphthalene	BSP	REC	113	%	70-130
V1U2361-BS	103-65-1	n-Propylbenzene	BSP	REC	104	%	70-130
V1U2361-BS	100-42-5	Styrene	BSP	REC	114	%	70-130
V1U2361-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	95	%	70-130
V1U2361-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	85	%	70-130
V1U2361-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	111	%	70-130
V1U2361-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	99	%	70-130
V1U2361-BS	127-18-4	Tetrachloroethene	BSP	REC	107	%	70-130
V1U2361-BS	109-99-9	Tetrahydrofuran	BSP	REC	91	%	70-130
V1U2361-BS	108-88-3	Toluene	BSP	REC	98	%	70-130
V1U2361-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	113	%	70-130
V1U2361-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	113	%	70-130
V1U2361-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	97	%	70-130
V1U2361-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	96	%	70-130
V1U2361-BS	79-01-6	Trichloroethene	BSP	REC	99	%	70-130
V1U2361-BS	75-69-4	Trichlorofluoromethane	BSP	REC	91	%	70-130
V1U2361-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	109	%	70-130
V1U2361-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	112	%	70-130
V1U2361-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	111	%	70-130
V1U2361-BS	75-01-4	Vinyl chloride	BSP	REC	79	%	70-130
V1U2361-BS		m,p-Xylene	BSP	REC	109	%	70-130
V1U2361-BS	95-47-6	o-Xylene	BSP	REC	110	%	70-130
V1U2361-BS	1330-20-7	Xylene (total)	BSP	REC	109	%	70-130
V1U2361-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	95	%	70-130
V1U2361-BS	2037-26-5	Toluene-D8	BSP	SURR	97	%	70-130
V1U2361-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	97	%	70-130
V1U2361-BSD	67-64-1	Acetone	BSD	REC	71	%	70-130
V1U2361-BSD	67-64-1	Acetone	BSD	RPD	6	%	20
V1U2361-BSD	71-43-2	Benzene	BSD	REC	91	%	70-130
V1U2361-BSD	71-43-2	Benzene	BSD	RPD	3	%	20
V1U2361-BSD	108-86-1	Bromobenzene	BSD	REC	114	%	70-130
V1U2361-BSD	108-86-1	Bromobenzene	BSD	RPD	3	%	20
V1U2361-BSD	74-97-5	Bromochloromethane	BSD	REC	99	%	70-130
V1U2361-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V1U2361-BSD	75-27-4	Bromodichloromethane	BSD	REC	95	%	70-130
V1U2361-BSD	75-27-4	Bromodichloromethane	BSD	RPD	1	%	20
V1U2361-BSD	75-25-2	Bromoform	BSD	REC	109	%	70-130
V1U2361-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1U2361-BSD	74-83-9	Bromomethane	BSD	REC	93	%	70-130
V1U2361-BSD	74-83-9	Bromomethane	BSD	RPD	3	%	20
V1U2361-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	83	%	70-130
V1U2361-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	4	%	20
V1U2361-BSD	104-51-8	n-Butylbenzene	BSD	REC	111	%	70-130
V1U2361-BSD	104-51-8	n-Butylbenzene	BSD	RPD	2	%	20
V1U2361-BSD	135-98-8	sec-Butylbenzene	BSD	REC	115	%	70-130
V1U2361-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	5	%	20
V1U2361-BSD	98-06-6	tert-Butylbenzene	BSD	REC	119	%	70-130
V1U2361-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	5	%	20
V1U2361-BSD	75-15-0	Carbon disulfide	BSD	REC	79	%	70-130
V1U2361-BSD	75-15-0	Carbon disulfide	BSD	RPD	0	%	20
V1U2361-BSD	56-23-5	Carbon tetrachloride	BSD	REC	98	%	70-130
V1U2361-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V1U2361-BSD	108-90-7	Chlorobenzene	BSD	REC	107	%	70-130
V1U2361-BSD	108-90-7	Chlorobenzene	BSD	RPD	1	%	20
V1U2361-BSD	75-00-3	Chloroethane	BSD	REC	90	%	70-130
V1U2361-BSD	75-00-3	Chloroethane	BSD	RPD	2	%	20
V1U2361-BSD	67-66-3	Chloroform	BSD	REC	90	%	70-130
V1U2361-BSD	67-66-3	Chloroform	BSD	RPD	6	%	20
V1U2361-BSD	74-87-3	Chloromethane	BSD	REC	88	%	70-130
V1U2361-BSD	74-87-3	Chloromethane	BSD	RPD	0	%	20
V1U2361-BSD	95-49-8	o-Chlorotoluene	BSD	REC	112	%	70-130
V1U2361-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	5	%	20
V1U2361-BSD	106-43-4	p-Chlorotoluene	BSD	REC	107	%	70-130
V1U2361-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V1U2361-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	78	%	70-130
V1U2361-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	5	%	20
V1U2361-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	107	%	70-130
V1U2361-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V1U2361-BSD	124-48-1	Dibromochloromethane	BSD	REC	105	%	70-130
V1U2361-BSD	124-48-1	Dibromochloromethane	BSD	RPD	1	%	20
V1U2361-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	106	%	70-130
V1U2361-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1U2361-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	115	%	70-130
V1U2361-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	3	%	20
V1U2361-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	114	%	70-130
V1U2361-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V1U2361-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	103	%	70-130
V1U2361-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V1U2361-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	103	%	70-130
V1U2361-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	8	%	20
V1U2361-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	84	%	70-130
V1U2361-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	2	%	20
V1U2361-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	87	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1U2361-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	4	%	20
V1U2361-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	77	%	70-130
V1U2361-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	3	%	20
V1U2361-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	91	%	70-130
V1U2361-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	4	%	20
V1U2361-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	92	%	70-130
V1U2361-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	6	%	20
V1U2361-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	86	%	70-130
V1U2361-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	3	%	20
V1U2361-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	94	%	70-130
V1U2361-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	2	%	20
V1U2361-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	98	%	70-130
V1U2361-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	1	%	20
V1U2361-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	92	%	70-130
V1U2361-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	0	%	20
V1U2361-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	96	%	70-130
V1U2361-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	2	%	20
V1U2361-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	98	%	70-130
V1U2361-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V1U2361-BSD	123-91-1	1,4-Dioxane	BSD	REC	107	%	70-130
V1U2361-BSD	123-91-1	1,4-Dioxane	BSD	RPD	2	%	20
V1U2361-BSD	60-29-7	Ethyl Ether	BSD	REC	75	%	70-130
V1U2361-BSD	60-29-7	Ethyl Ether	BSD	RPD	4	%	20
V1U2361-BSD	100-41-4	Ethylbenzene	BSD	REC	101	%	70-130
V1U2361-BSD	100-41-4	Ethylbenzene	BSD	RPD	1	%	20
V1U2361-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	115	%	70-130
V1U2361-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	6	%	20
V1U2361-BSD	591-78-6	2-Hexanone	BSD	REC	85	%	70-130
V1U2361-BSD	591-78-6	2-Hexanone	BSD	RPD	3	%	20
V1U2361-BSD	98-82-8	Isopropylbenzene	BSD	REC	114	%	70-130
V1U2361-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V1U2361-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	117	%	70-130
V1U2361-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	4	%	20
V1U2361-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	83	%	70-130
V1U2361-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	2	%	20
V1U2361-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	86	%	70-130
V1U2361-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	3	%	20
V1U2361-BSD	74-95-3	Methylene bromide	BSD	REC	94	%	70-130
V1U2361-BSD	74-95-3	Methylene bromide	BSD	RPD	1	%	20
V1U2361-BSD	75-09-2	Methylene chloride	BSD	REC	86	%	70-130
V1U2361-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V1U2361-BSD	91-20-3	Naphthalene	BSD	REC	116	%	70-130
V1U2361-BSD	91-20-3	Naphthalene	BSD	RPD	2	%	20
V1U2361-BSD	103-65-1	n-Propylbenzene	BSD	REC	106	%	70-130
V1U2361-BSD	103-65-1	n-Propylbenzene	BSD	RPD	2	%	20

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1U2361-BSD	100-42-5	Styrene	BSD	REC	116	%	70-130
V1U2361-BSD	100-42-5	Styrene	BSD	RPD	2	%	20
V1U2361-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	91	%	70-130
V1U2361-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	3	%	20
V1U2361-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	83	%	70-130
V1U2361-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	3	%	20
V1U2361-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	111	%	70-130
V1U2361-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V1U2361-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	96	%	70-130
V1U2361-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	2	%	20
V1U2361-BSD	127-18-4	Tetrachloroethene	BSD	REC	111	%	70-130
V1U2361-BSD	127-18-4	Tetrachloroethene	BSD	RPD	4	%	20
V1U2361-BSD	109-99-9	Tetrahydrofuran	BSD	REC	89	%	70-130
V1U2361-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	2	%	20
V1U2361-BSD	108-88-3	Toluene	BSD	REC	101	%	70-130
V1U2361-BSD	108-88-3	Toluene	BSD	RPD	3	%	20
V1U2361-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	113	%	70-130
V1U2361-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	0	%	25
V1U2361-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	115	%	70-130
V1U2361-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	1	%	20
V1U2361-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	101	%	70-130
V1U2361-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	4	%	20
V1U2361-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	95	%	70-130
V1U2361-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	2	%	20
V1U2361-BSD	79-01-6	Trichloroethene	BSD	REC	104	%	70-130
V1U2361-BSD	79-01-6	Trichloroethene	BSD	RPD	5	%	20
V1U2361-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	87	%	70-130
V1U2361-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	5	%	20
V1U2361-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	111	%	70-130
V1U2361-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	2	%	20
V1U2361-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	117	%	70-130
V1U2361-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	4	%	20
V1U2361-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	116	%	70-130
V1U2361-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	5	%	20
V1U2361-BSD	75-01-4	Vinyl chloride	BSD	REC	78	%	70-130
V1U2361-BSD	75-01-4	Vinyl chloride	BSD	RPD	2	%	20
V1U2361-BSD		m,p-Xylene	BSD	REC	111	%	70-130
V1U2361-BSD		m,p-Xylene	BSD	RPD	2	%	20
V1U2361-BSD	95-47-6	o-Xylene	BSD	REC	112	%	70-130
V1U2361-BSD	95-47-6	o-Xylene	BSD	RPD	2	%	20
V1U2361-BSD	1330-20-7	Xylene (total)	BSD	REC	111	%	70-130
V1U2361-BSD	1330-20-7	Xylene (total)	BSD	RPD	2	%	20
V1U2361-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	98	%	70-130
V1U2361-BSD	2037-26-5	Toluene-D8	BSD	SURR	97	%	70-130
V1U2361-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	98	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1U2361-MB	1868-53-7	Dibromofluoromethane	MB	SURR	102	%	70-130
V1U2361-MB	2037-26-5	Toluene-D8	MB	SURR	106	%	70-130
V1U2361-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	106	%	70-130
JD78052-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	70-130
JD78052-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78052-3	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78052-3	2037-26-5	Toluene-D8	SAMP	SURR	107	%	70-130
JD78052-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	107	%	70-130
JD78052-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78052-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78052-5	2037-26-5	Toluene-D8	SAMP	SURR	106	%	70-130
JD78052-5	2037-26-5	Toluene-D8	SAMP	SURR	107	%	70-130
JD78052-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	70-130
JD78052-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78052-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	70-130
JD78052-8	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78052-8	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78052-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-14	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78052-14	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130
JD78052-14	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-15	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78052-15	2037-26-5	Toluene-D8	SAMP	SURR	106	%	70-130
JD78052-15	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	70-130
JD78052-18	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78052-18	2037-26-5	Toluene-D8	SAMP	SURR	106	%	70-130
JD78052-18	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	70-130
V2U2361	SW846 8260D						
V2U2361-BS	67-64-1	Acetone	BSP	REC	91	%	70-130
V2U2361-BS	71-43-2	Benzene	BSP	REC	96	%	70-130
V2U2361-BS	108-86-1	Bromobenzene	BSP	REC	106	%	70-130
V2U2361-BS	74-97-5	Bromochloromethane	BSP	REC	102	%	70-130
V2U2361-BS	75-27-4	Bromodichloromethane	BSP	REC	103	%	70-130
V2U2361-BS	75-25-2	Bromoform	BSP	REC	114	%	70-130
V2U2361-BS	74-83-9	Bromomethane	BSP	REC	85	%	70-130
V2U2361-BS	78-93-3	2-Butanone (MEK)	BSP	REC	82	%	70-130
V2U2361-BS	104-51-8	n-Butylbenzene	BSP	REC	113	%	70-130
V2U2361-BS	135-98-8	sec-Butylbenzene	BSP	REC	112	%	70-130
V2U2361-BS	98-06-6	tert-Butylbenzene	BSP	REC	119	%	70-130
V2U2361-BS	75-15-0	Carbon disulfide	BSP	REC	80	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2U2361-BS	56-23-5	Carbon tetrachloride	BSP	REC	100	%	70-130
V2U2361-BS	108-90-7	Chlorobenzene	BSP	REC	105	%	70-130
V2U2361-BS	75-00-3	Chloroethane	BSP	REC	97	%	70-130
V2U2361-BS	67-66-3	Chloroform	BSP	REC	94	%	70-130
V2U2361-BS	74-87-3	Chloromethane	BSP	REC	92	%	70-130
V2U2361-BS	95-49-8	o-Chlorotoluene	BSP	REC	113	%	70-130
V2U2361-BS	106-43-4	p-Chlorotoluene	BSP	REC	110	%	70-130
V2U2361-BS	108-20-3	Di-Isopropyl ether	BSP	REC	78	%	70-130
V2U2361-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	105	%	70-130
V2U2361-BS	124-48-1	Dibromochloromethane	BSP	REC	108	%	70-130
V2U2361-BS	106-93-4	1,2-Dibromoethane	BSP	REC	111	%	70-130
V2U2361-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	115	%	70-130
V2U2361-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	118 ^a	%	70-130
V2U2361-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	104	%	70-130
V2U2361-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	97	%	70-130
V2U2361-BS	75-34-3	1,1-Dichloroethane	BSP	REC	88	%	70-130
V2U2361-BS	107-06-2	1,2-Dichloroethane	BSP	REC	94	%	70-130
V2U2361-BS	75-35-4	1,1-Dichloroethene	BSP	REC	79	%	70-130
V2U2361-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	96	%	70-130
V2U2361-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	89	%	70-130
V2U2361-BS	78-87-5	1,2-Dichloropropane	BSP	REC	90	%	70-130
V2U2361-BS	142-28-9	1,3-Dichloropropane	BSP	REC	96	%	70-130
V2U2361-BS	594-20-7	2,2-Dichloropropane	BSP	REC	100	%	70-130
V2U2361-BS	563-58-6	1,1-Dichloropropene	BSP	REC	93	%	70-130
V2U2361-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	101	%	70-130
V2U2361-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	98	%	70-130
V2U2361-BS	123-91-1	1,4-Dioxane	BSP	REC	110	%	70-130
V2U2361-BS	60-29-7	Ethyl Ether	BSP	REC	81	%	70-130
V2U2361-BS	100-41-4	Ethylbenzene	BSP	REC	103	%	70-130
V2U2361-BS	87-68-3	Hexachlorobutadiene	BSP	REC	115	%	70-130
V2U2361-BS	591-78-6	2-Hexanone	BSP	REC	88	%	70-130
V2U2361-BS	98-82-8	Isopropylbenzene	BSP	REC	117	%	70-130
V2U2361-BS	99-87-6	p-Isopropyltoluene	BSP	REC	118	%	70-130
V2U2361-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	85	%	70-130
V2U2361-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	87	%	70-130
V2U2361-BS	74-95-3	Methylene bromide	BSP	REC	102	%	70-130
V2U2361-BS	75-09-2	Methylene chloride	BSP	REC	86	%	70-130
V2U2361-BS	91-20-3	Naphthalene	BSP	REC	111	%	70-130
V2U2361-BS	103-65-1	n-Propylbenzene	BSP	REC	107	%	70-130
V2U2361-BS	100-42-5	Styrene	BSP	REC	116	%	70-130
V2U2361-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	92	%	70-130
V2U2361-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	86	%	70-130
V2U2361-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	114	%	70-130
V2U2361-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	95	%	70-130
V2U2361-BS	127-18-4	Tetrachloroethene	BSP	REC	114	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2U2361-BS	109-99-9	Tetrahydrofuran	BSP	REC	91	%	70-130
V2U2361-BS	108-88-3	Toluene	BSP	REC	98	%	70-130
V2U2361-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	114	%	70-130
V2U2361-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	116	%	70-130
V2U2361-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	107	%	70-130
V2U2361-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	98	%	70-130
V2U2361-BS	79-01-6	Trichloroethene	BSP	REC	105	%	70-130
V2U2361-BS	75-69-4	Trichlorofluoromethane	BSP	REC	91	%	70-130
V2U2361-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	109	%	70-130
V2U2361-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	117	%	70-130
V2U2361-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	117	%	70-130
V2U2361-BS	75-01-4	Vinyl chloride	BSP	REC	82	%	70-130
V2U2361-BS		m,p-Xylene	BSP	REC	115	%	70-130
V2U2361-BS	95-47-6	o-Xylene	BSP	REC	117	%	70-130
V2U2361-BS	1330-20-7	Xylene (total)	BSP	REC	116	%	70-130
V2U2361-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	96	%	70-130
V2U2361-BS	2037-26-5	Toluene-D8	BSP	SURR	96	%	70-130
V2U2361-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	96	%	70-130
V2U2361-BSD	67-64-1	Acetone	BSD	REC	89	%	70-130
V2U2361-BSD	67-64-1	Acetone	BSD	RPD	2	%	20
V2U2361-BSD	71-43-2	Benzene	BSD	REC	93	%	70-130
V2U2361-BSD	71-43-2	Benzene	BSD	RPD	2	%	20
V2U2361-BSD	108-86-1	Bromobenzene	BSD	REC	108	%	70-130
V2U2361-BSD	108-86-1	Bromobenzene	BSD	RPD	2	%	20
V2U2361-BSD	74-97-5	Bromochloromethane	BSD	REC	103	%	70-130
V2U2361-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V2U2361-BSD	75-27-4	Bromodichloromethane	BSD	REC	101	%	70-130
V2U2361-BSD	75-27-4	Bromodichloromethane	BSD	RPD	2	%	20
V2U2361-BSD	75-25-2	Bromoform	BSD	REC	113	%	70-130
V2U2361-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20
V2U2361-BSD	74-83-9	Bromomethane	BSD	REC	88	%	70-130
V2U2361-BSD	74-83-9	Bromomethane	BSD	RPD	4	%	20
V2U2361-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	83	%	70-130
V2U2361-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	1	%	20
V2U2361-BSD	104-51-8	n-Butylbenzene	BSD	REC	113	%	70-130
V2U2361-BSD	104-51-8	n-Butylbenzene	BSD	RPD	0	%	20
V2U2361-BSD	135-98-8	sec-Butylbenzene	BSD	REC	113	%	70-130
V2U2361-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	0	%	20
V2U2361-BSD	98-06-6	tert-Butylbenzene	BSD	REC	117	%	70-130
V2U2361-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	1	%	20
V2U2361-BSD	75-15-0	Carbon disulfide	BSD	REC	79	%	70-130
V2U2361-BSD	75-15-0	Carbon disulfide	BSD	RPD	1	%	20
V2U2361-BSD	56-23-5	Carbon tetrachloride	BSD	REC	99	%	70-130
V2U2361-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	1	%	20
V2U2361-BSD	108-90-7	Chlorobenzene	BSD	REC	105	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2U2361-BSD	108-90-7	Chlorobenzene	BSD	RPD	0	%	20
V2U2361-BSD	75-00-3	Chloroethane	BSD	REC	90	%	70-130
V2U2361-BSD	75-00-3	Chloroethane	BSD	RPD	7	%	20
V2U2361-BSD	67-66-3	Chloroform	BSD	REC	91	%	70-130
V2U2361-BSD	67-66-3	Chloroform	BSD	RPD	3	%	20
V2U2361-BSD	74-87-3	Chloromethane	BSD	REC	90	%	70-130
V2U2361-BSD	74-87-3	Chloromethane	BSD	RPD	2	%	20
V2U2361-BSD	95-49-8	o-Chlorotoluene	BSD	REC	111	%	70-130
V2U2361-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	1	%	20
V2U2361-BSD	106-43-4	p-Chlorotoluene	BSD	REC	110	%	70-130
V2U2361-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	0	%	20
V2U2361-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	76	%	70-130
V2U2361-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	2	%	20
V2U2361-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	103	%	70-130
V2U2361-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V2U2361-BSD	124-48-1	Dibromochloromethane	BSD	REC	108	%	70-130
V2U2361-BSD	124-48-1	Dibromochloromethane	BSD	RPD	0	%	20
V2U2361-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	110	%	70-130
V2U2361-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V2U2361-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	116	%	70-130
V2U2361-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	1	%	20
V2U2361-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	117 ^a	%	70-130
V2U2361-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	0	%	20
V2U2361-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	103	%	70-130
V2U2361-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	1	%	20
V2U2361-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	96	%	70-130
V2U2361-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	1	%	20
V2U2361-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	85	%	70-130
V2U2361-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V2U2361-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	92	%	70-130
V2U2361-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	2	%	20
V2U2361-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	77	%	70-130
V2U2361-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	3	%	20
V2U2361-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	95	%	70-130
V2U2361-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V2U2361-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	89	%	70-130
V2U2361-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	0	%	20
V2U2361-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	88	%	70-130
V2U2361-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	2	%	20
V2U2361-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	95	%	70-130
V2U2361-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	1	%	20
V2U2361-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	97	%	70-130
V2U2361-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	3	%	20
V2U2361-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	90	%	70-130
V2U2361-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	3	%	20

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2U2361-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	99	%	70-130
V2U2361-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	2	%	20
V2U2361-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	97	%	70-130
V2U2361-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	0	%	20
V2U2361-BSD	123-91-1	1,4-Dioxane	BSD	REC	111	%	70-130
V2U2361-BSD	123-91-1	1,4-Dioxane	BSD	RPD	1	%	20
V2U2361-BSD	60-29-7	Ethyl Ether	BSD	REC	78	%	70-130
V2U2361-BSD	60-29-7	Ethyl Ether	BSD	RPD	3	%	20
V2U2361-BSD	100-41-4	Ethylbenzene	BSD	REC	102	%	70-130
V2U2361-BSD	100-41-4	Ethylbenzene	BSD	RPD	1	%	20
V2U2361-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	117	%	70-130
V2U2361-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	1	%	20
V2U2361-BSD	591-78-6	2-Hexanone	BSD	REC	87	%	70-130
V2U2361-BSD	591-78-6	2-Hexanone	BSD	RPD	2	%	20
V2U2361-BSD	98-82-8	Isopropylbenzene	BSD	REC	115	%	70-130
V2U2361-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V2U2361-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	117	%	70-130
V2U2361-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	1	%	20
V2U2361-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	84	%	70-130
V2U2361-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	1	%	20
V2U2361-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	85	%	70-130
V2U2361-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	3	%	20
V2U2361-BSD	74-95-3	Methylene bromide	BSD	REC	100	%	70-130
V2U2361-BSD	74-95-3	Methylene bromide	BSD	RPD	2	%	20
V2U2361-BSD	75-09-2	Methylene chloride	BSD	REC	88	%	70-130
V2U2361-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V2U2361-BSD	91-20-3	Naphthalene	BSD	REC	110	%	70-130
V2U2361-BSD	91-20-3	Naphthalene	BSD	RPD	1	%	20
V2U2361-BSD	103-65-1	n-Propylbenzene	BSD	REC	108	%	70-130
V2U2361-BSD	103-65-1	n-Propylbenzene	BSD	RPD	0	%	20
V2U2361-BSD	100-42-5	Styrene	BSD	REC	116	%	70-130
V2U2361-BSD	100-42-5	Styrene	BSD	RPD	0	%	20
V2U2361-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	90	%	70-130
V2U2361-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	3	%	20
V2U2361-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	84	%	70-130
V2U2361-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	1	%	20
V2U2361-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	112	%	70-130
V2U2361-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V2U2361-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	94	%	70-130
V2U2361-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	1	%	20
V2U2361-BSD	127-18-4	Tetrachloroethene	BSD	REC	112	%	70-130
V2U2361-BSD	127-18-4	Tetrachloroethene	BSD	RPD	2	%	20
V2U2361-BSD	109-99-9	Tetrahydrofuran	BSD	REC	89	%	70-130
V2U2361-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	2	%	20
V2U2361-BSD	108-88-3	Toluene	BSD	REC	96	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2U2361-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V2U2361-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	113	%	70-130
V2U2361-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	0	%	25
V2U2361-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	116	%	70-130
V2U2361-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	0	%	20
V2U2361-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	105	%	70-130
V2U2361-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	1	%	20
V2U2361-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	95	%	70-130
V2U2361-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V2U2361-BSD	79-01-6	Trichloroethene	BSD	REC	106	%	70-130
V2U2361-BSD	79-01-6	Trichloroethene	BSD	RPD	2	%	20
V2U2361-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	85	%	70-130
V2U2361-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	7	%	20
V2U2361-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	109	%	70-130
V2U2361-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	0	%	20
V2U2361-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	117	%	70-130
V2U2361-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	0	%	20
V2U2361-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	115	%	70-130
V2U2361-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	1	%	20
V2U2361-BSD	75-01-4	Vinyl chloride	BSD	REC	80	%	70-130
V2U2361-BSD	75-01-4	Vinyl chloride	BSD	RPD	3	%	20
V2U2361-BSD		m,p-Xylene	BSD	REC	112	%	70-130
V2U2361-BSD		m,p-Xylene	BSD	RPD	3	%	20
V2U2361-BSD	95-47-6	o-Xylene	BSD	REC	116	%	70-130
V2U2361-BSD	95-47-6	o-Xylene	BSD	RPD	1	%	20
V2U2361-BSD	1330-20-7	Xylene (total)	BSD	REC	113	%	70-130
V2U2361-BSD	1330-20-7	Xylene (total)	BSD	RPD	2	%	20
V2U2361-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	97	%	70-130
V2U2361-BSD	2037-26-5	Toluene-D8	BSD	SURR	96	%	70-130
V2U2361-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	96	%	70-130
V2U2361-MB	1868-53-7	Dibromofluoromethane	MB	SURR	102	%	70-130
V2U2361-MB	2037-26-5	Toluene-D8	MB	SURR	104	%	70-130
V2U2361-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	105	%	70-130
JD78052-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	70-130
JD78052-1	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130
JD78052-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	70-130
JD78052-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	100	%	70-130
JD78052-4	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130
JD78052-4	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78052-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	70-130
JD78052-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78052-6	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
JD78052-6	2037-26-5	Toluene-D8	SAMP	SURR	106	%	70-130
JD78052-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	108	%	70-130
JD78052-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78052-7	2037-26-5	Toluene-D8	SAMP	SURR	104	%	70-130
JD78052-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	104	%	70-130
JD78052-13	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78052-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-16	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78052-16	2037-26-5	Toluene-D8	SAMP	SURR	106	%	70-130
JD78052-16	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-17	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	70-130
JD78052-17	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78052-17	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130

V2V4085 SW846 8260D

V2V4085-BS	67-64-1	Acetone	BSP	REC	116	%	70-130
V2V4085-BS	71-43-2	Benzene	BSP	REC	105	%	70-130
V2V4085-BS	108-86-1	Bromobenzene	BSP	REC	91	%	70-130
V2V4085-BS	74-97-5	Bromochloromethane	BSP	REC	102	%	70-130
V2V4085-BS	75-27-4	Bromodichloromethane	BSP	REC	103	%	70-130
V2V4085-BS	75-25-2	Bromoform	BSP	REC	99	%	70-130
V2V4085-BS	74-83-9	Bromomethane	BSP	REC	96	%	70-130
V2V4085-BS	78-93-3	2-Butanone (MEK)	BSP	REC	116	%	70-130
V2V4085-BS	104-51-8	n-Butylbenzene	BSP	REC	101	%	70-130
V2V4085-BS	135-98-8	sec-Butylbenzene	BSP	REC	96	%	70-130
V2V4085-BS	98-06-6	tert-Butylbenzene	BSP	REC	93	%	70-130
V2V4085-BS	75-15-0	Carbon disulfide	BSP	REC	114	%	70-130
V2V4085-BS	56-23-5	Carbon tetrachloride	BSP	REC	106	%	70-130
V2V4085-BS	108-90-7	Chlorobenzene	BSP	REC	93	%	70-130
V2V4085-BS	75-00-3	Chloroethane	BSP	REC	124	%	70-130
V2V4085-BS	67-66-3	Chloroform	BSP	REC	101	%	70-130
V2V4085-BS	74-87-3	Chloromethane	BSP	REC	112	%	70-130
V2V4085-BS	95-49-8	o-Chlorotoluene	BSP	REC	94	%	70-130
V2V4085-BS	106-43-4	p-Chlorotoluene	BSP	REC	93	%	70-130
V2V4085-BS	108-20-3	Di-Isopropyl ether	BSP	REC	120	%	70-130
V2V4085-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	96	%	70-130
V2V4085-BS	124-48-1	Dibromochloromethane	BSP	REC	100	%	70-130
V2V4085-BS	106-93-4	1,2-Dibromoethane	BSP	REC	98	%	70-130
V2V4085-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	91	%	70-130
V2V4085-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	92	%	70-130
V2V4085-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	91	%	70-130
V2V4085-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	83	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4085-BS	75-34-3	1,1-Dichloroethane	BSP	REC	113	%	70-130
V2V4085-BS	107-06-2	1,2-Dichloroethane	BSP	REC	102	%	70-130
V2V4085-BS	75-35-4	1,1-Dichloroethene	BSP	REC	120	%	70-130
V2V4085-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	108	%	70-130
V2V4085-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	108	%	70-130
V2V4085-BS	78-87-5	1,2-Dichloropropane	BSP	REC	108	%	70-130
V2V4085-BS	142-28-9	1,3-Dichloropropane	BSP	REC	100	%	70-130
V2V4085-BS	594-20-7	2,2-Dichloropropane	BSP	REC	113	%	70-130
V2V4085-BS	563-58-6	1,1-Dichloropropene	BSP	REC	110	%	70-130
V2V4085-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	111	%	70-130
V2V4085-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	111	%	70-130
V2V4085-BS	123-91-1	1,4-Dioxane	BSP	REC	98	%	70-130
V2V4085-BS	60-29-7	Ethyl Ether	BSP	REC	117	%	70-130
V2V4085-BS	100-41-4	Ethylbenzene	BSP	REC	96	%	70-130
V2V4085-BS	87-68-3	Hexachlorobutadiene	BSP	REC	81	%	70-130
V2V4085-BS	591-78-6	2-Hexanone	BSP	REC	111	%	70-130
V2V4085-BS	98-82-8	Isopropylbenzene	BSP	REC	95	%	70-130
V2V4085-BS	99-87-6	p-Isopropyltoluene	BSP	REC	96	%	70-130
V2V4085-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	113	%	70-130
V2V4085-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	108	%	70-130
V2V4085-BS	74-95-3	Methylene bromide	BSP	REC	98	%	70-130
V2V4085-BS	75-09-2	Methylene chloride	BSP	REC	107	%	70-130
V2V4085-BS	91-20-3	Naphthalene	BSP	REC	91	%	70-130
V2V4085-BS	103-65-1	n-Propylbenzene	BSP	REC	98	%	70-130
V2V4085-BS	100-42-5	Styrene	BSP	REC	97	%	70-130
V2V4085-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	105	%	70-130
V2V4085-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	116	%	70-130
V2V4085-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	98	%	70-130
V2V4085-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	105	%	70-130
V2V4085-BS	127-18-4	Tetrachloroethene	BSP	REC	90	%	70-130
V2V4085-BS	109-99-9	Tetrahydrofuran	BSP	REC	113	%	70-130
V2V4085-BS	108-88-3	Toluene	BSP	REC	96	%	70-130
V2V4085-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	88	%	70-130
V2V4085-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	91	%	70-130
V2V4085-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	105	%	70-130
V2V4085-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	98	%	70-130
V2V4085-BS	79-01-6	Trichloroethene	BSP	REC	97	%	70-130
V2V4085-BS	75-69-4	Trichlorofluoromethane	BSP	REC	106	%	70-130
V2V4085-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	95	%	70-130
V2V4085-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	96	%	70-130
V2V4085-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	96	%	70-130
V2V4085-BS	75-01-4	Vinyl chloride	BSP	REC	113	%	70-130
V2V4085-BS		m,p-Xylene	BSP	REC	95	%	70-130
V2V4085-BS	95-47-6	o-Xylene	BSP	REC	96	%	70-130
V2V4085-BS	1330-20-7	Xylene (total)	BSP	REC	95	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4085-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	104	%	70-130
V2V4085-BS	2037-26-5	Toluene-D8	BSP	SURR	101	%	70-130
V2V4085-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	104	%	70-130
V2V4085-BSD	67-64-1	Acetone	BSD	REC	123	%	70-130
V2V4085-BSD	67-64-1	Acetone	BSD	RPD	6	%	20
V2V4085-BSD	71-43-2	Benzene	BSD	REC	102	%	70-130
V2V4085-BSD	71-43-2	Benzene	BSD	RPD	2	%	20
V2V4085-BSD	108-86-1	Bromobenzene	BSD	REC	90	%	70-130
V2V4085-BSD	108-86-1	Bromobenzene	BSD	RPD	1	%	20
V2V4085-BSD	74-97-5	Bromochloromethane	BSD	REC	100	%	70-130
V2V4085-BSD	74-97-5	Bromochloromethane	BSD	RPD	2	%	20
V2V4085-BSD	75-27-4	Bromodichloromethane	BSD	REC	101	%	70-130
V2V4085-BSD	75-27-4	Bromodichloromethane	BSD	RPD	3	%	20
V2V4085-BSD	75-25-2	Bromoform	BSD	REC	99	%	70-130
V2V4085-BSD	75-25-2	Bromoform	BSD	RPD	0	%	20
V2V4085-BSD	74-83-9	Bromomethane	BSD	REC	94	%	70-130
V2V4085-BSD	74-83-9	Bromomethane	BSD	RPD	3	%	20
V2V4085-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	119	%	70-130
V2V4085-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	2	%	20
V2V4085-BSD	104-51-8	n-Butylbenzene	BSD	REC	98	%	70-130
V2V4085-BSD	104-51-8	n-Butylbenzene	BSD	RPD	3	%	20
V2V4085-BSD	135-98-8	sec-Butylbenzene	BSD	REC	93	%	70-130
V2V4085-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	3	%	20
V2V4085-BSD	98-06-6	tert-Butylbenzene	BSD	REC	90	%	70-130
V2V4085-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V2V4085-BSD	75-15-0	Carbon disulfide	BSD	REC	112	%	70-130
V2V4085-BSD	75-15-0	Carbon disulfide	BSD	RPD	2	%	20
V2V4085-BSD	56-23-5	Carbon tetrachloride	BSD	REC	104	%	70-130
V2V4085-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	2	%	20
V2V4085-BSD	108-90-7	Chlorobenzene	BSD	REC	91	%	70-130
V2V4085-BSD	108-90-7	Chlorobenzene	BSD	RPD	2	%	20
V2V4085-BSD	75-00-3	Chloroethane	BSD	REC	119	%	70-130
V2V4085-BSD	75-00-3	Chloroethane	BSD	RPD	4	%	20
V2V4085-BSD	67-66-3	Chloroform	BSD	REC	99	%	70-130
V2V4085-BSD	67-66-3	Chloroform	BSD	RPD	2	%	20
V2V4085-BSD	74-87-3	Chloromethane	BSD	REC	106	%	70-130
V2V4085-BSD	74-87-3	Chloromethane	BSD	RPD	5	%	20
V2V4085-BSD	95-49-8	o-Chlorotoluene	BSD	REC	93	%	70-130
V2V4085-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	1	%	20
V2V4085-BSD	106-43-4	p-Chlorotoluene	BSD	REC	91	%	70-130
V2V4085-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V2V4085-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	117	%	70-130
V2V4085-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	3	%	20
V2V4085-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	97	%	70-130
V2V4085-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	1	%	20

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4085-BSD	124-48-1	Dibromochloromethane	BSD	REC	99	%	70-130
V2V4085-BSD	124-48-1	Dibromochloromethane	BSD	RPD	1	%	20
V2V4085-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	96	%	70-130
V2V4085-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V2V4085-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	89	%	70-130
V2V4085-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	2	%	20
V2V4085-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	90	%	70-130
V2V4085-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V2V4085-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	89	%	70-130
V2V4085-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	2	%	20
V2V4085-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	83	%	70-130
V2V4085-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	0	%	20
V2V4085-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	112	%	70-130
V2V4085-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	1	%	20
V2V4085-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	99	%	70-130
V2V4085-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	3	%	20
V2V4085-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	117	%	70-130
V2V4085-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V2V4085-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	106	%	70-130
V2V4085-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	3	%	20
V2V4085-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	106	%	70-130
V2V4085-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	2	%	20
V2V4085-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	106	%	70-130
V2V4085-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	2	%	20
V2V4085-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	98	%	70-130
V2V4085-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	2	%	20
V2V4085-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	110	%	70-130
V2V4085-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	3	%	20
V2V4085-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	107	%	70-130
V2V4085-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	4	%	20
V2V4085-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	109	%	70-130
V2V4085-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	2	%	20
V2V4085-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	109	%	70-130
V2V4085-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	2	%	20
V2V4085-BSD	123-91-1	1,4-Dioxane	BSD	REC	95	%	70-130
V2V4085-BSD	123-91-1	1,4-Dioxane	BSD	RPD	3	%	20
V2V4085-BSD	60-29-7	Ethyl Ether	BSD	REC	114	%	70-130
V2V4085-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V2V4085-BSD	100-41-4	Ethylbenzene	BSD	REC	95	%	70-130
V2V4085-BSD	100-41-4	Ethylbenzene	BSD	RPD	2	%	20
V2V4085-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	79	%	70-130
V2V4085-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	2	%	20
V2V4085-BSD	591-78-6	2-Hexanone	BSD	REC	114	%	70-130
V2V4085-BSD	591-78-6	2-Hexanone	BSD	RPD	3	%	20
V2V4085-BSD	98-82-8	Isopropylbenzene	BSD	REC	94	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4085-BSD	98-82-8	Isopropylbenzene	BSD	RPD	2	%	20
V2V4085-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	93	%	70-130
V2V4085-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	4	%	20
V2V4085-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	112	%	70-130
V2V4085-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	0	%	20
V2V4085-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	107	%	70-130
V2V4085-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	1	%	20
V2V4085-BSD	74-95-3	Methylene bromide	BSD	REC	98	%	70-130
V2V4085-BSD	74-95-3	Methylene bromide	BSD	RPD	1	%	20
V2V4085-BSD	75-09-2	Methylene chloride	BSD	REC	107	%	70-130
V2V4085-BSD	75-09-2	Methylene chloride	BSD	RPD	1	%	20
V2V4085-BSD	91-20-3	Naphthalene	BSD	REC	91	%	70-130
V2V4085-BSD	91-20-3	Naphthalene	BSD	RPD	1	%	20
V2V4085-BSD	103-65-1	n-Propylbenzene	BSD	REC	95	%	70-130
V2V4085-BSD	103-65-1	n-Propylbenzene	BSD	RPD	3	%	20
V2V4085-BSD	100-42-5	Styrene	BSD	REC	96	%	70-130
V2V4085-BSD	100-42-5	Styrene	BSD	RPD	1	%	20
V2V4085-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	104	%	70-130
V2V4085-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	1	%	20
V2V4085-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	114	%	70-130
V2V4085-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	2	%	20
V2V4085-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	97	%	70-130
V2V4085-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V2V4085-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	102	%	70-130
V2V4085-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	3	%	20
V2V4085-BSD	127-18-4	Tetrachloroethene	BSD	REC	89	%	70-130
V2V4085-BSD	127-18-4	Tetrachloroethene	BSD	RPD	1	%	20
V2V4085-BSD	109-99-9	Tetrahydrofuran	BSD	REC	112	%	70-130
V2V4085-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	1	%	20
V2V4085-BSD	108-88-3	Toluene	BSD	REC	94	%	70-130
V2V4085-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V2V4085-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	88	%	70-130
V2V4085-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	0	%	25
V2V4085-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	89	%	70-130
V2V4085-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	2	%	20
V2V4085-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	103	%	70-130
V2V4085-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	2	%	20
V2V4085-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V2V4085-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	2	%	20
V2V4085-BSD	79-01-6	Trichloroethene	BSD	REC	95	%	70-130
V2V4085-BSD	79-01-6	Trichloroethene	BSD	RPD	2	%	20
V2V4085-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	104	%	70-130
V2V4085-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	2	%	20
V2V4085-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	95	%	70-130
V2V4085-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	0	%	20

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4085-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	93	%	70-130
V2V4085-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	3	%	20
V2V4085-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	93	%	70-130
V2V4085-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	3	%	20
V2V4085-BSD	75-01-4	Vinyl chloride	BSD	REC	108	%	70-130
V2V4085-BSD	75-01-4	Vinyl chloride	BSD	RPD	5	%	20
V2V4085-BSD		m,p-Xylene	BSD	REC	93	%	70-130
V2V4085-BSD		m,p-Xylene	BSD	RPD	2	%	20
V2V4085-BSD	95-47-6	o-Xylene	BSD	REC	94	%	70-130
V2V4085-BSD	95-47-6	o-Xylene	BSD	RPD	2	%	20
V2V4085-BSD	1330-20-7	Xylene (total)	BSD	REC	93	%	70-130
V2V4085-BSD	1330-20-7	Xylene (total)	BSD	RPD	2	%	20
V2V4085-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	104	%	70-130
V2V4085-BSD	2037-26-5	Toluene-D8	BSD	SURR	100	%	70-130
V2V4085-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	104	%	70-130
V2V4085-MB	1868-53-7	Dibromofluoromethane	MB	SURR	105	%	70-130
V2V4085-MB	2037-26-5	Toluene-D8	MB	SURR	103	%	70-130
V2V4085-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	106	%	70-130
JD78052-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	105	%	70-130
JD78052-2	2037-26-5	Toluene-D8	SAMP	SURR	101	%	70-130
JD78052-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78052-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	108	%	70-130
JD78052-9	2037-26-5	Toluene-D8	SAMP	SURR	102	%	70-130
JD78052-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	108	%	70-130
JD78052-10	2037-26-5	Toluene-D8	SAMP	SURR	102	%	70-130
JD78052-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-11	1868-53-7	Dibromofluoromethane	SAMP	SURR	108	%	70-130
JD78052-11	2037-26-5	Toluene-D8	SAMP	SURR	102	%	70-130
JD78052-11	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78052-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	108	%	70-130
JD78052-12	2037-26-5	Toluene-D8	SAMP	SURR	103	%	70-130
JD78052-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	104	%	70-130
V4D5893	SW846 8260D						
V4D5893-BS	67-64-1	Acetone	BSP	REC	121	%	70-130
V4D5893-BS	71-43-2	Benzene	BSP	REC	97	%	70-130
V4D5893-BS	108-86-1	Bromobenzene	BSP	REC	92	%	70-130
V4D5893-BS	74-97-5	Bromochloromethane	BSP	REC	102	%	70-130
V4D5893-BS	75-27-4	Bromodichloromethane	BSP	REC	92	%	70-130
V4D5893-BS	75-25-2	Bromoform	BSP	REC	95	%	70-130
V4D5893-BS	74-83-9	Bromomethane	BSP	REC	112	%	70-130
V4D5893-BS	78-93-3	2-Butanone (MEK)	BSP	REC	111	%	70-130
V4D5893-BS	104-51-8	n-Butylbenzene	BSP	REC	105	%	70-130

* Sample used for QC is not from job JD78052

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QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5893-BS	135-98-8	sec-Butylbenzene	BSP	REC	90	%	70-130
V4D5893-BS	98-06-6	tert-Butylbenzene	BSP	REC	96	%	70-130
V4D5893-BS	75-15-0	Carbon disulfide	BSP	REC	113	%	70-130
V4D5893-BS	56-23-5	Carbon tetrachloride	BSP	REC	100	%	70-130
V4D5893-BS	108-90-7	Chlorobenzene	BSP	REC	96	%	70-130
V4D5893-BS	75-00-3	Chloroethane	BSP	REC	110	%	70-130
V4D5893-BS	67-66-3	Chloroform	BSP	REC	103	%	70-130
V4D5893-BS	74-87-3	Chloromethane	BSP	REC	104	%	70-130
V4D5893-BS	95-49-8	o-Chlorotoluene	BSP	REC	93	%	70-130
V4D5893-BS	106-43-4	p-Chlorotoluene	BSP	REC	90	%	70-130
V4D5893-BS	108-20-3	Di-Isopropyl ether	BSP	REC	88	%	70-130
V4D5893-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	108	%	70-130
V4D5893-BS	124-48-1	Dibromochloromethane	BSP	REC	94	%	70-130
V4D5893-BS	106-93-4	1,2-Dibromoethane	BSP	REC	94	%	70-130
V4D5893-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	104	%	70-130
V4D5893-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	95	%	70-130
V4D5893-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	96	%	70-130
V4D5893-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	94	%	70-130
V4D5893-BS	75-34-3	1,1-Dichloroethane	BSP	REC	100	%	70-130
V4D5893-BS	107-06-2	1,2-Dichloroethane	BSP	REC	84	%	70-130
V4D5893-BS	75-35-4	1,1-Dichloroethene	BSP	REC	111	%	70-130
V4D5893-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	106	%	70-130
V4D5893-BS	78-87-5	1,2-Dichloropropane	BSP	REC	96	%	70-130
V4D5893-BS	142-28-9	1,3-Dichloropropane	BSP	REC	90	%	70-130
V4D5893-BS	594-20-7	2,2-Dichloropropane	BSP	REC	96	%	70-130
V4D5893-BS	563-58-6	1,1-Dichloropropene	BSP	REC	101	%	70-130
V4D5893-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	96	%	70-130
V4D5893-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	90	%	70-130
V4D5893-BS	123-91-1	1,4-Dioxane	BSP	REC	95	%	70-130
V4D5893-BS	60-29-7	Ethyl Ether	BSP	REC	115	%	70-130
V4D5893-BS	100-41-4	Ethylbenzene	BSP	REC	93	%	70-130
V4D5893-BS	87-68-3	Hexachlorobutadiene	BSP	REC	116	%	70-130
V4D5893-BS	591-78-6	2-Hexanone	BSP	REC	90	%	70-130
V4D5893-BS	98-82-8	Isopropylbenzene	BSP	REC	94	%	70-130
V4D5893-BS	99-87-6	p-Isopropyltoluene	BSP	REC	94	%	70-130
V4D5893-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	100	%	70-130
V4D5893-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	91	%	70-130
V4D5893-BS	74-95-3	Methylene bromide	BSP	REC	95	%	70-130
V4D5893-BS	75-09-2	Methylene chloride	BSP	REC	97	%	70-130
V4D5893-BS	91-20-3	Naphthalene	BSP	REC	103	%	70-130
V4D5893-BS	103-65-1	n-Propylbenzene	BSP	REC	88	%	70-130
V4D5893-BS	100-42-5	Styrene	BSP	REC	94	%	70-130
V4D5893-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	96	%	70-130
V4D5893-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	98	%	70-130
V4D5893-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	95	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5893-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	88	%	70-130
V4D5893-BS	127-18-4	Tetrachloroethene	BSP	REC	97	%	70-130
V4D5893-BS	109-99-9	Tetrahydrofuran	BSP	REC	95	%	70-130
V4D5893-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V4D5893-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	103	%	70-130
V4D5893-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	109	%	70-130
V4D5893-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	99	%	70-130
V4D5893-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	91	%	70-130
V4D5893-BS	79-01-6	Trichloroethene	BSP	REC	100	%	70-130
V4D5893-BS	75-69-4	Trichlorofluoromethane	BSP	REC	113	%	70-130
V4D5893-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	90	%	70-130
V4D5893-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	95	%	70-130
V4D5893-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	92	%	70-130
V4D5893-BS	75-01-4	Vinyl chloride	BSP	REC	113	%	70-130
V4D5893-BS		m,p-Xylene	BSP	REC	94	%	70-130
V4D5893-BS	95-47-6	o-Xylene	BSP	REC	94	%	70-130
V4D5893-BS	1330-20-7	Xylene (total)	BSP	REC	94	%	70-130
V4D5893-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	104	%	70-130
V4D5893-BS	2037-26-5	Toluene-D8	BSP	SURR	96	%	70-130
V4D5893-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	90	%	70-130
V4D5893-BSD	67-64-1	Acetone	BSD	REC	139	%	70-130
V4D5893-BSD	67-64-1	Acetone	BSD	RPD	14	%	20
V4D5893-BSD	71-43-2	Benzene	BSD	REC	98	%	70-130
V4D5893-BSD	71-43-2	Benzene	BSD	RPD	1	%	20
V4D5893-BSD	108-86-1	Bromobenzene	BSD	REC	99	%	70-130
V4D5893-BSD	108-86-1	Bromobenzene	BSD	RPD	8	%	20
V4D5893-BSD	74-97-5	Bromochloromethane	BSD	REC	108	%	70-130
V4D5893-BSD	74-97-5	Bromochloromethane	BSD	RPD	5	%	20
V4D5893-BSD	75-27-4	Bromodichloromethane	BSD	REC	100	%	70-130
V4D5893-BSD	75-27-4	Bromodichloromethane	BSD	RPD	8	%	20
V4D5893-BSD	75-25-2	Bromoform	BSD	REC	97	%	70-130
V4D5893-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20
V4D5893-BSD	74-83-9	Bromomethane	BSD	REC	112	%	70-130
V4D5893-BSD	74-83-9	Bromomethane	BSD	RPD	0	%	20
V4D5893-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	126	%	70-130
V4D5893-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	12	%	20
V4D5893-BSD	104-51-8	n-Butylbenzene	BSD	REC	103	%	70-130
V4D5893-BSD	104-51-8	n-Butylbenzene	BSD	RPD	3	%	20
V4D5893-BSD	135-98-8	sec-Butylbenzene	BSD	REC	100	%	70-130
V4D5893-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	10	%	20
V4D5893-BSD	98-06-6	tert-Butylbenzene	BSD	REC	102	%	70-130
V4D5893-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	6	%	20
V4D5893-BSD	75-15-0	Carbon disulfide	BSD	REC	113	%	70-130
V4D5893-BSD	75-15-0	Carbon disulfide	BSD	RPD	0	%	20
V4D5893-BSD	56-23-5	Carbon tetrachloride	BSD	REC	111	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5893-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	10	%	20
V4D5893-BSD	108-90-7	Chlorobenzene	BSD	REC	98	%	70-130
V4D5893-BSD	108-90-7	Chlorobenzene	BSD	RPD	2	%	20
V4D5893-BSD	75-00-3	Chloroethane	BSD	REC	104	%	70-130
V4D5893-BSD	75-00-3	Chloroethane	BSD	RPD	5	%	20
V4D5893-BSD	67-66-3	Chloroform	BSD	REC	112	%	70-130
V4D5893-BSD	67-66-3	Chloroform	BSD	RPD	8	%	20
V4D5893-BSD	74-87-3	Chloromethane	BSD	REC	104	%	70-130
V4D5893-BSD	74-87-3	Chloromethane	BSD	RPD	1	%	20
V4D5893-BSD	95-49-8	o-Chlorotoluene	BSD	REC	99	%	70-130
V4D5893-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	5	%	20
V4D5893-BSD	106-43-4	p-Chlorotoluene	BSD	REC	94	%	70-130
V4D5893-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	4	%	20
V4D5893-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	95	%	70-130
V4D5893-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	7	%	20
V4D5893-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	105	%	70-130
V4D5893-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	3	%	20
V4D5893-BSD	124-48-1	Dibromochloromethane	BSD	REC	89	%	70-130
V4D5893-BSD	124-48-1	Dibromochloromethane	BSD	RPD	5	%	20
V4D5893-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	88	%	70-130
V4D5893-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	6	%	20
V4D5893-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	100	%	70-130
V4D5893-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	4	%	20
V4D5893-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	98	%	70-130
V4D5893-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	3	%	20
V4D5893-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	100	%	70-130
V4D5893-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V4D5893-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	101	%	70-130
V4D5893-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	7	%	20
V4D5893-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	106	%	70-130
V4D5893-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	5	%	20
V4D5893-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	95	%	70-130
V4D5893-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	12 ^a	%	20
V4D5893-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	113	%	70-130
V4D5893-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V4D5893-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	109	%	70-130
V4D5893-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	2	%	20
V4D5893-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	103	%	70-130
V4D5893-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	7	%	20
V4D5893-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	95	%	70-130
V4D5893-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	5	%	20
V4D5893-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	106	%	70-130
V4D5893-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	10	%	20
V4D5893-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	109	%	70-130
V4D5893-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	7	%	20

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5893-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	101	%	70-130
V4D5893-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	6	%	20
V4D5893-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	94	%	70-130
V4D5893-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	5	%	20
V4D5893-BSD	123-91-1	1,4-Dioxane	BSD	REC	98	%	70-130
V4D5893-BSD	123-91-1	1,4-Dioxane	BSD	RPD	3	%	20
V4D5893-BSD	60-29-7	Ethyl Ether	BSD	REC	114	%	70-130
V4D5893-BSD	60-29-7	Ethyl Ether	BSD	RPD	0	%	20
V4D5893-BSD	100-41-4	Ethylbenzene	BSD	REC	97	%	70-130
V4D5893-BSD	100-41-4	Ethylbenzene	BSD	RPD	4	%	20
V4D5893-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	113	%	70-130
V4D5893-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	2	%	20
V4D5893-BSD	591-78-6	2-Hexanone	BSD	REC	102	%	70-130
V4D5893-BSD	591-78-6	2-Hexanone	BSD	RPD	12	%	20
V4D5893-BSD	98-82-8	Isopropylbenzene	BSD	REC	98	%	70-130
V4D5893-BSD	98-82-8	Isopropylbenzene	BSD	RPD	5	%	20
V4D5893-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	100	%	70-130
V4D5893-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	6	%	20
V4D5893-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	105	%	70-130
V4D5893-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	5	%	20
V4D5893-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	100	%	70-130
V4D5893-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	10	%	20
V4D5893-BSD	74-95-3	Methylene bromide	BSD	REC	102	%	70-130
V4D5893-BSD	74-95-3	Methylene bromide	BSD	RPD	7	%	20
V4D5893-BSD	75-09-2	Methylene chloride	BSD	REC	98	%	70-130
V4D5893-BSD	75-09-2	Methylene chloride	BSD	RPD	1	%	20
V4D5893-BSD	91-20-3	Naphthalene	BSD	REC	99	%	70-130
V4D5893-BSD	91-20-3	Naphthalene	BSD	RPD	4	%	20
V4D5893-BSD	103-65-1	n-Propylbenzene	BSD	REC	99	%	70-130
V4D5893-BSD	103-65-1	n-Propylbenzene	BSD	RPD	12 ^a	%	20
V4D5893-BSD	100-42-5	Styrene	BSD	REC	98	%	70-130
V4D5893-BSD	100-42-5	Styrene	BSD	RPD	4	%	20
V4D5893-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	99	%	70-130
V4D5893-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	3	%	20
V4D5893-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	103	%	70-130
V4D5893-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	5	%	20
V4D5893-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	98	%	70-130
V4D5893-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	3	%	20
V4D5893-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	100	%	70-130
V4D5893-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	13 ^a	%	20
V4D5893-BSD	127-18-4	Tetrachloroethene	BSD	REC	99	%	70-130
V4D5893-BSD	127-18-4	Tetrachloroethene	BSD	RPD	2	%	20
V4D5893-BSD	109-99-9	Tetrahydrofuran	BSD	REC	100	%	70-130
V4D5893-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	5	%	20
V4D5893-BSD	108-88-3	Toluene	BSD	REC	95	%	70-130

* Sample used for QC is not from job JD78052

QC Evaluation: MA MCP Limits

Job Number: JD78052
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/01/23 thru 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V4D5893-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V4D5893-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	100	%	70-130
V4D5893-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	3	%	25
V4D5893-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	105	%	70-130
V4D5893-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	4	%	20
V4D5893-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	109	%	70-130
V4D5893-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	10	%	20
V4D5893-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	94	%	70-130
V4D5893-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
V4D5893-BSD	79-01-6	Trichloroethene	BSD	REC	104	%	70-130
V4D5893-BSD	79-01-6	Trichloroethene	BSD	RPD	5	%	20
V4D5893-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	125	%	70-130
V4D5893-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	10	%	20
V4D5893-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	102	%	70-130
V4D5893-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	13 ^a	%	20
V4D5893-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	97	%	70-130
V4D5893-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	2	%	20
V4D5893-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	97	%	70-130
V4D5893-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	5	%	20
V4D5893-BSD	75-01-4	Vinyl chloride	BSD	REC	107	%	70-130
V4D5893-BSD	75-01-4	Vinyl chloride	BSD	RPD	6	%	20
V4D5893-BSD		m,p-Xylene	BSD	REC	97	%	70-130
V4D5893-BSD		m,p-Xylene	BSD	RPD	3	%	20
V4D5893-BSD	95-47-6	o-Xylene	BSD	REC	99	%	70-130
V4D5893-BSD	95-47-6	o-Xylene	BSD	RPD	5	%	20
V4D5893-BSD	1330-20-7	Xylene (total)	BSD	REC	97	%	70-130
V4D5893-BSD	1330-20-7	Xylene (total)	BSD	RPD	3	%	20
V4D5893-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	109	%	70-130
V4D5893-BSD	2037-26-5	Toluene-D8	BSD	SURR	97	%	70-130
V4D5893-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	99	%	70-130
V4D5893-MB	1868-53-7	Dibromofluoromethane	MB	SURR	109	%	70-130
V4D5893-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V4D5893-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	100	%	70-130
JD78052-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	110	%	70-130
JD78052-7	2037-26-5	Toluene-D8	SAMP	SURR	95	%	70-130
JD78052-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	100	%	70-130

(a) Outside in house control limits, but meets MCP criteria.

* Sample used for QC is not from job JD78052

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4085-MB	2V102615.D	1	12/06/23	LD	n/a	n/a	V2V4085

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-2, JD78052-9, JD78052-10, JD78052-11, JD78052-12

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4085-MB	2V102615.D	1	12/06/23	LD	n/a	n/a	V2V4085

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-2, JD78052-9, JD78052-10, JD78052-11, JD78052-12

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4085-MB	2V102615.D	1	12/06/23	LD	n/a	n/a	V2V4085

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-2, JD78052-9, JD78052-10, JD78052-11, JD78052-12

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	105%	80-120%
17060-07-0	1,2-Dichloroethane-D4	107%	80-120%
2037-26-5	Toluene-D8	103%	80-120%
460-00-4	4-Bromofluorobenzene	106%	82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

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Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2U2361-MB	2U62023.D	1	12/07/23	LD	n/a	n/a	V2U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-1, JD78052-4, JD78052-6, JD78052-7, JD78052-13, JD78052-16, JD78052-17

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2U2361-MB	2U62023.D	1	12/07/23	LD	n/a	n/a	V2U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-1, JD78052-4, JD78052-6, JD78052-7, JD78052-13, JD78052-16, JD78052-17

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/1	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/1	
123-91-1	1,4-Dioxane	ND	130	ug/1	
60-29-7	Ethyl Ether	ND	2.0	ug/1	
100-41-4	Ethylbenzene	ND	1.0	ug/1	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/1	
591-78-6	2-Hexanone	ND	5.0	ug/1	
98-82-8	Isopropylbenzene	ND	1.0	ug/1	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/1	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/1	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/1	
74-95-3	Methylene bromide	ND	1.0	ug/1	
75-09-2	Methylene chloride	ND	2.0	ug/1	
91-20-3	Naphthalene	ND	5.0	ug/1	
103-65-1	n-Propylbenzene	ND	2.0	ug/1	
100-42-5	Styrene	ND	1.0	ug/1	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/1	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/1	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/1	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/1	
127-18-4	Tetrachloroethene	ND	1.0	ug/1	
109-99-9	Tetrahydrofuran	ND	10	ug/1	
108-88-3	Toluene	ND	1.0	ug/1	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/1	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/1	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/1	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/1	
79-01-6	Trichloroethene	ND	1.0	ug/1	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/1	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/1	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/1	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/1	
75-01-4	Vinyl chloride	ND	1.0	ug/1	
	m,p-Xylene	ND	1.0	ug/1	
95-47-6	o-Xylene	ND	1.0	ug/1	
1330-20-7	Xylene (total)	ND	1.0	ug/1	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2U2361-MB	2U62023.D	1	12/07/23	LD	n/a	n/a	V2U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-1, JD78052-4, JD78052-6, JD78052-7, JD78052-13, JD78052-16, JD78052-17

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	102% 80-120%
17060-07-0	1,2-Dichloroethane-D4	105% 80-120%
2037-26-5	Toluene-D8	104% 80-120%
460-00-4	4-Bromofluorobenzene	105% 82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1U2361-MB	1U62024.D	1	12/07/23	LD	n/a	n/a	V1U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-3, JD78052-5, JD78052-8, JD78052-14, JD78052-15, JD78052-18

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1U2361-MB	1U62024.D	1	12/07/23	LD	n/a	n/a	V1U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-3, JD78052-5, JD78052-8, JD78052-14, JD78052-15, JD78052-18

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1U2361-MB	1U62024.D	1	12/07/23	LD	n/a	n/a	V1U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-3, JD78052-5, JD78052-8, JD78052-14, JD78052-15, JD78052-18

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	102% 80-120%
17060-07-0	1,2-Dichloroethane-D4	107% 80-120%
2037-26-5	Toluene-D8	106% 80-120%
460-00-4	4-Bromofluorobenzene	106% 82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5893-MB	4D133221.D	1	12/08/23	NW	n/a	n/a	V4D5893

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-7

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5893-MB	4D133221.D	1	12/08/23	NW	n/a	n/a	V4D5893

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-7

CAS No.	Compound	Result	RL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	0.53	1.0	ug/l	J
120-82-1	1,2,4-Trichlorobenzene	0.50	1.0	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5893-MB	4D133221.D	1	12/08/23	NW	n/a	n/a	V4D5893

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-7

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	109%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	100%	82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	system artifact	4.27	5.6	ug/l	J
	Total TIC, Volatile		0	ug/l	

6.1.4
6

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4085-BS	2V102612.D	1	12/06/23	LD	n/a	n/a	V2V4085
V2V4085-BSD	2V102613.D	1	12/06/23	LD	n/a	n/a	V2V4085

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-2, JD78052-9, JD78052-10, JD78052-11, JD78052-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	231	116	245	123	6	27-175/31
71-43-2	Benzene	50	52.4	105	51.2	102	2	80-115/11
108-86-1	Bromobenzene	50	45.7	91	45.2	90	1	79-119/11
74-97-5	Bromochloromethane	50	51.2	102	50.2	100	2	83-122/10
75-27-4	Bromodichloromethane	50	51.7	103	50.4	101	3	82-119/12
75-25-2	Bromoform	50	49.6	99	49.7	99	0	77-135/11
74-83-9	Bromomethane	50	48.1	96	46.9	94	3	40-162/23
78-93-3	2-Butanone (MEK)	200	232	116	237	119	2	61-150/16
104-51-8	n-Butylbenzene	50	50.4	101	48.8	98	3	77-124/12
135-98-8	sec-Butylbenzene	50	48.0	96	46.7	93	3	75-121/12
98-06-6	tert-Butylbenzene	50	46.4	93	45.1	90	3	74-120/11
75-15-0	Carbon disulfide	50	57.1	114	56.2	112	2	64-130/13
56-23-5	Carbon tetrachloride	50	53.0	106	51.8	104	2	75-127/11
108-90-7	Chlorobenzene	50	46.3	93	45.5	91	2	80-115/10
75-00-3	Chloroethane	50	61.9	124	59.6	119	4	56-144/14
67-66-3	Chloroform	50	50.6	101	49.5	99	2	75-116/10
74-87-3	Chloromethane	50	55.8	112	53.2	106	5	41-153/14
95-49-8	o-Chlorotoluene	50	47.2	94	46.5	93	1	79-119/11
106-43-4	p-Chlorotoluene	50	46.5	93	45.4	91	2	77-117/11
108-20-3	Di-Isopropyl ether	50	60.1	120	58.6	117	3	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	48.0	96	48.6	97	1	69-134/11
124-48-1	Dibromochloromethane	50	49.9	100	49.4	99	1	81-123/11
106-93-4	1,2-Dibromoethane	50	48.8	98	48.1	96	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	45.5	91	44.7	89	2	81-117/10
541-73-1	1,3-Dichlorobenzene	50	45.8	92	44.8	90	2	81-115/10
106-46-7	1,4-Dichlorobenzene	50	45.5	91	44.4	89	2	80-114/10
75-71-8	Dichlorodifluoromethane	50	41.3	83	41.3	83	0	43-152/16
75-34-3	1,1-Dichloroethane	50	56.6	113	55.9	112	1	75-125/11
107-06-2	1,2-Dichloroethane	50	51.1	102	49.7	99	3	73-117/10
75-35-4	1,1-Dichloroethene	50	60.1	120	58.7	117	2	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	54.2	108	52.8	106	3	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	53.8	108	52.8	106	2	77-121/12
78-87-5	1,2-Dichloropropane	50	54.2	108	53.2	106	2	79-121/10
142-28-9	1,3-Dichloropropane	50	50.0	100	49.2	98	2	81-117/11
594-20-7	2,2-Dichloropropane	50	56.7	113	55.1	110	3	70-131/12
563-58-6	1,1-Dichloropropene	50	55.2	110	53.3	107	4	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4085-BS	2V102612.D	1	12/06/23	LD	n/a	n/a	V2V4085
V2V4085-BSD	2V102613.D	1	12/06/23	LD	n/a	n/a	V2V4085

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-2, JD78052-9, JD78052-10, JD78052-11, JD78052-12

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	55.5	111	54.5	109	2	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	55.4	111	54.4	109	2	83-122/12
123-91-1	1,4-Dioxane	1250	1230	98	1190	95	3	64-150/20
60-29-7	Ethyl Ether	50	58.4	117	57.1	114	2	74-132/11
100-41-4	Ethylbenzene	50	48.1	96	47.3	95	2	78-116/10
87-68-3	Hexachlorobutadiene	50	40.5	81	39.7	79	2	55-136/14
591-78-6	2-Hexanone	200	221	111	228	114	3	66-136/14
98-82-8	Isopropylbenzene	50	47.6	95	46.8	94	2	78-121/11
99-87-6	p-Isopropyltoluene	50	48.2	96	46.5	93	4	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	56.3	113	56.2	112	0	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	216	108	214	107	1	73-134/13
74-95-3	Methylene bromide	50	49.2	98	48.8	98	1	82-117/10
75-09-2	Methylene chloride	50	53.6	107	53.3	107	1	73-123/11
91-20-3	Naphthalene	50	45.7	91	45.4	91	1	64-136/13
103-65-1	n-Propylbenzene	50	49.2	98	47.7	95	3	75-121/11
100-42-5	Styrene	50	48.6	97	47.9	96	1	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	52.4	105	51.9	104	1	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	57.9	116	56.9	114	2	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	49.1	98	48.5	97	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	52.3	105	51.0	102	3	73-126/12
127-18-4	Tetrachloroethene	50	44.8	90	44.5	89	1	73-119/12
109-99-9	Tetrahydrofuran	50	56.6	113	55.8	112	1	63-133/11
108-88-3	Toluene	50	47.8	96	46.9	94	2	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	44.0	88	43.8	88	0	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	45.4	91	44.5	89	2	68-135/12
71-55-6	1,1,1-Trichloroethane	50	52.4	105	51.4	103	2	76-124/11
79-00-5	1,1,2-Trichloroethane	50	49.2	98	48.2	96	2	83-117/11
79-01-6	Trichloroethene	50	48.4	97	47.3	95	2	80-118/11
75-69-4	Trichlorofluoromethane	50	53.1	106	51.9	104	2	67-134/13
96-18-4	1,2,3-Trichloropropane	50	47.5	95	47.5	95	0	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	47.9	96	46.6	93	3	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	47.8	96	46.6	93	3	77-120/11
75-01-4	Vinyl chloride	50	56.6	113	54.1	108	5	52-146/15
	m,p-Xylene	100	94.6	95	92.7	93	2	79-119/10
95-47-6	o-Xylene	50	47.8	96	46.8	94	2	81-119/10
1330-20-7	Xylene (total)	150	142	95	139	93	2	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4085-BS	2V102612.D	1	12/06/23	LD	n/a	n/a	V2V4085
V2V4085-BSD	2V102613.D	1	12/06/23	LD	n/a	n/a	V2V4085

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-2, JD78052-9, JD78052-10, JD78052-11, JD78052-12

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	104%	104%	80-120%
17060-07-0	1,2-Dichloroethane-D4	104%	104%	80-120%
2037-26-5	Toluene-D8	101%	100%	80-120%
460-00-4	4-Bromofluorobenzene	104%	104%	82-114%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1U2361-BS	1U62017.D	1	12/07/23	LD	n/a	n/a	V1U2361
V1U2361-BSD	1U62019.D	1	12/07/23	LD	n/a	n/a	V1U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-3, JD78052-5, JD78052-8, JD78052-14, JD78052-15, JD78052-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	151	76	142	71	6	27-175/31
71-43-2	Benzene	50	44.1	88	45.3	91	3	80-115/11
108-86-1	Bromobenzene	50	55.6	111	57.1	114	3	79-119/11
74-97-5	Bromochloromethane	50	48.8	98	49.4	99	1	83-122/10
75-27-4	Bromodichloromethane	50	48.1	96	47.6	95	1	82-119/12
75-25-2	Bromoform	50	54.1	108	54.6	109	1	77-135/11
74-83-9	Bromomethane	50	48.0	96	46.4	93	3	40-162/23
78-93-3	2-Butanone (MEK)	200	171	86	165	83	4	61-150/16
104-51-8	n-Butylbenzene	50	54.3	109	55.5	111	2	77-124/12
135-98-8	sec-Butylbenzene	50	54.5	109	57.4	115	5	75-121/12
98-06-6	tert-Butylbenzene	50	56.6	113	59.3	119	5	74-120/11
75-15-0	Carbon disulfide	50	39.6	79	39.7	79	0	64-130/13
56-23-5	Carbon tetrachloride	50	46.5	93	48.8	98	5	75-127/11
108-90-7	Chlorobenzene	50	52.8	106	53.3	107	1	80-115/10
75-00-3	Chloroethane	50	46.1	92	45.2	90	2	56-144/14
67-66-3	Chloroform	50	47.8	96	44.8	90	6	75-116/10
74-87-3	Chloromethane	50	44.2	88	44.0	88	0	41-153/14
95-49-8	o-Chlorotoluene	50	53.6	107	56.2	112	5	79-119/11
106-43-4	p-Chlorotoluene	50	52.6	105	53.6	107	2	77-117/11
108-20-3	Di-Isopropyl ether	50	41.4	83	39.2	78	5	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	52.5	105	53.7	107	2	69-134/11
124-48-1	Dibromochloromethane	50	51.9	104	52.3	105	1	81-123/11
106-93-4	1,2-Dibromoethane	50	53.5	107	53.1	106	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	55.7	111	57.3	115	3	81-117/10
541-73-1	1,3-Dichlorobenzene	50	55.6	111	57.0	114	2	81-115/10
106-46-7	1,4-Dichlorobenzene	50	50.1	100	51.5	103	3	80-114/10
75-71-8	Dichlorodifluoromethane	50	47.4	95	51.4	103	8	43-152/16
75-34-3	1,1-Dichloroethane	50	42.9	86	42.0	84	2	75-125/11
107-06-2	1,2-Dichloroethane	50	44.9	90	43.3	87	4	73-117/10
75-35-4	1,1-Dichloroethene	50	39.7	79	38.6	77	3	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	43.7	87	45.5	91	4	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	43.5	87	46.2	92	6	77-121/12
78-87-5	1,2-Dichloropropane	50	44.6	89	43.1	86	3	79-121/10
142-28-9	1,3-Dichloropropane	50	47.9	96	47.0	94	2	81-117/11
594-20-7	2,2-Dichloropropane	50	48.2	96	48.8	98	1	70-131/12
563-58-6	1,1-Dichloropropene	50	45.8	92	45.9	92	0	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1U2361-BS	1U62017.D	1	12/07/23	LD	n/a	n/a	V1U2361
V1U2361-BSD	1U62019.D	1	12/07/23	LD	n/a	n/a	V1U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-3, JD78052-5, JD78052-8, JD78052-14, JD78052-15, JD78052-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	48.9	98	48.0	96	2	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	49.6	99	49.0	98	1	83-122/12
123-91-1	1,4-Dioxane	1250	1370	110	1340	107	2	64-150/20
60-29-7	Ethyl Ether	50	38.9	78	37.5	75	4	74-132/11
100-41-4	Ethylbenzene	50	50.2	100	50.7	101	1	78-116/10
87-68-3	Hexachlorobutadiene	50	53.7	107	57.3	115	6	55-136/14
591-78-6	2-Hexanone	200	174	87	169	85	3	66-136/14
98-82-8	Isopropylbenzene	50	55.9	112	57.2	114	2	78-121/11
99-87-6	p-Isopropyltoluene	50	56.6	113	58.7	117	4	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	42.3	85	41.3	83	2	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	177	89	172	86	3	73-134/13
74-95-3	Methylene bromide	50	47.3	95	47.0	94	1	82-117/10
75-09-2	Methylene chloride	50	42.3	85	43.2	86	2	73-123/11
91-20-3	Naphthalene	50	56.7	113	57.9	116	2	64-136/13
103-65-1	n-Propylbenzene	50	51.9	104	53.2	106	2	75-121/11
100-42-5	Styrene	50	56.8	114	58.0	116	2	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	47.3	95	45.7	91	3	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	42.6	85	41.5	83	3	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	55.3	111	55.7	111	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	49.3	99	48.1	96	2	73-126/12
127-18-4	Tetrachloroethene	50	53.5	107	55.7	111	4	73-119/12
109-99-9	Tetrahydrofuran	50	45.5	91	44.6	89	2	63-133/11
108-88-3	Toluene	50	48.9	98	50.6	101	3	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	56.5	113	56.7	113	0	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	56.7	113	57.4	115	1	68-135/12
71-55-6	1,1,1-Trichloroethane	50	48.6	97	50.6	101	4	76-124/11
79-00-5	1,1,2-Trichloroethane	50	48.1	96	47.3	95	2	83-117/11
79-01-6	Trichloroethene	50	49.7	99	52.1	104	5	80-118/11
75-69-4	Trichlorofluoromethane	50	45.6	91	43.5	87	5	67-134/13
96-18-4	1,2,3-Trichloropropane	50	54.4	109	55.5	111	2	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	55.9	112	58.4	117	4	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	55.5	111	58.1	116	5	77-120/11
75-01-4	Vinyl chloride	50	39.7	79	38.9	78	2	52-146/15
	m,p-Xylene	100	109	109	111	111	2	79-119/10
95-47-6	o-Xylene	50	55.2	110	56.1	112	2	81-119/10
1330-20-7	Xylene (total)	150	164	109	167	111	2	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1U2361-BS	1U62017.D	1	12/07/23	LD	n/a	n/a	V1U2361
V1U2361-BSD	1U62019.D	1	12/07/23	LD	n/a	n/a	V1U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-3, JD78052-5, JD78052-8, JD78052-14, JD78052-15, JD78052-18

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	95%	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	93%	80-120%
2037-26-5	Toluene-D8	97%	97%	80-120%
460-00-4	4-Bromofluorobenzene	97%	98%	82-114%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2U2361-BS	2U62018.D	1	12/07/23	LD	n/a	n/a	V2U2361
V2U2361-BSD	2U62020.D	1	12/07/23	LD	n/a	n/a	V2U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-1, JD78052-4, JD78052-6, JD78052-7, JD78052-13, JD78052-16, JD78052-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	181	91	177	89	2	27-175/31
71-43-2	Benzene	50	47.8	96	46.7	93	2	80-115/11
108-86-1	Bromobenzene	50	53.1	106	54.0	108	2	79-119/11
74-97-5	Bromochloromethane	50	50.8	102	51.3	103	1	83-122/10
75-27-4	Bromodichloromethane	50	51.5	103	50.6	101	2	82-119/12
75-25-2	Bromoform	50	57.0	114	56.6	113	1	77-135/11
74-83-9	Bromomethane	50	42.4	85	44.0	88	4	40-162/23
78-93-3	2-Butanone (MEK)	200	164	82	166	83	1	61-150/16
104-51-8	n-Butylbenzene	50	56.5	113	56.3	113	0	77-124/12
135-98-8	sec-Butylbenzene	50	56.1	112	56.3	113	0	75-121/12
98-06-6	tert-Butylbenzene	50	59.4	119	58.7	117	1	74-120/11
75-15-0	Carbon disulfide	50	40.1	80	39.7	79	1	64-130/13
56-23-5	Carbon tetrachloride	50	50.0	100	49.6	99	1	75-127/11
108-90-7	Chlorobenzene	50	52.4	105	52.3	105	0	80-115/10
75-00-3	Chloroethane	50	48.5	97	45.2	90	7	56-144/14
67-66-3	Chloroform	50	46.9	94	45.4	91	3	75-116/10
74-87-3	Chloromethane	50	45.9	92	45.0	90	2	41-153/14
95-49-8	o-Chlorotoluene	50	56.5	113	55.7	111	1	79-119/11
106-43-4	p-Chlorotoluene	50	54.9	110	54.8	110	0	77-117/11
108-20-3	Di-Isopropyl ether	50	38.8	78	38.2	76	2	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	52.4	105	51.4	103	2	69-134/11
124-48-1	Dibromochloromethane	50	54.2	108	54.0	108	0	81-123/11
106-93-4	1,2-Dibromoethane	50	55.3	111	55.0	110	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	57.5	115	58.1	116	1	81-117/10
541-73-1	1,3-Dichlorobenzene	50	58.9	118* a	58.7	117* a	0	81-115/10
106-46-7	1,4-Dichlorobenzene	50	51.8	104	51.4	103	1	80-114/10
75-71-8	Dichlorodifluoromethane	50	48.4	97	48.0	96	1	43-152/16
75-34-3	1,1-Dichloroethane	50	43.9	88	42.5	85	3	75-125/11
107-06-2	1,2-Dichloroethane	50	46.8	94	45.9	92	2	73-117/10
75-35-4	1,1-Dichloroethene	50	39.5	79	38.4	77	3	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	48.2	96	47.4	95	2	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	44.3	89	44.5	89	0	77-121/12
78-87-5	1,2-Dichloropropane	50	44.8	90	43.9	88	2	79-121/10
142-28-9	1,3-Dichloropropane	50	48.0	96	47.3	95	1	81-117/11
594-20-7	2,2-Dichloropropane	50	50.0	100	48.3	97	3	70-131/12
563-58-6	1,1-Dichloropropene	50	46.5	93	45.2	90	3	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2U2361-BS	2U62018.D	1	12/07/23	LD	n/a	n/a	V2U2361
V2U2361-BSD	2U62020.D	1	12/07/23	LD	n/a	n/a	V2U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-1, JD78052-4, JD78052-6, JD78052-7, JD78052-13, JD78052-16, JD78052-17

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	50.5	101	49.3	99	2	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	48.9	98	48.7	97	0	83-122/12
123-91-1	1,4-Dioxane	1250	1380	110	1390	111	1	64-150/20
60-29-7	Ethyl Ether	50	40.4	81	39.2	78	3	74-132/11
100-41-4	Ethylbenzene	50	51.6	103	50.9	102	1	78-116/10
87-68-3	Hexachlorobutadiene	50	57.6	115	58.4	117	1	55-136/14
591-78-6	2-Hexanone	200	176	88	173	87	2	66-136/14
98-82-8	Isopropylbenzene	50	58.4	117	57.5	115	2	78-121/11
99-87-6	p-Isopropyltoluene	50	58.9	118	58.3	117	1	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	42.6	85	42.0	84	1	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	174	87	169	85	3	73-134/13
74-95-3	Methylene bromide	50	50.9	102	50.1	100	2	82-117/10
75-09-2	Methylene chloride	50	43.1	86	43.8	88	2	73-123/11
91-20-3	Naphthalene	50	55.3	111	54.8	110	1	64-136/13
103-65-1	n-Propylbenzene	50	53.6	107	53.8	108	0	75-121/11
100-42-5	Styrene	50	58.1	116	58.2	116	0	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	46.0	92	44.8	90	3	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	42.8	86	42.2	84	1	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	56.9	114	56.1	112	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	47.5	95	47.2	94	1	73-126/12
127-18-4	Tetrachloroethene	50	57.2	114	56.1	112	2	73-119/12
109-99-9	Tetrahydrofuran	50	45.4	91	44.5	89	2	63-133/11
108-88-3	Toluene	50	49.0	98	47.9	96	2	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	56.8	114	56.6	113	0	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	58.0	116	58.0	116	0	68-135/12
71-55-6	1,1,1-Trichloroethane	50	53.3	107	52.6	105	1	76-124/11
79-00-5	1,1,2-Trichloroethane	50	49.0	98	47.7	95	3	83-117/11
79-01-6	Trichloroethene	50	52.3	105	53.2	106	2	80-118/11
75-69-4	Trichlorofluoromethane	50	45.6	91	42.5	85	7	67-134/13
96-18-4	1,2,3-Trichloropropane	50	54.6	109	54.7	109	0	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	58.5	117	58.3	117	0	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	58.3	117	57.6	115	1	77-120/11
75-01-4	Vinyl chloride	50	41.1	82	39.9	80	3	52-146/15
	m,p-Xylene	100	115	115	112	112	3	79-119/10
95-47-6	o-Xylene	50	58.6	117	57.9	116	1	81-119/10
1330-20-7	Xylene (total)	150	174	116	170	113	2	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2U2361-BS	2U62018.D	1	12/07/23	LD	n/a	n/a	V2U2361
V2U2361-BSD	2U62020.D	1	12/07/23	LD	n/a	n/a	V2U2361

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-1, JD78052-4, JD78052-6, JD78052-7, JD78052-13, JD78052-16, JD78052-17

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	96%	97%	80-120%
17060-07-0	1,2-Dichloroethane-D4	93%	92%	80-120%
2037-26-5	Toluene-D8	96%	96%	80-120%
460-00-4	4-Bromofluorobenzene	96%	96%	82-114%

(a) Outside in house control limits, but meets MCP criteria.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5893-BS	4D133218.D	1	12/08/23	NW	n/a	n/a	V4D5893
V4D5893-BSD	4D133219.D	1	12/08/23	NW	n/a	n/a	V4D5893

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	241	121	278	139	14	27-175/31
71-43-2	Benzene	50	48.5	97	49.0	98	1	80-115/11
108-86-1	Bromobenzene	50	45.9	92	49.5	99	8	79-119/11
74-97-5	Bromochloromethane	50	51.2	102	54.0	108	5	83-122/10
75-27-4	Bromodichloromethane	50	45.9	92	49.8	100	8	82-119/12
75-25-2	Bromoform	50	47.7	95	48.3	97	1	77-135/11
74-83-9	Bromomethane	50	56.1	112	56.0	112	0	40-162/23
78-93-3	2-Butanone (MEK)	200	222	111	251	126	12	61-150/16
104-51-8	n-Butylbenzene	50	52.6	105	51.3	103	3	77-124/12
135-98-8	sec-Butylbenzene	50	45.2	90	50.1	100	10	75-121/12
98-06-6	tert-Butylbenzene	50	48.1	96	50.9	102	6	74-120/11
75-15-0	Carbon disulfide	50	56.5	113	56.4	113	0	64-130/13
56-23-5	Carbon tetrachloride	50	50.1	100	55.3	111	10	75-127/11
108-90-7	Chlorobenzene	50	47.8	96	48.8	98	2	80-115/10
75-00-3	Chloroethane	50	55.0	110	52.1	104	5	56-144/14
67-66-3	Chloroform	50	51.5	103	55.8	112	8	75-116/10
74-87-3	Chloromethane	50	51.8	104	52.2	104	1	41-153/14
95-49-8	o-Chlorotoluene	50	46.7	93	49.3	99	5	79-119/11
106-43-4	p-Chlorotoluene	50	45.2	90	47.2	94	4	77-117/11
108-20-3	Di-Isopropyl ether	50	44.1	88	47.3	95	7	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	53.9	108	52.5	105	3	69-134/11
124-48-1	Dibromochloromethane	50	47.0	94	44.5	89	5	81-123/11
106-93-4	1,2-Dibromoethane	50	46.8	94	44.0	88	6	67-138/11
95-50-1	1,2-Dichlorobenzene	50	51.9	104	49.9	100	4	81-117/10
541-73-1	1,3-Dichlorobenzene	50	47.5	95	49.0	98	3	81-115/10
106-46-7	1,4-Dichlorobenzene	50	48.1	96	49.8	100	3	80-114/10
75-71-8	Dichlorodifluoromethane	50	47.0	94	50.6	101	7	43-152/16
75-34-3	1,1-Dichloroethane	50	50.1	100	52.8	106	5	75-125/11
107-06-2	1,2-Dichloroethane	50	42.1	84	47.6	95	12* a	73-117/10
75-35-4	1,1-Dichloroethene	50	55.5	111	56.7	113	2	70-124/12
156-60-5	trans-1,2-Dichloroethene	50	53.1	106	54.3	109	2	77-121/12
78-87-5	1,2-Dichloropropane	50	47.9	96	51.3	103	7	79-121/10
142-28-9	1,3-Dichloropropane	50	45.1	90	47.5	95	5	81-117/11
594-20-7	2,2-Dichloropropane	50	48.1	96	53.2	106	10	70-131/12
563-58-6	1,1-Dichloropropene	50	50.4	101	54.3	109	7	77-122/10
10061-01-5	cis-1,3-Dichloropropene	50	47.9	96	50.7	101	6	83-123/11

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5893-BS	4D133218.D	1	12/08/23	NW	n/a	n/a	V4D5893
V4D5893-BSD	4D133219.D	1	12/08/23	NW	n/a	n/a	V4D5893

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	50	44.8	90	47.2	94	5	83-122/12
123-91-1	1,4-Dioxane	1250	1190	95	1230	98	3	64-150/20
60-29-7	Ethyl Ether	50	57.3	115	57.2	114	0	74-132/11
100-41-4	Ethylbenzene	50	46.3	93	48.3	97	4	78-116/10
87-68-3	Hexachlorobutadiene	50	57.9	116	56.6	113	2	55-136/14
591-78-6	2-Hexanone	200	180	90	203	102	12	66-136/14
98-82-8	Isopropylbenzene	50	46.8	94	49.0	98	5	78-121/11
99-87-6	p-Isopropyltoluene	50	47.1	94	49.9	100	6	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	50.0	100	52.4	105	5	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	181	91	200	100	10	73-134/13
74-95-3	Methylene bromide	50	47.7	95	51.1	102	7	82-117/10
75-09-2	Methylene chloride	50	48.6	97	49.1	98	1	73-123/11
91-20-3	Naphthalene	50	51.7	103	49.7	99	4	64-136/13
103-65-1	n-Propylbenzene	50	43.9	88	49.3	99	12* a	75-121/11
100-42-5	Styrene	50	46.8	94	48.9	98	4	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	47.9	96	49.4	99	3	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	48.9	98	51.4	103	5	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	47.7	95	49.2	98	3	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	44.0	88	50.1	100	13* a	73-126/12
127-18-4	Tetrachloroethene	50	48.5	97	49.3	99	2	73-119/12
109-99-9	Tetrahydrofuran	50	47.7	95	50.0	100	5	63-133/11
108-88-3	Toluene	50	46.7	93	47.7	95	2	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	51.6	103	50.2	100	3	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	54.3	109	52.4	105	4	68-135/12
71-55-6	1,1,1-Trichloroethane	50	49.3	99	54.3	109	10	76-124/11
79-00-5	1,1,2-Trichloroethane	50	45.3	91	46.9	94	3	83-117/11
79-01-6	Trichloroethene	50	49.8	100	52.2	104	5	80-118/11
75-69-4	Trichlorofluoromethane	50	56.5	113	62.3	125	10	67-134/13
96-18-4	1,2,3-Trichloropropane	50	44.8	90	50.9	102	13* a	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	47.6	95	48.4	97	2	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	46.1	92	48.7	97	5	77-120/11
75-01-4	Vinyl chloride	50	56.7	113	53.6	107	6	52-146/15
	m,p-Xylene	100	93.7	94	96.7	97	3	79-119/10
95-47-6	o-Xylene	50	47.0	94	49.4	99	5	81-119/10
1330-20-7	Xylene (total)	150	141	94	146	97	3	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V4D5893-BS	4D133218.D	1	12/08/23	NW	n/a	n/a	V4D5893
V4D5893-BSD	4D133219.D	1	12/08/23	NW	n/a	n/a	V4D5893

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78052-7

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	104%	109%	80-120%
17060-07-0	1,2-Dichloroethane-D4	88%	97%	80-120%
2037-26-5	Toluene-D8	96%	97%	80-120%
460-00-4	4-Bromofluorobenzene	90%	99%	82-114%

(a) Outside in house control limits, but meets MCP criteria.

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1U2361-CC2355	Injection Date:	12/07/23
Lab File ID:	1U62013.D	Injection Time:	10:04
Instrument ID:	GCMS1U	Method:	SW846 8260D

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	385758	1.92	411598	2.83	690835	3.12	629813	4.89	334610	6.62
Upper Limit ^a	771516	2.42	823196	3.33	1381670	3.62	1259626	5.39	669220	7.12
Lower Limit ^b	192879	1.42	205799	2.33	345418	2.62	314907	4.39	167305	6.12

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
V1U2361-BS	372861	1.92	435137	2.83	714946	3.12	691024	4.89	378256	6.62
V1U2361-BSD	396676	1.92	465930	2.83	759630	3.12	729159	4.89	390186	6.62
V1U2361-MB	400497	1.92	356061	2.83	604660	3.12	562961	4.89	284202	6.62
JD78052-14	354739	1.92	356269	2.83	612304	3.12	565261	4.90	284505	6.62
JD78052-15	363244	1.92	346899	2.83	589069	3.12	543982	4.89	280404	6.62
JD78052-18	356122	1.92	343290	2.83	578438	3.12	536047	4.89	273952	6.62
JD78052-5	352196	1.92	340035	2.83	578555	3.12	534037	4.89	274731	6.62
JD78052-5 ^c	351403	1.92	342539	2.83	609937	3.12	538194	4.89	274286	6.62
JD78052-5MS	354468	1.92	424394	2.83	722988	3.12	684108	4.89	368083	6.62
JD78052-5MSD	370717	1.92	460741	2.83	768899	3.12	706864	4.89	376592	6.62
JD78052-3	384214	1.92	396826	2.83	678710	3.12	612049	4.89	307386	6.62
JD78052-8	357102	1.92	354469	2.83	601533	3.12	554862	4.89	279749	6.62
JD78052-3	359504	1.92	360096	2.83	610941	3.12	547124	4.89	279288	6.62
JD78052-8	343079	1.92	345757	2.83	591033	3.12	547070	4.89	276203	6.62
ZZZZZ	346693	1.92	381790	2.83	598273	3.12	555482	4.89	279190	6.62

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
 (c) Dilution required due to high concentration of target compound.

Internal Standard Area Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V2U2361-CC2355	Injection Date: 12/07/23
Lab File ID: 2U62014.D	Injection Time: 10:19
Instrument ID: GCMS2U	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	426226	1.93	448739	2.83	749603	3.12	705312	4.89	385425	6.62
Upper Limit ^a	852452	2.43	897478	3.33	1499206	3.62	1410624	5.39	770850	7.12
Lower Limit ^b	213113	1.43	224370	2.33	374802	2.62	352656	4.39	192713	6.12

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V2U2361-BS	432793	1.93	491808	2.83	801528	3.12	779222	4.90	441651	6.62
V2U2361-BSD	433445	1.93	505714	2.83	826398	3.12	798663	4.89	446000	6.62
V2U2361-MB	436424	1.93	402793	2.83	675455	3.12	623865	4.90	321962	6.62
JD78052-13	407173	1.92	381588	2.83	655367	3.12	602819	4.90	313644	6.62
JD78052-17	420991	1.93	373516	2.83	633566	3.12	590936	4.89	305355	6.62
JD78052-16	402613	1.92	363972	2.83	623877	3.12	576425	4.89	296293	6.62
JD78052-1	406935	1.92	363072	2.83	623789	3.12	579508	4.89	296890	6.62
JD78052-6	399404	1.93	359600	2.83	618413	3.12	574450	4.89	296962	6.62
JD78052-6 ^c	394894	1.93	369105	2.83	648161	3.12	577528	4.89	295172	6.62
JD78052-6MS	405157	1.93	477350	2.83	796768	3.12	741014	4.90	411637	6.62
JD78052-6MSD	420937	1.93	493407	2.83	828831	3.12	776343	4.90	428489	6.62
JD78052-4	413922	1.93	395116	2.83	663454	3.12	616632	4.90	317209	6.62
JD78052-7	397576	1.93	372553	2.83	627261	3.12	579724	4.90	299576	6.62
JD78052-4	390817	1.92	370004	2.83	639844	3.12	587581	4.89	302535	6.62

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
 (c) Dilution required due to high concentration of target compound.

6.3.2
6

Internal Standard Area Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V2V4085-CC4070	Injection Date: 12/06/23
Lab File ID: 2V102610.D	Injection Time: 10:00
Instrument ID: GCMS2V	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	228908	2.25	343040	3.21	582105	3.66	509292	5.64	255084	7.42
Upper Limit ^a	457816	2.75	686080	3.71	1164210	4.16	1018584	6.14	510168	7.92
Lower Limit ^b	114454	1.75	171520	2.71	291053	3.16	254646	5.14	127542	6.92

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V2V4085-BS	210675	2.24	344121	3.20	577912	3.66	520822	5.64	259132	7.42
V2V4085-BSD	224218	2.25	350506	3.21	591029	3.66	530313	5.64	265003	7.42
V2V4085-MB	220238	2.24	351560	3.20	595854	3.66	527141	5.64	258861	7.42
ZZZZZZ	227332	2.24	338770	3.21	585124	3.66	515798	5.64	253569	7.42
ZZZZZZ	220466	2.25	334012	3.21	581877	3.66	519420	5.64	252493	7.42
ZZZZZZ	210383	2.25	326149	3.21	569980	3.66	515831	5.64	250796	7.42
ZZZZZZ	201098	2.24	319930	3.20	564445	3.66	509349	5.64	249993	7.42
ZZZZZZ	204569	2.24	316777	3.20	563033	3.66	513174	5.64	247349	7.42
ZZZZZZ	204103	2.24	313192	3.21	554606	3.66	510512	5.64	250429	7.42
ZZZZZZ	193722	2.24	313095	3.21	552350	3.66	501467	5.64	244304	7.42
ZZZZZZ	175524	2.25	294397	3.21	514465	3.66	468162	5.64	228563	7.42
ZZZZZZ	178255	2.24	294101	3.20	519528	3.66	472351	5.64	227785	7.42
JD78052-2MS	204043	2.25	333764	3.21	564418	3.66	508120	5.64	253125	7.42
JD78052-2MSD	229814	2.24	343102	3.20	576385	3.66	521818	5.64	258901	7.42
JD78052-2 ^c	215415	2.24	340704	3.21	584107	3.66	512536	5.64	252419	7.42
ZZZZZZ	206804	2.24	313607	3.21	552635	3.66	504268	5.64	248788	7.42
ZZZZZZ	223115	2.25	321566	3.21	559329	3.66	508506	5.64	251693	7.42
JD78052-9	207221	2.25	315445	3.21	554939	3.66	505509	5.64	244903	7.42
JD78052-10	209307	2.24	315450	3.20	555238	3.66	506496	5.64	247484	7.42
JD78052-11	198454	2.24	312358	3.21	542296	3.66	498903	5.64	241391	7.42
JD78052-12	206305	2.25	314272	3.21	552330	3.66	502513	5.64	246158	7.42
ZZZZZZ	192944	2.24	304251	3.21	542934	3.66	492357	5.64	239840	7.42

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
 (c) Dilution required due to high concentration of target compound. No pH.

6.3.3
6

Internal Standard Area Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V4D5893-CC5842	Injection Date: 12/08/23
Lab File ID: 4D133217.D	Injection Time: 09:52
Instrument ID: GCMS4D	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	458130	8.81	424752	11.29	704188	12.20	555442	15.07	242733	17.19
Upper Limit ^a	916260	9.31	849504	11.79	1408376	12.70	1110884	15.57	485466	17.69
Lower Limit ^b	229065	8.31	212376	10.79	352094	11.70	277721	14.57	121367	16.69

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V4D5893-BS	444774	8.82	391625	11.29	664273	12.20	548906	15.07	262519	17.19
V4D5893-BS D	520836	8.82	431521	11.30	751411	12.21	638499	15.07	281213	17.19
V4D5893-MB	529824	8.81	489773	11.30	850463	12.21	700389	15.07	301115	17.19
JD78052-7 ^c	555852	8.81	465680	11.29	837084	12.21	696482	15.07	309232	17.19
ZZZZZZ	495219	8.81	464319	11.30	793193	12.21	700591	15.07	303238	17.19
JD78317-6	584636	8.81	479107	11.30	844227	12.21	712405	15.07	314929	17.19
ZZZZZZ	535929	8.81	464497	11.30	825942	12.21	692598	15.07	308421	17.19
ZZZZZZ	529073	8.81	458692	11.30	814627	12.21	683800	15.07	301740	17.19
ZZZZZZ	521512	8.81	470440	11.30	829305	12.21	689411	15.07	299871	17.19
ZZZZZZ	536784	8.81	463350	11.30	818497	12.21	688018	15.07	304962	17.19
ZZZZZZ	489931	8.81	451992	11.30	820154	12.21	681672	15.07	297040	17.19
JD78317-6MS	512666	8.82	405613	11.29	714427	12.21	615984	15.07	275329	17.19
JD78317-6MS D	514762	8.82	411079	11.30	724966	12.21	617590	15.07	272855	17.19
ZZZZZZ	482755	8.81	446807	11.30	761466	12.21	598972	15.07	259959	17.19
ZZZZZZ	510910	8.81	455144	11.30	778569	12.21	613470	15.07	268791	17.19
ZZZZZZ	510636	8.81	451279	11.30	769737	12.21	593998	15.07	265283	17.19
ZZZZZZ	489462	8.81	440217	11.30	743082	12.21	582045	15.07	256153	17.19
ZZZZZZ	465059	8.81	432481	11.30	727540	12.21	561850	15.07	249226	17.19
ZZZZZZ	489026	8.81	428942	11.30	724547	12.21	566580	15.07	251339	17.19
ZZZZZZ	475311	8.81	435862	11.30	730774	12.21	570782	15.07	248722	17.19
ZZZZZZ	448105	8.81	437349	11.30	731259	12.21	566677	15.07	246433	17.19

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
 (c) Dilution required due to high concentration of target compound.

Surrogate Recovery Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD78052-1	2U62031.D	102	106	104	105
JD78052-2	2V102629.D	105	107	101	105
JD78052-3	1U62044.D	100	104	107	105
JD78052-3	1U62040.D	103	100	105	107
JD78052-4	2U62045.D	100	104	104	105
JD78052-4	2U62041.D	100	105	105	106
JD78052-5	1U62034.D	101	102	106	105
JD78052-5	1U62032.D	103	107	107	104
JD78052-6	2U62035.D	101	103	106	108
JD78052-6	2U62033.D	102	107	104	105
JD78052-7	4D133222.D	110	102	95	100
JD78052-7	2U62043.D	101	106	104	105
JD78052-8	1U62046.D	101	105	105	105
JD78052-8	1U62042.D	100	105	105	106
JD78052-9	2V102632.D	108	110	102	106
JD78052-10	2V102633.D	108	109	102	106
JD78052-11	2V102634.D	108	111	102	106
JD78052-12	2V102635.D	108	111	103	104
JD78052-13	2U62025.D	104	105	105	105
JD78052-14	1U62026.D	103	104	104	106
JD78052-15	1U62028.D	101	107	106	104
JD78052-16	2U62029.D	103	106	106	106
JD78052-17	2U62027.D	102	105	105	106
JD78052-18	1U62030.D	103	106	106	103
V1U2361-BS	1U62017.D	95	98	97	97
V1U2361-BSD	1U62019.D	98	93	97	98
V1U2361-MB	1U62024.D	102	107	106	106
V2U2361-BS	2U62018.D	96	93	96	96
V2U2361-BSD	2U62020.D	97	92	96	96
V2U2361-MB	2U62023.D	102	105	104	105
V2V4085-BS	2V102612.D	104	104	101	104
V2V4085-BSD	2V102613.D	104	104	100	104
V2V4085-MB	2V102615.D	105	107	103	106
V4D5893-BS	4D133218.D	104	88	96	90
V4D5893-BSD	4D133219.D	109	97	97	99
V4D5893-MB	4D133221.D	109	102	100	100

Surrogate Compounds

Recovery Limits

Surrogate Recovery Summary

Job Number: JD78052
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: AQ
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Samples and QC shown here apply to the above method

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS107.A.CS.EV.2.23

SGS Job Number: JD78295

Sampling Dates: 12/04/23 - 12/06/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorete@jacobs.com; Bernice.Kidd@jacobs.com;
EDMData@jacobs.com
ATTN: Raymond J. Cadorette

Total number of pages in report: **129**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129),NY(10983),CA,CO,CT,FL,HI,IL,IN,KY,LA (120428),MA,MD,ME,MN,NC,NH,NV,AK (UST-103),AZ (AZ0786),PA(68-00408),RI,SC,TX (T104704234),UT,VA,WA,WV

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Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD78295

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Collected Date	Time By	Matrix Received	Code Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD78295-1	12/04/23	11:00	DK	12/06/23	AQ	Surface Water	CULVERT_OUTFALL_20231204_N_WS
JD78295-2	12/04/23	11:00	DK	12/06/23	AQ	Surface Water	CULVERT_OUTFALL_20231204_FD_WS
JD78295-3	12/04/23	13:00	DK	12/06/23	AQ	Surface Water	STR-19_20231204_N_WS
JD78295-4	12/04/23	14:30	DK	12/06/23	AQ	Surface Water	STR-28_20231204_N_WS
JD78295-5	12/04/23	14:50	DK	12/06/23	AQ	Surface Water	STR-20_20231204_N_WS
JD78295-6	12/04/23	15:40	DK	12/06/23	AQ	Surface Water	STRMH-02_20231204_N_WS
JD78295-7	12/04/23	15:45	DK	12/06/23	AQ	Surface Water	STR-02_20231204_N_WS
JD78295-8	12/05/23	10:30	DK	12/06/23	AQ	Ground Water	OB-55-BR_20231205_N_WG
JD78295-9	12/05/23	11:30	DK	12/06/23	AQ	Ground Water	MW-013_20231205_N_WG
JD78295-10	12/05/23	12:40	DK	12/06/23	AQ	Ground Water	P-20R_20231205_N_WG
JD78295-11	12/05/23	12:50	DK	12/06/23	AQ	Ground Water	OB-20-DO_20231205_N_WG
JD78295-12	12/05/23	13:05	DK	12/06/23	AQ	Surface Water	GDS-03_20231205_N_WS



Sample Summary

(continued)

Jacobs Engineering

Job No: JD78295

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JD78295-13	12/05/23	13:30 DK	12/06/23	AQ	Surface Water	STREAM-A_20231205_N_WS
JD78295-14	12/06/23	11:05 DK	12/06/23	AQ	Ground Water	P-04R-20231206_N_WG
JD78295-15	12/06/23	13:00 DK	12/06/23	AQ	Trip Blank Water	TB-06_20231206
JD78295-16	12/05/23	11:00 DK	12/06/23	AQ	Ground Water	OB-12-DO_20231205_N_WG
JD78295-17	12/06/23	12:00 DK	12/06/23	AQ	Ground Water	OB-58-DO_20231206_N_WG
JD78295-18	12/06/23	12:15 DK	12/06/23	AQ	Ground Water	OB-57-DO_20231206_N_WG
JD78295-19	12/06/23	13:00 DK	12/06/23	AQ	Equipment Blank	EB01_20231206_WS

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD78295

Site: Varian, Beverly, MA

Report Date 12/27/2023 2:41:10 P

On 12/06/2023, 17 sample(s), 1 Trip Blank(s), 1 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 3.1 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD78295 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ

Batch ID: V1K381

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Bromomethane are outside control limits.
- JD78295-6 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-9 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-9 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-9 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-6 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-6 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-4 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-6 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-4 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-8 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-8 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-8 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-8 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-6 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-2 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- V1K381-BS for Bromomethane: High percent recovery and no associated positive reported in the QC batch.
- JD78295-15 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-15 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-15 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-15 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-4 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-2 for Chloroethane: Associated CCV outside of control limits high, sample was ND.

Wednesday, December 27, 2023

Page 1 of 5

MS Volatiles By Method SW846 8260D

Matrix: AQ

Batch ID: V1K381

- JD78295-8 for Acetone: Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-2 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-2 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-2 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-4 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-9 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-4 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-15 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-11 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-12 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-12 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-9 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-11 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- JD78295-11 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-11 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-12 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-12 for Dichlorodifluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-12 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-11 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND.

Matrix: AQ

Batch ID: V2K381

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- The blank spike (BS) recovery(s) of Trichlorofluoromethane are outside control limits.
- JD78295-3 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-10 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-3 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-1 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-13 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-3 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-13 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-13 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.

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MS Volatiles By Method SW846 8260D

Matrix: AQ

Batch ID: V2K381

- JD78295-13 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-1 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-1 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-1 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-3 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-19 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-19 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-19 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-19 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-19 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-13 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- V2K381-BS for Trichlorofluoromethane: High percent recovery and no associated positive reported in the QC batch.
- JD78295-1 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-7 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-10 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-10 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-10 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-10 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-3 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-7 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-14 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-7 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-7 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-7 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-16 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-16 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-5 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.

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MS Volatiles By Method SW846 8260D

Matrix: AQ

Batch ID: V2K381

- JD78295-16 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-16 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-5 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-14 for Acetone: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-14 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-14 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-14 for Trichlorofluoromethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-5 for Carbon tetrachloride: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-5 for Bromomethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-5 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- JD78295-16 for Chloroethane: Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.

Matrix: AQ

Batch ID: V2V4090

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD78295-17 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78295-17 for Hexachlorobutadiene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-17 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-17 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-18 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte.
- JD78295-18 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-18 for Hexachlorobutadiene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78295-18 for Chloroethane: Associated CCV outside of control limits high, sample was ND.

GC Volatiles By Method RSK-175

Matrix: AQ

Batch ID: GAA2955

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM5310 B-11/14

Matrix: AQ

Batch ID: GP50926

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

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Summary of Hits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD78295-1	CULVERT_OUTFALL_20231204_N_WS					
	cis-1,2-Dichloroethene	7.7	1.0		ug/l	SW846 8260D
	Tetrachloroethene	1.1	1.0		ug/l	SW846 8260D
	Trichloroethene	4.6	1.0		ug/l	SW846 8260D
JD78295-2	CULVERT_OUTFALL_20231204_FD_WS					
	cis-1,2-Dichloroethene	7.0	1.0		ug/l	SW846 8260D
	Trichloroethene	4.4	1.0		ug/l	SW846 8260D
JD78295-3	STR-19_20231204_N_WS					
	Chloroform	1.2	1.0		ug/l	SW846 8260D
	cis-1,2-Dichloroethene	4.9	1.0		ug/l	SW846 8260D
	Trichloroethene	2.4	1.0		ug/l	SW846 8260D
JD78295-4	STR-28_20231204_N_WS					
	cis-1,2-Dichloroethene	4.1	1.0		ug/l	SW846 8260D
	Tetrachloroethene	2.1	1.0		ug/l	SW846 8260D
	Trichloroethene	9.2	1.0		ug/l	SW846 8260D
JD78295-5	STR-20_20231204_N_WS					
	Chloroform	2.3	1.0		ug/l	SW846 8260D
JD78295-6	STRMH-02_20231204_N_WS					
	cis-1,2-Dichloroethene	19.1	1.0		ug/l	SW846 8260D
	Tetrachloroethene	9.7	1.0		ug/l	SW846 8260D
	Trichloroethene	40.8	1.0		ug/l	SW846 8260D
	Vinyl chloride	2.9	1.0		ug/l	SW846 8260D
JD78295-7	STR-02_20231204_N_WS					
	cis-1,2-Dichloroethene	17.5	1.0		ug/l	SW846 8260D
	Tetrachloroethene	9.4	1.0		ug/l	SW846 8260D
	Trichloroethene	27.4	1.0		ug/l	SW846 8260D
	Vinyl chloride	3.4	1.0		ug/l	SW846 8260D
JD78295-8	OB-55-BR_20231205_N_WG					
	Acetone ^a	19.6	10		ug/l	SW846 8260D
	cis-1,2-Dichloroethene	14.1	1.0		ug/l	SW846 8260D

Summary of Hits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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Trichloroethene		17.4	1.0		ug/l	SW846 8260D
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JD78295-9 MW-013_20231205_N_WG

Chloroform		38.8	25		ug/l	SW846 8260D
cis-1,2-Dichloroethene		223	25		ug/l	SW846 8260D
Tetrachloroethene		5950	250		ug/l	SW846 8260D
1,1,1-Trichloroethane		32.3	25		ug/l	SW846 8260D
Trichloroethene		6530	250		ug/l	SW846 8260D

JD78295-10 P-20R_20231205_N_WG

No hits reported in this sample.

JD78295-11 OB-20-DO_20231205_N_WG

No hits reported in this sample.

JD78295-12 GDS-03_20231205_N_WS

Chloroform		1.4	1.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene		5.1	1.0		ug/l	SW846 8260D
Tetrachloroethene		1.0	1.0		ug/l	SW846 8260D
Trichloroethene		2.5	1.0		ug/l	SW846 8260D

JD78295-13 STREAM-A_20231205_N_WS

Chloroform		1.7	1.0		ug/l	SW846 8260D
cis-1,2-Dichloroethene		6.8	1.0		ug/l	SW846 8260D
Tetrachloroethene		1.3	1.0		ug/l	SW846 8260D
Trichloroethene		3.3	1.0		ug/l	SW846 8260D

JD78295-14 P-04R-20231206_N_WG

Chloroform		1.3	1.0		ug/l	SW846 8260D
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JD78295-15 TB-06_20231206

No hits reported in this sample.

JD78295-16 OB-12-DO_20231205_N_WG

1,1-Dichloroethene		34.6	25		ug/l	SW846 8260D
cis-1,2-Dichloroethene		6630	250		ug/l	SW846 8260D
Tetrachloroethene		1170	25		ug/l	SW846 8260D

Summary of Hits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Trichloroethene		16600	250		ug/l	SW846 8260D
JD78295-17 OB-58-DO_20231206_N_WG						
Methane		22.1	0.11		ug/l	RSK-175
Total Organic Carbon		1.4	1.0		mg/l	SM5310 B-11/14
JD78295-18 OB-57-DO_20231206_N_WG						
Acetone ^b		15.0	10		ug/l	SW846 8260D
Tetrachloroethene		5.6	1.0		ug/l	SW846 8260D
Trichloroethene		48.1	1.0		ug/l	SW846 8260D
Methane		1.79	0.11		ug/l	RSK-175
Ethene		0.26 J	0.31		ug/l	RSK-175
Total Organic Carbon		2.8	1.0		mg/l	SM5310 B-11/14

JD78295-19 EB01_20231206_WS

No hits reported in this sample.

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	CULVERT_OUTFALL_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-1	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13894.D	1	12/11/23 15:16	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	7.7	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CULVERT_OUTFALL_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-1	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	1.1	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	4.6	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CULVERT_OUTFALL_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-1	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	CULVERT_OUTFALL_20231204_FD_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-2	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13895.D	1	12/11/23 15:33	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	7.0	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CULVERT_OUTFALL_20231204_FD_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-2	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	4.4	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: CULVERT_OUTFALL_20231204_FD_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78295-2	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	STR-19_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-3	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13896.D	1	12/11/23 15:49	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	1.2	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	4.9	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-19_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-3	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	2.4	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-19_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78295-3	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-28_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-4	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13897.D	1	12/11/23 16:05	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	4.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-28_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-4	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	2.1	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	9.2	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-28_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78295-4	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	110%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-20_20231204_N_WS	
Lab Sample ID: JD78295-5	Date Sampled: 12/04/23
Matrix: AQ - Surface Water	Date Received: 12/06/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13898.D	1	12/11/23 16:22	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	2.3	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-20_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-5	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-20_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78295-5	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STRMH-02_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78295-6	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13911.D	1	12/11/23 19:53	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	19.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID:	STRMH-02_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-6	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	9.7	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	40.8	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	2.9	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STRMH-02_20231204_N_WS	Date Sampled: 12/04/23
Lab Sample ID: JD78295-6	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	109%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	96%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-02_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-7	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13912.D	1	12/11/23 20:10	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	17.5	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STR-02_20231204_N_WS	Date Sampled:	12/04/23
Lab Sample ID:	JD78295-7	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	9.4	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	27.4	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	3.4	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STR-02_20231204_N_WS Lab Sample ID: JD78295-7 Matrix: AQ - Surface Water Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 12/04/23 Date Received: 12/06/23 Percent Solids: n/a
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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID:	OB-55-BR_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-8	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13913.D	1	12/11/23 20:26	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	19.6	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	14.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-55-BR_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-8	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	17.4	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-55-BR_20231205_N_WG	Date Sampled: 12/05/23
Lab Sample ID: JD78295-8	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

- (a) Associated CCV outside of control limits high. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID:	MW-013_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-9	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13901.D	25	12/11/23 17:10	LD	n/a	n/a	V1K381
Run #2	1K13899.D	250	12/11/23 16:38	LD	n/a	n/a	V1K381

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	250	ug/l	
71-43-2	Benzene	ND	13	ug/l	
108-86-1	Bromobenzene	ND	25	ug/l	
74-97-5	Bromochloromethane	ND	25	ug/l	
75-27-4	Bromodichloromethane	ND	25	ug/l	
75-25-2	Bromoform	ND	25	ug/l	
74-83-9	Bromomethane ^b	ND	50	ug/l	
78-93-3	2-Butanone (MEK)	ND	250	ug/l	
104-51-8	n-Butylbenzene	ND	50	ug/l	
135-98-8	sec-Butylbenzene	ND	50	ug/l	
98-06-6	tert-Butylbenzene	ND	50	ug/l	
75-15-0	Carbon disulfide	ND	50	ug/l	
56-23-5	Carbon tetrachloride	ND	25	ug/l	
108-90-7	Chlorobenzene	ND	25	ug/l	
75-00-3	Chloroethane ^c	ND	25	ug/l	
67-66-3	Chloroform	38.8	25	ug/l	
74-87-3	Chloromethane	ND	25	ug/l	
95-49-8	o-Chlorotoluene	ND	50	ug/l	
106-43-4	p-Chlorotoluene	ND	50	ug/l	
108-20-3	Di-Isopropyl ether	ND	50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	ug/l	
124-48-1	Dibromochloromethane	ND	25	ug/l	
106-93-4	1,2-Dibromoethane	ND	25	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	25	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	25	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	25	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	50	ug/l	
75-34-3	1,1-Dichloroethane	ND	25	ug/l	
107-06-2	1,2-Dichloroethane	ND	25	ug/l	
75-35-4	1,1-Dichloroethene	ND	25	ug/l	
156-59-2	cis-1,2-Dichloroethene	223	25	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	25	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-013_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-9	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	25	ug/l	
142-28-9	1,3-Dichloropropane	ND	25	ug/l	
594-20-7	2,2-Dichloropropane	ND	25	ug/l	
563-58-6	1,1-Dichloropropene	ND	25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	25	ug/l	
123-91-1	1,4-Dioxane	ND	3100	ug/l	
60-29-7	Ethyl Ether	ND	50	ug/l	
100-41-4	Ethylbenzene	ND	25	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	ug/l	
591-78-6	2-Hexanone	ND	130	ug/l	
98-82-8	Isopropylbenzene	ND	25	ug/l	
99-87-6	p-Isopropyltoluene	ND	50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	130	ug/l	
74-95-3	Methylene bromide	ND	25	ug/l	
75-09-2	Methylene chloride	ND	50	ug/l	
91-20-3	Naphthalene	ND	130	ug/l	
103-65-1	n-Propylbenzene	ND	50	ug/l	
100-42-5	Styrene	ND	25	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	50	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	25	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	25	ug/l	
127-18-4	Tetrachloroethene	5950 ^d	250	ug/l	
109-99-9	Tetrahydrofuran	ND	250	ug/l	
108-88-3	Toluene	ND	25	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	25	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	25	ug/l	
71-55-6	1,1,1-Trichloroethane	32.3	25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	25	ug/l	
79-01-6	Trichloroethene	6530 ^d	250	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	50	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	50	ug/l	
75-01-4	Vinyl chloride	ND	25	ug/l	
	m,p-Xylene	ND	25	ug/l	
95-47-6	o-Xylene	ND	25	ug/l	
1330-20-7	Xylene (total)	ND	25	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-013_20231205_N_WG	Date Sampled: 12/05/23
Lab Sample ID: JD78295-9	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%	105%	80-120%
17060-07-0	1,2-Dichloroethane-D4	106%	109%	80-120%
2037-26-5	Toluene-D8	99%	99%	80-120%
460-00-4	4-Bromofluorobenzene	97%	97%	82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.
- (d) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-20R_20231205_N_WG	Date Sampled: 12/05/23
Lab Sample ID: JD78295-10	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13914.D	1	12/11/23 20:42	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P-20R_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-10	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-20R_20231205_N_WG	Date Sampled: 12/05/23
Lab Sample ID: JD78295-10	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-20-DO_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-11	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13915.D	1	12/11/23 20:58	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-20-DO_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-11	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-20-DO_20231205_N_WG	Date Sampled: 12/05/23
Lab Sample ID: JD78295-11	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	94%		80-120%
460-00-4	4-Bromofluorobenzene	92%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: GDS-03_20231205_N_WS	
Lab Sample ID: JD78295-12	Date Sampled: 12/05/23
Matrix: AQ - Surface Water	Date Received: 12/06/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13917.D	1	12/11/23 21:31	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	1.4	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	5.1	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GDS-03_20231205_N_WS	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-12	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	1.0	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	2.5	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: GDS-03_20231205_N_WS	Date Sampled: 12/05/23
Lab Sample ID: JD78295-12	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	99%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STREAM-A_20231205_N_WS	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-13	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13918.D	1	12/11/23 21:47	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	1.7	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	6.8	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STREAM-A_20231205_N_WS	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-13	Date Received:	12/06/23
Matrix:	AQ - Surface Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	1.3	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	3.3	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: STREAM-A_20231205_N_WS	Date Sampled: 12/05/23
Lab Sample ID: JD78295-13	Date Received: 12/06/23
Matrix: AQ - Surface Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	107%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	105%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-04R-20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-14	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13916.D	1	12/11/23 21:15	LD	n/a	n/a	V2K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	1.3	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-04R-20231206_N_WG
Lab Sample ID: JD78295-14
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 12/06/23
Date Received: 12/06/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-04R-20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-14	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		80-120%
17060-07-0	1,2-Dichloroethane-D4	104%		80-120%
2037-26-5	Toluene-D8	105%		80-120%
460-00-4	4-Bromofluorobenzene	95%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-06_20231206		Date Sampled: 12/06/23
Lab Sample ID: JD78295-15		Date Received: 12/06/23
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1K13891.D	1	12/11/23 14:27	LD	n/a	n/a	V1K381
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^b	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^c	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.15
4

Report of Analysis

Client Sample ID: TB-06_20231206	Date Sampled: 12/06/23
Lab Sample ID: JD78295-15	Date Received: 12/06/23
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^c	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB-06_20231206	
Lab Sample ID: JD78295-15	Date Sampled: 12/06/23
Matrix: AQ - Trip Blank Water	Date Received: 12/06/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	98%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BSD biased high.
- (b) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (c) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-12-DO_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-16	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13902.D	25	12/11/23 17:27	LD	n/a	n/a	V2K381
Run #2	2K13900.D	250	12/11/23 16:54	LD	n/a	n/a	V2K381

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	250	ug/l	
71-43-2	Benzene	ND	13	ug/l	
108-86-1	Bromobenzene	ND	25	ug/l	
74-97-5	Bromochloromethane	ND	25	ug/l	
75-27-4	Bromodichloromethane	ND	25	ug/l	
75-25-2	Bromoform	ND	25	ug/l	
74-83-9	Bromomethane ^a	ND	50	ug/l	
78-93-3	2-Butanone (MEK)	ND	250	ug/l	
104-51-8	n-Butylbenzene	ND	50	ug/l	
135-98-8	sec-Butylbenzene	ND	50	ug/l	
98-06-6	tert-Butylbenzene	ND	50	ug/l	
75-15-0	Carbon disulfide	ND	50	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	25	ug/l	
108-90-7	Chlorobenzene	ND	25	ug/l	
75-00-3	Chloroethane ^a	ND	25	ug/l	
67-66-3	Chloroform	ND	25	ug/l	
74-87-3	Chloromethane	ND	25	ug/l	
95-49-8	o-Chlorotoluene	ND	50	ug/l	
106-43-4	p-Chlorotoluene	ND	50	ug/l	
108-20-3	Di-Isopropyl ether	ND	50	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	ug/l	
124-48-1	Dibromochloromethane	ND	25	ug/l	
106-93-4	1,2-Dibromoethane	ND	25	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	25	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	25	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	25	ug/l	
75-71-8	Dichlorodifluoromethane	ND	50	ug/l	
75-34-3	1,1-Dichloroethane	ND	25	ug/l	
107-06-2	1,2-Dichloroethane	ND	25	ug/l	
75-35-4	1,1-Dichloroethene	34.6	25	ug/l	
156-59-2	cis-1,2-Dichloroethene	6630 ^c	250	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	25	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-12-DO_20231205_N_WG	Date Sampled:	12/05/23
Lab Sample ID:	JD78295-16	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	25	ug/l	
142-28-9	1,3-Dichloropropane	ND	25	ug/l	
594-20-7	2,2-Dichloropropane	ND	25	ug/l	
563-58-6	1,1-Dichloropropene	ND	25	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	25	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	25	ug/l	
123-91-1	1,4-Dioxane	ND	3100	ug/l	
60-29-7	Ethyl Ether	ND	50	ug/l	
100-41-4	Ethylbenzene	ND	25	ug/l	
87-68-3	Hexachlorobutadiene	ND	50	ug/l	
591-78-6	2-Hexanone	ND	130	ug/l	
98-82-8	Isopropylbenzene	ND	25	ug/l	
99-87-6	p-Isopropyltoluene	ND	50	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	25	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	130	ug/l	
74-95-3	Methylene bromide	ND	25	ug/l	
75-09-2	Methylene chloride	ND	50	ug/l	
91-20-3	Naphthalene	ND	130	ug/l	
103-65-1	n-Propylbenzene	ND	50	ug/l	
100-42-5	Styrene	ND	25	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	50	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	50	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	25	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	25	ug/l	
127-18-4	Tetrachloroethene	1170	25	ug/l	
109-99-9	Tetrahydrofuran	ND	250	ug/l	
108-88-3	Toluene	ND	25	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	25	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	25	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	25	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	25	ug/l	
79-01-6	Trichloroethene	16600 ^c	250	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	50	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	50	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	50	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	50	ug/l	
75-01-4	Vinyl chloride	ND	25	ug/l	
	m,p-Xylene	ND	25	ug/l	
95-47-6	o-Xylene	ND	25	ug/l	
1330-20-7	Xylene (total)	ND	25	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-12-DO_20231205_N_WG	Date Sampled: 12/05/23
Lab Sample ID: JD78295-16	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%	106%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	106%	80-120%
2037-26-5	Toluene-D8	99%	99%	80-120%
460-00-4	4-Bromofluorobenzene	97%	99%	82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (c) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	OB-58-DO_20231206_N_WG	Date Sampled:	12/06/23
Lab Sample ID:	JD78295-17	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102803.D	1	12/12/23 17:59	BN	n/a	n/a	V2V4090
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-58-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-17	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene ^a	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-58-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-17	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	106%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-58-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-17	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105845.D	1	12/18/23 11:20	ML	n/a	n/a	GAA2955
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	22.1	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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4

Report of Analysis

Client Sample ID: OB-58-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-17	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Varian, Beverly, MA	

4.17
4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Total Organic Carbon	1.4	1.0	mg/l	1	12/08/23 23:19	MB	SM5310 B-11/14

RL = Reporting Limit

Report of Analysis

Client Sample ID: OB-57-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-18	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102804.D	1	12/12/23 18:24	BN	n/a	n/a	V2V4090
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	15.0	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

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4

Report of Analysis

Client Sample ID:	OB-57-DO_20231206_N_WG	Date Sampled:	12/06/23
Lab Sample ID:	JD78295-18	Date Received:	12/06/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene ^c	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	5.6	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	48.1	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-57-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-18	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

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4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		80-120%
17060-07-0	1,2-Dichloroethane-D4	106%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

- (a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte.
- (b) Associated CCV outside of control limits high, sample was ND.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-57-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-18	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105846.D	1	12/18/23 11:36	ML	n/a	n/a	GAA2955
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	1.79	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	0.26	0.31	ug/l	J

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.18
4

Report of Analysis

Client Sample ID: OB-57-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78295-18	Date Received: 12/06/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: Varian, Beverly, MA	

4.18
4

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Total Organic Carbon	2.8	1.0	mg/l	1	12/08/23 23:54	MB	SM5310 B-11/14

RL = Reporting Limit

Report of Analysis

Client Sample ID: EB01_20231206_WS	
Lab Sample ID: JD78295-19	Date Sampled: 12/06/23
Matrix: AQ - Equipment Blank	Date Received: 12/06/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2K13892.D	1	12/11/23 14:44	LD	n/a	n/a	V2K381
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane ^a	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride ^b	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^a	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: EB01_20231206_WS
Lab Sample ID: JD78295-19
Matrix: AQ - Equipment Blank
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 12/06/23
Date Received: 12/06/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane ^a	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: EB01_20231206_WS Lab Sample ID: JD78295-19 Matrix: AQ - Equipment Blank Method: SW846 8260D Project: Varian, Beverly, MA	Date Sampled: 12/06/23 Date Received: 12/06/23 Percent Solids: n/a
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4

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		80-120%
17060-07-0	1,2-Dichloroethane-D4	105%		80-120%
2037-26-5	Toluene-D8	98%		80-120%
460-00-4	4-Bromofluorobenzene	97%		82-114%

- (a) Associated CCV outside of control limits high, sample was ND. This compound is outside the MCP limits in the associated BS/BSD biased high.
- (b) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits

SGS Sample Receipt Summary

Job Number: JD78295

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 12/6/2023 10:43:00 PM

Delivery Method: SGS COURIER

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (3.1);

Cooler Temps (Corrected) °C: Cooler 1: (3.1);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smp'l Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | _____ | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s: pH 1-12: 231619 pH 12+: 203117A Other: (Specify) _____

Comments

SM089-03
Rev. Date 12/7/17

JD78295: Chain of Custody

Page 3 of 5

5.1
5

Job Change Order: JD78295

Requested Date: 12/8/2023 Received Date: 12/6/2023
Account Name: Jacobs Engineering Due Date: 12/8/2023
Project Description: Varian, Beverly, MA Deliverable: MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 14

=====
Sample #: JD78295-9 Dept:
Client ID: MW-13_20231205_N_WG TAT: 14
Change: Please revise ID to MW-013-20231205_N_WG

=====
Sample #: JD78295-14 Dept:
Client ID: P-47_20231206_N_WG TAT: 14
Change: Please revise ID to P-04R-20231206_N_WG

JD78295: Chain of Custody
Page 4 of 5

Above Changes Per: Berney Kidd Date/Time: 12/8/2023
To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: JD78295

Requested Date: 12/8/2023 Received Date: 12/6/2023
Account Name: Jacobs Engineering Due Date: 12/8/2023
Project Description: Varian, Beverly, MA Deliverable: MAMCP
C/O Initiated By: VIKTORIYA_ PM: VP TAT (Days): 14

Sample #: JD78295-3, -4, -5, -7

Client ID:

Dept: TAT: 14

Change: Update ID by adding dashes instead of underscores after "STR"

JD78295: Chain of Custody
Page 5 of 5

Above Changes Per: Berney Kidd Date/Time: 12/8/2023

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM

Exhibit VII A

July 1, 2010

Revision No. 1

Final

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD78295
Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD78295-1,JD78295-10,JD78295-11,JD78295-12,JD78295-13,JD78295-14,JD78295-15
JD78295-16,JD78295-17,JD78295-18,JD78295-19,JD78295-2,JD78295-3,JD78295-4
JD78295-5,JD78295-

Matrices: Groundwater/Surface Water (X) Soil/Sediment () Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

¹ **All Negative responses must be addressed in an attached Environmental Laboratory case narrative.**

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 27-Dec-23

5.2
5

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78295

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78295-1	Collected: 04-DEC-23 11:00	By: DK		Received: 06-DEC-23	By: EN	
	CULVERT_OUTFALL_20231204_N_WS					
JD78295-1	SW846 8260D	11-DEC-23 15:16	LD			V8260MCP
JD78295-2	Collected: 04-DEC-23 11:00	By: DK		Received: 06-DEC-23	By: EN	
	CULVERT_OUTFALL_20231204_FD_WS					
JD78295-2	SW846 8260D	11-DEC-23 15:33	LD			V8260MCP
JD78295-3	Collected: 04-DEC-23 13:00	By: DK		Received: 06-DEC-23	By: EN	
	STR-19_20231204_N_WS					
JD78295-3	SW846 8260D	11-DEC-23 15:49	LD			V8260MCP
JD78295-4	Collected: 04-DEC-23 14:30	By: DK		Received: 06-DEC-23	By: EN	
	STR-28_20231204_N_WS					
JD78295-4	SW846 8260D	11-DEC-23 16:05	LD			V8260MCP
JD78295-5	Collected: 04-DEC-23 14:50	By: DK		Received: 06-DEC-23	By: EN	
	STR-20_20231204_N_WS					
JD78295-5	SW846 8260D	11-DEC-23 16:22	LD			V8260MCP
JD78295-6	Collected: 04-DEC-23 15:40	By: DK		Received: 06-DEC-23	By: EN	
	STRMH-02_20231204_N_WS					
JD78295-6	SW846 8260D	11-DEC-23 19:53	LD			V8260MCP
JD78295-7	Collected: 04-DEC-23 15:45	By: DK		Received: 06-DEC-23	By: EN	
	STR-02_20231204_N_WS					
JD78295-7	SW846 8260D	11-DEC-23 20:10	LD			V8260MCP
JD78295-8	Collected: 05-DEC-23 10:30	By: DK		Received: 06-DEC-23	By: EN	
	OB-55-BR_20231205_N_WG					
JD78295-8	SW846 8260D	11-DEC-23 20:26	LD			V8260MCP

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78295

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78295-9 Collected: 05-DEC-23 11:30 By: DK Received: 06-DEC-23 By: EN MW-013_20231205_N_WG						
JD78295-9	SW846 8260D	11-DEC-23 16:38	LD			V8260MCP
JD78295-9	SW846 8260D	11-DEC-23 17:10	LD			V8260MCP
JD78295-10 Collected: 05-DEC-23 12:40 By: DK Received: 06-DEC-23 By: EN P-20R_20231205_N_WG						
JD78295-10	SW846 8260D	11-DEC-23 20:42	LD			V8260MCP
JD78295-11 Collected: 05-DEC-23 12:50 By: DK Received: 06-DEC-23 By: EN OB-20-DO_20231205_N_WG						
JD78295-11	SW846 8260D	11-DEC-23 20:58	LD			V8260MCP
JD78295-12 Collected: 05-DEC-23 13:05 By: DK Received: 06-DEC-23 By: EN GDS-03_20231205_N_WS						
JD78295-12	SW846 8260D	11-DEC-23 21:31	LD			V8260MCP
JD78295-13 Collected: 05-DEC-23 13:30 By: DK Received: 06-DEC-23 By: EN STREAM-A_20231205_N_WS						
JD78295-13	SW846 8260D	11-DEC-23 21:47	LD			V8260MCP
JD78295-14 Collected: 06-DEC-23 11:05 By: DK Received: 06-DEC-23 By: EN P-04R-20231206_N_WG						
JD78295-14	SW846 8260D	11-DEC-23 21:15	LD			V8260MCP
JD78295-15 Collected: 06-DEC-23 13:00 By: DK Received: 06-DEC-23 By: EN TB-06_20231206						
JD78295-15	SW846 8260D	11-DEC-23 14:27	LD			V8260MCP
JD78295-16 Collected: 05-DEC-23 11:00 By: DK Received: 06-DEC-23 By: EN OB-12-DO_20231205_N_WG						

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78295

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78295-16	SW846 8260D	11-DEC-23 16:54	LD			V8260MCP
JD78295-16	SW846 8260D	11-DEC-23 17:27	LD			V8260MCP
JD78295-17 Collected: 06-DEC-23 12:00 By: DK Received: 06-DEC-23 By: EN OB-58-DO_20231206_N_WG						
JD78295-17	SM5310 B-11/14	08-DEC-23 23:19	MB	08-DEC-23	MB	TOC
JD78295-17	SW846 8260D	12-DEC-23 17:59	BN			V8260MCP
JD78295-17	RSK-175	18-DEC-23 11:20	ML			VRSK175DGMEE
JD78295-18 Collected: 06-DEC-23 12:15 By: DK Received: 06-DEC-23 By: EN OB-57-DO_20231206_N_WG						
JD78295-18	SM5310 B-11/14	08-DEC-23 23:54	MB	08-DEC-23	MB	TOC
JD78295-18	SW846 8260D	12-DEC-23 18:24	BN			V8260MCP
JD78295-18	RSK-175	18-DEC-23 11:36	ML			VRSK175DGMEE
JD78295-19 Collected: 06-DEC-23 13:00 By: DK Received: 06-DEC-23 By: EN EB01_20231206_WS						
JD78295-19	SW846 8260D	11-DEC-23 14:44	LD			V8260MCP

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1K381	SW846 8260D						
V1K381-BS	67-64-1	Acetone	BSP	REC	128	%	70-130
V1K381-BS	71-43-2	Benzene	BSP	REC	89	%	70-130
V1K381-BS	108-86-1	Bromobenzene	BSP	REC	90	%	70-130
V1K381-BS	74-97-5	Bromochloromethane	BSP	REC	102	%	70-130
V1K381-BS	75-27-4	Bromodichloromethane	BSP	REC	89	%	70-130
V1K381-BS	75-25-2	Bromoform	BSP	REC	99	%	70-130
V1K381-BS	74-83-9	Bromomethane	BSP	REC	171 ^a	%	70-130
V1K381-BS	78-93-3	2-Butanone (MEK)	BSP	REC	109	%	70-130
V1K381-BS	104-51-8	n-Butylbenzene	BSP	REC	93	%	70-130
V1K381-BS	135-98-8	sec-Butylbenzene	BSP	REC	90	%	70-130
V1K381-BS	98-06-6	tert-Butylbenzene	BSP	REC	89	%	70-130
V1K381-BS	75-15-0	Carbon disulfide	BSP	REC	89	%	70-130
V1K381-BS	56-23-5	Carbon tetrachloride	BSP	REC	86	%	70-130
V1K381-BS	108-90-7	Chlorobenzene	BSP	REC	92	%	70-130
V1K381-BS	75-00-3	Chloroethane	BSP	REC	125	%	70-130
V1K381-BS	67-66-3	Chloroform	BSP	REC	93	%	70-130
V1K381-BS	74-87-3	Chloromethane	BSP	REC	101	%	70-130
V1K381-BS	95-49-8	o-Chlorotoluene	BSP	REC	90	%	70-130
V1K381-BS	106-43-4	p-Chlorotoluene	BSP	REC	87	%	70-130
V1K381-BS	108-20-3	Di-Isopropyl ether	BSP	REC	103	%	70-130
V1K381-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	95	%	70-130
V1K381-BS	124-48-1	Dibromochloromethane	BSP	REC	96	%	70-130
V1K381-BS	106-93-4	1,2-Dibromoethane	BSP	REC	96	%	70-130
V1K381-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	91	%	70-130
V1K381-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V1K381-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	91	%	70-130
V1K381-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	116	%	70-130
V1K381-BS	75-34-3	1,1-Dichloroethane	BSP	REC	96	%	70-130
V1K381-BS	107-06-2	1,2-Dichloroethane	BSP	REC	91	%	70-130
V1K381-BS	75-35-4	1,1-Dichloroethene	BSP	REC	95	%	70-130
V1K381-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	93	%	70-130
V1K381-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	92	%	70-130
V1K381-BS	78-87-5	1,2-Dichloropropane	BSP	REC	93	%	70-130
V1K381-BS	142-28-9	1,3-Dichloropropane	BSP	REC	92	%	70-130
V1K381-BS	594-20-7	2,2-Dichloropropane	BSP	REC	95	%	70-130
V1K381-BS	563-58-6	1,1-Dichloropropene	BSP	REC	96	%	70-130
V1K381-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	95	%	70-130
V1K381-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	95	%	70-130
V1K381-BS	123-91-1	1,4-Dioxane	BSP	REC	86	%	70-130
V1K381-BS	60-29-7	Ethyl Ether	BSP	REC	109	%	70-130
V1K381-BS	100-41-4	Ethylbenzene	BSP	REC	87	%	70-130
V1K381-BS	87-68-3	Hexachlorobutadiene	BSP	REC	90	%	70-130

* Sample used for QC is not from job JD78295

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1K381-BS	591-78-6	2-Hexanone	BSP	REC	101	%	70-130
V1K381-BS	98-82-8	Isopropylbenzene	BSP	REC	92	%	70-130
V1K381-BS	99-87-6	p-Isopropyltoluene	BSP	REC	93	%	70-130
V1K381-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	97	%	70-130
V1K381-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	100	%	70-130
V1K381-BS	74-95-3	Methylene bromide	BSP	REC	93	%	70-130
V1K381-BS	75-09-2	Methylene chloride	BSP	REC	92	%	70-130
V1K381-BS	91-20-3	Naphthalene	BSP	REC	94	%	70-130
V1K381-BS	103-65-1	n-Propylbenzene	BSP	REC	87	%	70-130
V1K381-BS	100-42-5	Styrene	BSP	REC	94	%	70-130
V1K381-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	93	%	70-130
V1K381-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	104	%	70-130
V1K381-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	99	%	70-130
V1K381-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	94	%	70-130
V1K381-BS	127-18-4	Tetrachloroethene	BSP	REC	91	%	70-130
V1K381-BS	109-99-9	Tetrahydrofuran	BSP	REC	92	%	70-130
V1K381-BS	108-88-3	Toluene	BSP	REC	89	%	70-130
V1K381-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	95	%	70-130
V1K381-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	94	%	70-130
V1K381-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	97	%	70-130
V1K381-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	93	%	70-130
V1K381-BS	79-01-6	Trichloroethene	BSP	REC	91	%	70-130
V1K381-BS	75-69-4	Trichlorofluoromethane	BSP	REC	128	%	70-130
V1K381-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	96	%	70-130
V1K381-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	92	%	70-130
V1K381-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	91	%	70-130
V1K381-BS	75-01-4	Vinyl chloride	BSP	REC	100	%	70-130
V1K381-BS		m,p-Xylene	BSP	REC	91	%	70-130
V1K381-BS	95-47-6	o-Xylene	BSP	REC	94	%	70-130
V1K381-BS	1330-20-7	Xylene (total)	BSP	REC	92	%	70-130
V1K381-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	105	%	70-130
V1K381-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	70-130
V1K381-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	96	%	70-130
V1K381-BSD	67-64-1	Acetone	BSD	REC	132	%	70-130
V1K381-BSD	67-64-1	Acetone	BSD	RPD	3	%	20
V1K381-BSD	71-43-2	Benzene	BSD	REC	92	%	70-130
V1K381-BSD	71-43-2	Benzene	BSD	RPD	3	%	20
V1K381-BSD	108-86-1	Bromobenzene	BSD	REC	93	%	70-130
V1K381-BSD	108-86-1	Bromobenzene	BSD	RPD	4	%	20
V1K381-BSD	74-97-5	Bromochloromethane	BSD	REC	104	%	70-130
V1K381-BSD	74-97-5	Bromochloromethane	BSD	RPD	2	%	20
V1K381-BSD	75-27-4	Bromodichloromethane	BSD	REC	94	%	70-130
V1K381-BSD	75-27-4	Bromodichloromethane	BSD	RPD	5	%	20
V1K381-BSD	75-25-2	Bromoform	BSD	REC	102	%	70-130
V1K381-BSD	75-25-2	Bromoform	BSD	RPD	3	%	20

* Sample used for QC is not from job JD78295

5.4
5

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1K381-BSD	74-83-9	Bromomethane	BSD	REC	186 ^a	%	70-130
V1K381-BSD	74-83-9	Bromomethane	BSD	RPD	8	%	20
V1K381-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	113	%	70-130
V1K381-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	3	%	20
V1K381-BSD	104-51-8	n-Butylbenzene	BSD	REC	97	%	70-130
V1K381-BSD	104-51-8	n-Butylbenzene	BSD	RPD	4	%	20
V1K381-BSD	135-98-8	sec-Butylbenzene	BSD	REC	94	%	70-130
V1K381-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	5	%	20
V1K381-BSD	98-06-6	tert-Butylbenzene	BSD	REC	92	%	70-130
V1K381-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V1K381-BSD	75-15-0	Carbon disulfide	BSD	REC	94	%	70-130
V1K381-BSD	75-15-0	Carbon disulfide	BSD	RPD	6	%	20
V1K381-BSD	56-23-5	Carbon tetrachloride	BSD	REC	90	%	70-130
V1K381-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V1K381-BSD	108-90-7	Chlorobenzene	BSD	REC	93	%	70-130
V1K381-BSD	108-90-7	Chlorobenzene	BSD	RPD	2	%	20
V1K381-BSD	75-00-3	Chloroethane	BSD	REC	126	%	70-130
V1K381-BSD	75-00-3	Chloroethane	BSD	RPD	1	%	20
V1K381-BSD	67-66-3	Chloroform	BSD	REC	96	%	70-130
V1K381-BSD	67-66-3	Chloroform	BSD	RPD	4	%	20
V1K381-BSD	74-87-3	Chloromethane	BSD	REC	110	%	70-130
V1K381-BSD	74-87-3	Chloromethane	BSD	RPD	9	%	20
V1K381-BSD	95-49-8	o-Chlorotoluene	BSD	REC	92	%	70-130
V1K381-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V1K381-BSD	106-43-4	p-Chlorotoluene	BSD	REC	89	%	70-130
V1K381-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	3	%	20
V1K381-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	107	%	70-130
V1K381-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	4	%	20
V1K381-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	100	%	70-130
V1K381-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	5	%	20
V1K381-BSD	124-48-1	Dibromochloromethane	BSD	REC	99	%	70-130
V1K381-BSD	124-48-1	Dibromochloromethane	BSD	RPD	3	%	20
V1K381-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	97	%	70-130
V1K381-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V1K381-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	95	%	70-130
V1K381-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	4	%	20
V1K381-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	94	%	70-130
V1K381-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	4	%	20
V1K381-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	94	%	70-130
V1K381-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V1K381-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	121	%	70-130
V1K381-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	4	%	20
V1K381-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	100	%	70-130
V1K381-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	4	%	20
V1K381-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	92	%	70-130

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1K381-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	1	%	20
V1K381-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	99	%	70-130
V1K381-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	4	%	20
V1K381-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	94	%	70-130
V1K381-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V1K381-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	95	%	70-130
V1K381-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	3	%	20
V1K381-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	97	%	70-130
V1K381-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	4	%	20
V1K381-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	94	%	70-130
V1K381-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	2	%	20
V1K381-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	99	%	70-130
V1K381-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	4	%	20
V1K381-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	99	%	70-130
V1K381-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	3	%	20
V1K381-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	98	%	70-130
V1K381-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	4	%	20
V1K381-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	99	%	70-130
V1K381-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	4	%	20
V1K381-BSD	123-91-1	1,4-Dioxane	BSD	REC	96	%	70-130
V1K381-BSD	123-91-1	1,4-Dioxane	BSD	RPD	11	%	20
V1K381-BSD	60-29-7	Ethyl Ether	BSD	REC	111	%	70-130
V1K381-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V1K381-BSD	100-41-4	Ethylbenzene	BSD	REC	89	%	70-130
V1K381-BSD	100-41-4	Ethylbenzene	BSD	RPD	2	%	20
V1K381-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	95	%	70-130
V1K381-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	5	%	20
V1K381-BSD	591-78-6	2-Hexanone	BSD	REC	105	%	70-130
V1K381-BSD	591-78-6	2-Hexanone	BSD	RPD	4	%	20
V1K381-BSD	98-82-8	Isopropylbenzene	BSD	REC	95	%	70-130
V1K381-BSD	98-82-8	Isopropylbenzene	BSD	RPD	3	%	20
V1K381-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	96	%	70-130
V1K381-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	3	%	20
V1K381-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	99	%	70-130
V1K381-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	2	%	20
V1K381-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	103	%	70-130
V1K381-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	2	%	20
V1K381-BSD	74-95-3	Methylene bromide	BSD	REC	95	%	70-130
V1K381-BSD	74-95-3	Methylene bromide	BSD	RPD	2	%	20
V1K381-BSD	75-09-2	Methylene chloride	BSD	REC	95	%	70-130
V1K381-BSD	75-09-2	Methylene chloride	BSD	RPD	3	%	20
V1K381-BSD	91-20-3	Naphthalene	BSD	REC	97	%	70-130
V1K381-BSD	91-20-3	Naphthalene	BSD	RPD	3	%	20
V1K381-BSD	103-65-1	n-Propylbenzene	BSD	REC	90	%	70-130
V1K381-BSD	103-65-1	n-Propylbenzene	BSD	RPD	4	%	20

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1K381-BSD	100-42-5	Styrene	BSD	REC	96	%	70-130
V1K381-BSD	100-42-5	Styrene	BSD	RPD	3	%	20
V1K381-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	95	%	70-130
V1K381-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	2	%	20
V1K381-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	107	%	70-130
V1K381-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	3	%	20
V1K381-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	100	%	70-130
V1K381-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V1K381-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	96	%	70-130
V1K381-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	2	%	20
V1K381-BSD	127-18-4	Tetrachloroethene	BSD	REC	95	%	70-130
V1K381-BSD	127-18-4	Tetrachloroethene	BSD	RPD	5	%	20
V1K381-BSD	109-99-9	Tetrahydrofuran	BSD	REC	95	%	70-130
V1K381-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	3	%	20
V1K381-BSD	108-88-3	Toluene	BSD	REC	91	%	70-130
V1K381-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V1K381-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	98	%	70-130
V1K381-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	4	%	25
V1K381-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	97	%	70-130
V1K381-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	4	%	20
V1K381-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	98	%	70-130
V1K381-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	2	%	20
V1K381-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V1K381-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	2	%	20
V1K381-BSD	79-01-6	Trichloroethene	BSD	REC	93	%	70-130
V1K381-BSD	79-01-6	Trichloroethene	BSD	RPD	2	%	20
V1K381-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	128	%	70-130
V1K381-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	1	%	20
V1K381-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	99	%	70-130
V1K381-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	3	%	20
V1K381-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	96	%	70-130
V1K381-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	4	%	20
V1K381-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	94	%	70-130
V1K381-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	3	%	20
V1K381-BSD	75-01-4	Vinyl chloride	BSD	REC	108	%	70-130
V1K381-BSD	75-01-4	Vinyl chloride	BSD	RPD	8	%	20
V1K381-BSD		m,p-Xylene	BSD	REC	94	%	70-130
V1K381-BSD		m,p-Xylene	BSD	RPD	3	%	20
V1K381-BSD	95-47-6	o-Xylene	BSD	REC	96	%	70-130
V1K381-BSD	95-47-6	o-Xylene	BSD	RPD	2	%	20
V1K381-BSD	1330-20-7	Xylene (total)	BSD	REC	95	%	70-130
V1K381-BSD	1330-20-7	Xylene (total)	BSD	RPD	3	%	20
V1K381-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	106	%	70-130
V1K381-BSD	2037-26-5	Toluene-D8	BSD	SURR	98	%	70-130
V1K381-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	96	%	70-130

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V1K381-MB	1868-53-7	Dibromofluoromethane	MB	SURR	108	%	70-130
V1K381-MB	2037-26-5	Toluene-D8	MB	SURR	97	%	70-130
V1K381-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	98	%	70-130
JD78295-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	110	%	70-130
JD78295-2	2037-26-5	Toluene-D8	SAMP	SURR	97	%	70-130
JD78295-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-4	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	70-130
JD78295-4	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-4	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	70-130
JD78295-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	104	%	70-130
JD78295-6	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	96	%	70-130
JD78295-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78295-8	2037-26-5	Toluene-D8	SAMP	SURR	101	%	70-130
JD78295-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	107	%	70-130
JD78295-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	105	%	70-130
JD78295-9	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-9	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-11	1868-53-7	Dibromofluoromethane	SAMP	SURR	104	%	70-130
JD78295-11	2037-26-5	Toluene-D8	SAMP	SURR	94	%	70-130
JD78295-11	460-00-4	4-Bromofluorobenzene	SAMP	SURR	92	%	70-130
JD78295-12	1868-53-7	Dibromofluoromethane	SAMP	SURR	105	%	70-130
JD78295-12	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD78295-12	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	70-130
JD78295-15	1868-53-7	Dibromofluoromethane	SAMP	SURR	107	%	70-130
JD78295-15	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD78295-15	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	70-130
V2K381	SW846 8260D						
V2K381-BS	67-64-1	Acetone	BSP	REC	134	%	70-130
V2K381-BS	71-43-2	Benzene	BSP	REC	98	%	70-130
V2K381-BS	108-86-1	Bromobenzene	BSP	REC	99	%	70-130
V2K381-BS	74-97-5	Bromochloromethane	BSP	REC	103	%	70-130
V2K381-BS	75-27-4	Bromodichloromethane	BSP	REC	97	%	70-130
V2K381-BS	75-25-2	Bromoform	BSP	REC	100	%	70-130
V2K381-BS	74-83-9	Bromomethane	BSP	REC	162	%	70-130
V2K381-BS	78-93-3	2-Butanone (MEK)	BSP	REC	113	%	70-130
V2K381-BS	104-51-8	n-Butylbenzene	BSP	REC	100	%	70-130
V2K381-BS	135-98-8	sec-Butylbenzene	BSP	REC	98	%	70-130
V2K381-BS	98-06-6	tert-Butylbenzene	BSP	REC	95	%	70-130
V2K381-BS	75-15-0	Carbon disulfide	BSP	REC	98	%	70-130

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2K381-BS	56-23-5	Carbon tetrachloride	BSP	REC	94	%	70-130
V2K381-BS	108-90-7	Chlorobenzene	BSP	REC	97	%	70-130
V2K381-BS	75-00-3	Chloroethane	BSP	REC	140	%	70-130
V2K381-BS	67-66-3	Chloroform	BSP	REC	101	%	70-130
V2K381-BS	74-87-3	Chloromethane	BSP	REC	118	%	70-130
V2K381-BS	95-49-8	o-Chlorotoluene	BSP	REC	95	%	70-130
V2K381-BS	106-43-4	p-Chlorotoluene	BSP	REC	94	%	70-130
V2K381-BS	108-20-3	Di-Isopropyl ether	BSP	REC	106	%	70-130
V2K381-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	101	%	70-130
V2K381-BS	124-48-1	Dibromochloromethane	BSP	REC	100	%	70-130
V2K381-BS	106-93-4	1,2-Dibromoethane	BSP	REC	98	%	70-130
V2K381-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	98	%	70-130
V2K381-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	98	%	70-130
V2K381-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	94	%	70-130
V2K381-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	123	%	70-130
V2K381-BS	75-34-3	1,1-Dichloroethane	BSP	REC	105	%	70-130
V2K381-BS	107-06-2	1,2-Dichloroethane	BSP	REC	94	%	70-130
V2K381-BS	75-35-4	1,1-Dichloroethene	BSP	REC	107	%	70-130
V2K381-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	100	%	70-130
V2K381-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	99	%	70-130
V2K381-BS	78-87-5	1,2-Dichloropropane	BSP	REC	99	%	70-130
V2K381-BS	142-28-9	1,3-Dichloropropane	BSP	REC	97	%	70-130
V2K381-BS	594-20-7	2,2-Dichloropropane	BSP	REC	103	%	70-130
V2K381-BS	563-58-6	1,1-Dichloropropene	BSP	REC	105	%	70-130
V2K381-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	100	%	70-130
V2K381-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	100	%	70-130
V2K381-BS	123-91-1	1,4-Dioxane	BSP	REC	92	%	70-130
V2K381-BS	60-29-7	Ethyl Ether	BSP	REC	118	%	70-130
V2K381-BS	100-41-4	Ethylbenzene	BSP	REC	93	%	70-130
V2K381-BS	87-68-3	Hexachlorobutadiene	BSP	REC	94	%	70-130
V2K381-BS	591-78-6	2-Hexanone	BSP	REC	105	%	70-130
V2K381-BS	98-82-8	Isopropylbenzene	BSP	REC	98	%	70-130
V2K381-BS	99-87-6	p-Isopropyltoluene	BSP	REC	98	%	70-130
V2K381-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	104	%	70-130
V2K381-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	104	%	70-130
V2K381-BS	74-95-3	Methylene bromide	BSP	REC	95	%	70-130
V2K381-BS	75-09-2	Methylene chloride	BSP	REC	101	%	70-130
V2K381-BS	91-20-3	Naphthalene	BSP	REC	90	%	70-130
V2K381-BS	103-65-1	n-Propylbenzene	BSP	REC	96	%	70-130
V2K381-BS	100-42-5	Styrene	BSP	REC	98	%	70-130
V2K381-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	97	%	70-130
V2K381-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	108	%	70-130
V2K381-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	106	%	70-130
V2K381-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	98	%	70-130
V2K381-BS	127-18-4	Tetrachloroethene	BSP	REC	100	%	70-130

* Sample used for QC is not from job JD78295

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2K381-BS	109-99-9	Tetrahydrofuran	BSP	REC	93	%	70-130
V2K381-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V2K381-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	97	%	70-130
V2K381-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	97	%	70-130
V2K381-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	102	%	70-130
V2K381-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	96	%	70-130
V2K381-BS	79-01-6	Trichloroethene	BSP	REC	102	%	70-130
V2K381-BS	75-69-4	Trichlorofluoromethane	BSP	REC	140 ^a	%	70-130
V2K381-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	96	%	70-130
V2K381-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	96	%	70-130
V2K381-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	96	%	70-130
V2K381-BS	75-01-4	Vinyl chloride	BSP	REC	113	%	70-130
V2K381-BS		m,p-Xylene	BSP	REC	97	%	70-130
V2K381-BS	95-47-6	o-Xylene	BSP	REC	98	%	70-130
V2K381-BS	1330-20-7	Xylene (total)	BSP	REC	97	%	70-130
V2K381-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	106	%	70-130
V2K381-BS	2037-26-5	Toluene-D8	BSP	SURR	97	%	70-130
V2K381-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	96	%	70-130
V2K381-BSD	67-64-1	Acetone	BSD	REC	132	%	70-130
V2K381-BSD	67-64-1	Acetone	BSD	RPD	2	%	20
V2K381-BSD	71-43-2	Benzene	BSD	REC	99	%	70-130
V2K381-BSD	71-43-2	Benzene	BSD	RPD	2	%	20
V2K381-BSD	108-86-1	Bromobenzene	BSD	REC	100	%	70-130
V2K381-BSD	108-86-1	Bromobenzene	BSD	RPD	1	%	20
V2K381-BSD	74-97-5	Bromochloromethane	BSD	REC	102	%	70-130
V2K381-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V2K381-BSD	75-27-4	Bromodichloromethane	BSD	REC	99	%	70-130
V2K381-BSD	75-27-4	Bromodichloromethane	BSD	RPD	2	%	20
V2K381-BSD	75-25-2	Bromoform	BSD	REC	102	%	70-130
V2K381-BSD	75-25-2	Bromoform	BSD	RPD	2	%	20
V2K381-BSD	74-83-9	Bromomethane	BSD	REC	179 ^a	%	70-130
V2K381-BSD	74-83-9	Bromomethane	BSD	RPD	10	%	20
V2K381-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	114	%	70-130
V2K381-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	0	%	20
V2K381-BSD	104-51-8	n-Butylbenzene	BSD	REC	103	%	70-130
V2K381-BSD	104-51-8	n-Butylbenzene	BSD	RPD	3	%	20
V2K381-BSD	135-98-8	sec-Butylbenzene	BSD	REC	101	%	70-130
V2K381-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	3	%	20
V2K381-BSD	98-06-6	tert-Butylbenzene	BSD	REC	99	%	70-130
V2K381-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	4	%	20
V2K381-BSD	75-15-0	Carbon disulfide	BSD	REC	101	%	70-130
V2K381-BSD	75-15-0	Carbon disulfide	BSD	RPD	3	%	20
V2K381-BSD	56-23-5	Carbon tetrachloride	BSD	REC	98	%	70-130
V2K381-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	4	%	20
V2K381-BSD	108-90-7	Chlorobenzene	BSD	REC	99	%	70-130

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2K381-BSD	108-90-7	Chlorobenzene	BSD	RPD	2	%	20
V2K381-BSD	75-00-3	Chloroethane	BSD	REC	139	%	70-130
V2K381-BSD	75-00-3	Chloroethane	BSD	RPD	0	%	20
V2K381-BSD	67-66-3	Chloroform	BSD	REC	101	%	70-130
V2K381-BSD	67-66-3	Chloroform	BSD	RPD	1	%	20
V2K381-BSD	74-87-3	Chloromethane	BSD	REC	128	%	70-130
V2K381-BSD	74-87-3	Chloromethane	BSD	RPD	8	%	20
V2K381-BSD	95-49-8	o-Chlorotoluene	BSD	REC	97	%	70-130
V2K381-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V2K381-BSD	106-43-4	p-Chlorotoluene	BSD	REC	97	%	70-130
V2K381-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	3	%	20
V2K381-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	105	%	70-130
V2K381-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	2	%	20
V2K381-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	103	%	70-130
V2K381-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V2K381-BSD	124-48-1	Dibromochloromethane	BSD	REC	102	%	70-130
V2K381-BSD	124-48-1	Dibromochloromethane	BSD	RPD	2	%	20
V2K381-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	99	%	70-130
V2K381-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V2K381-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	100	%	70-130
V2K381-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	2	%	20
V2K381-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	100	%	70-130
V2K381-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	1	%	20
V2K381-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	97	%	70-130
V2K381-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	3	%	20
V2K381-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	129	%	70-130
V2K381-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	4	%	20
V2K381-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	103	%	70-130
V2K381-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	2	%	20
V2K381-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	95	%	70-130
V2K381-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	0	%	20
V2K381-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	108	%	70-130
V2K381-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	1	%	20
V2K381-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	102	%	70-130
V2K381-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	2	%	20
V2K381-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	102	%	70-130
V2K381-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	3	%	20
V2K381-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	102	%	70-130
V2K381-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	4	%	20
V2K381-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	98	%	70-130
V2K381-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	1	%	20
V2K381-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	105	%	70-130
V2K381-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	1	%	20
V2K381-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	107	%	70-130
V2K381-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	2	%	20

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2K381-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	102	%	70-130
V2K381-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	2	%	20
V2K381-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	102	%	70-130
V2K381-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V2K381-BSD	123-91-1	1,4-Dioxane	BSD	REC	102	%	70-130
V2K381-BSD	123-91-1	1,4-Dioxane	BSD	RPD	10	%	20
V2K381-BSD	60-29-7	Ethyl Ether	BSD	REC	115	%	70-130
V2K381-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V2K381-BSD	100-41-4	Ethylbenzene	BSD	REC	95	%	70-130
V2K381-BSD	100-41-4	Ethylbenzene	BSD	RPD	3	%	20
V2K381-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	97	%	70-130
V2K381-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	4	%	20
V2K381-BSD	591-78-6	2-Hexanone	BSD	REC	106	%	70-130
V2K381-BSD	591-78-6	2-Hexanone	BSD	RPD	1	%	20
V2K381-BSD	98-82-8	Isopropylbenzene	BSD	REC	101	%	70-130
V2K381-BSD	98-82-8	Isopropylbenzene	BSD	RPD	3	%	20
V2K381-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	102	%	70-130
V2K381-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	4	%	20
V2K381-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	107	%	70-130
V2K381-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	3	%	20
V2K381-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	105	%	70-130
V2K381-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	1	%	20
V2K381-BSD	74-95-3	Methylene bromide	BSD	REC	96	%	70-130
V2K381-BSD	74-95-3	Methylene bromide	BSD	RPD	1	%	20
V2K381-BSD	75-09-2	Methylene chloride	BSD	REC	103	%	70-130
V2K381-BSD	75-09-2	Methylene chloride	BSD	RPD	2	%	20
V2K381-BSD	91-20-3	Naphthalene	BSD	REC	92	%	70-130
V2K381-BSD	91-20-3	Naphthalene	BSD	RPD	2	%	20
V2K381-BSD	103-65-1	n-Propylbenzene	BSD	REC	99	%	70-130
V2K381-BSD	103-65-1	n-Propylbenzene	BSD	RPD	3	%	20
V2K381-BSD	100-42-5	Styrene	BSD	REC	100	%	70-130
V2K381-BSD	100-42-5	Styrene	BSD	RPD	2	%	20
V2K381-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	97	%	70-130
V2K381-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V2K381-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	108	%	70-130
V2K381-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	0	%	20
V2K381-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	106	%	70-130
V2K381-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	0	%	20
V2K381-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	97	%	70-130
V2K381-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	1	%	20
V2K381-BSD	127-18-4	Tetrachloroethene	BSD	REC	104	%	70-130
V2K381-BSD	127-18-4	Tetrachloroethene	BSD	RPD	4	%	20
V2K381-BSD	109-99-9	Tetrahydrofuran	BSD	REC	107	%	70-130
V2K381-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	14	%	20
V2K381-BSD	108-88-3	Toluene	BSD	REC	97	%	70-130

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2K381-BSD	108-88-3	Toluene	BSD	RPD	4	%	20
V2K381-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	99	%	70-130
V2K381-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	2	%	25
V2K381-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	99	%	70-130
V2K381-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	2	%	20
V2K381-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	103	%	70-130
V2K381-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	2	%	20
V2K381-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	97	%	70-130
V2K381-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	1	%	20
V2K381-BSD	79-01-6	Trichloroethene	BSD	REC	104	%	70-130
V2K381-BSD	79-01-6	Trichloroethene	BSD	RPD	2	%	20
V2K381-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	143 ^a	%	70-130
V2K381-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	2	%	20
V2K381-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	96	%	70-130
V2K381-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	0	%	20
V2K381-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	99	%	70-130
V2K381-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	3	%	20
V2K381-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	99	%	70-130
V2K381-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	2	%	20
V2K381-BSD	75-01-4	Vinyl chloride	BSD	REC	118	%	70-130
V2K381-BSD	75-01-4	Vinyl chloride	BSD	RPD	5	%	20
V2K381-BSD		m,p-Xylene	BSD	REC	100	%	70-130
V2K381-BSD		m,p-Xylene	BSD	RPD	3	%	20
V2K381-BSD	95-47-6	o-Xylene	BSD	REC	100	%	70-130
V2K381-BSD	95-47-6	o-Xylene	BSD	RPD	2	%	20
V2K381-BSD	1330-20-7	Xylene (total)	BSD	REC	100	%	70-130
V2K381-BSD	1330-20-7	Xylene (total)	BSD	RPD	3	%	20
V2K381-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	105	%	70-130
V2K381-BSD	2037-26-5	Toluene-D8	BSD	SURR	98	%	70-130
V2K381-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	96	%	70-130
V2K381-MB	1868-53-7	Dibromofluoromethane	MB	SURR	106	%	70-130
V2K381-MB	2037-26-5	Toluene-D8	MB	SURR	97	%	70-130
V2K381-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	96	%	70-130
JD78295-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	109	%	70-130
JD78295-1	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	70-130
JD78295-3	1868-53-7	Dibromofluoromethane	SAMP	SURR	109	%	70-130
JD78295-3	2037-26-5	Toluene-D8	SAMP	SURR	94	%	70-130
JD78295-3	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-5	1868-53-7	Dibromofluoromethane	SAMP	SURR	105	%	70-130
JD78295-5	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-5	460-00-4	4-Bromofluorobenzene	SAMP	SURR	98	%	70-130
JD78295-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	70-130
JD78295-7	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD78295-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	70-130

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
JD78295-10	1868-53-7	Dibromofluoromethane	SAMP	SURR	98	%	70-130
JD78295-10	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-10	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-13	1868-53-7	Dibromofluoromethane	SAMP	SURR	107	%	70-130
JD78295-13	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-13	460-00-4	4-Bromofluorobenzene	SAMP	SURR	105	%	70-130
JD78295-14	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	70-130
JD78295-14	2037-26-5	Toluene-D8	SAMP	SURR	105	%	70-130
JD78295-14	460-00-4	4-Bromofluorobenzene	SAMP	SURR	95	%	70-130
JD78295-16	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	70-130
JD78295-16	1868-53-7	Dibromofluoromethane	SAMP	SURR	106	%	70-130
JD78295-16	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-16	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78295-16	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130
JD78295-16	460-00-4	4-Bromofluorobenzene	SAMP	SURR	99	%	70-130
JD78295-19	1868-53-7	Dibromofluoromethane	SAMP	SURR	107	%	70-130
JD78295-19	2037-26-5	Toluene-D8	SAMP	SURR	98	%	70-130
JD78295-19	460-00-4	4-Bromofluorobenzene	SAMP	SURR	97	%	70-130

V2V4090 SW846 8260D

V2V4090-BS	67-64-1	Acetone	BSP	REC	105	%	70-130
V2V4090-BS	71-43-2	Benzene	BSP	REC	100	%	70-130
V2V4090-BS	108-86-1	Bromobenzene	BSP	REC	91	%	70-130
V2V4090-BS	74-97-5	Bromochloromethane	BSP	REC	102	%	70-130
V2V4090-BS	75-27-4	Bromodichloromethane	BSP	REC	100	%	70-130
V2V4090-BS	75-25-2	Bromoform	BSP	REC	102	%	70-130
V2V4090-BS	74-83-9	Bromomethane	BSP	REC	96	%	70-130
V2V4090-BS	78-93-3	2-Butanone (MEK)	BSP	REC	110	%	70-130
V2V4090-BS	104-51-8	n-Butylbenzene	BSP	REC	93	%	70-130
V2V4090-BS	135-98-8	sec-Butylbenzene	BSP	REC	89	%	70-130
V2V4090-BS	98-06-6	tert-Butylbenzene	BSP	REC	87	%	70-130
V2V4090-BS	75-15-0	Carbon disulfide	BSP	REC	102	%	70-130
V2V4090-BS	56-23-5	Carbon tetrachloride	BSP	REC	97	%	70-130
V2V4090-BS	108-90-7	Chlorobenzene	BSP	REC	91	%	70-130
V2V4090-BS	75-00-3	Chloroethane	BSP	REC	117	%	70-130
V2V4090-BS	67-66-3	Chloroform	BSP	REC	94	%	70-130
V2V4090-BS	74-87-3	Chloromethane	BSP	REC	102	%	70-130
V2V4090-BS	95-49-8	o-Chlorotoluene	BSP	REC	92	%	70-130
V2V4090-BS	106-43-4	p-Chlorotoluene	BSP	REC	90	%	70-130
V2V4090-BS	108-20-3	Di-Isopropyl ether	BSP	REC	108	%	70-130
V2V4090-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	98	%	70-130
V2V4090-BS	124-48-1	Dibromochloromethane	BSP	REC	101	%	70-130
V2V4090-BS	106-93-4	1,2-Dibromoethane	BSP	REC	98	%	70-130
V2V4090-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	90	%	70-130

* Sample used for QC is not from job JD78295

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V2V4090-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	89	%	70-130
V2V4090-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	72	%	70-130
V2V4090-BS	75-34-3	1,1-Dichloroethane	BSP	REC	104	%	70-130
V2V4090-BS	107-06-2	1,2-Dichloroethane	BSP	REC	98	%	70-130
V2V4090-BS	75-35-4	1,1-Dichloroethene	BSP	REC	108	%	70-130
V2V4090-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	102	%	70-130
V2V4090-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	100	%	70-130
V2V4090-BS	78-87-5	1,2-Dichloropropane	BSP	REC	103	%	70-130
V2V4090-BS	142-28-9	1,3-Dichloropropane	BSP	REC	99	%	70-130
V2V4090-BS	594-20-7	2,2-Dichloropropane	BSP	REC	102	%	70-130
V2V4090-BS	563-58-6	1,1-Dichloropropene	BSP	REC	99	%	70-130
V2V4090-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	106	%	70-130
V2V4090-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	106	%	70-130
V2V4090-BS	123-91-1	1,4-Dioxane	BSP	REC	102	%	70-130
V2V4090-BS	60-29-7	Ethyl Ether	BSP	REC	110	%	70-130
V2V4090-BS	100-41-4	Ethylbenzene	BSP	REC	92	%	70-130
V2V4090-BS	87-68-3	Hexachlorobutadiene	BSP	REC	80	%	70-130
V2V4090-BS	591-78-6	2-Hexanone	BSP	REC	105	%	70-130
V2V4090-BS	98-82-8	Isopropylbenzene	BSP	REC	93	%	70-130
V2V4090-BS	99-87-6	p-Isopropyltoluene	BSP	REC	91	%	70-130
V2V4090-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	107	%	70-130
V2V4090-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	106	%	70-130
V2V4090-BS	74-95-3	Methylene bromide	BSP	REC	98	%	70-130
V2V4090-BS	75-09-2	Methylene chloride	BSP	REC	101	%	70-130
V2V4090-BS	91-20-3	Naphthalene	BSP	REC	90	%	70-130
V2V4090-BS	103-65-1	n-Propylbenzene	BSP	REC	90	%	70-130
V2V4090-BS	100-42-5	Styrene	BSP	REC	96	%	70-130
V2V4090-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	102	%	70-130
V2V4090-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	106	%	70-130
V2V4090-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	97	%	70-130
V2V4090-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	102	%	70-130
V2V4090-BS	127-18-4	Tetrachloroethene	BSP	REC	91	%	70-130
V2V4090-BS	109-99-9	Tetrahydrofuran	BSP	REC	107	%	70-130
V2V4090-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V2V4090-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	91	%	70-130
V2V4090-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	91	%	70-130
V2V4090-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	96	%	70-130
V2V4090-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	98	%	70-130
V2V4090-BS	79-01-6	Trichloroethene	BSP	REC	93	%	70-130
V2V4090-BS	75-69-4	Trichlorofluoromethane	BSP	REC	97	%	70-130
V2V4090-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	94	%	70-130
V2V4090-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	90	%	70-130
V2V4090-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	90	%	70-130
V2V4090-BS	75-01-4	Vinyl chloride	BSP	REC	104	%	70-130

* Sample used for QC is not from job JD78295

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BS		m,p-Xylene	BSP	REC	92	%	70-130
V2V4090-BS	95-47-6	o-Xylene	BSP	REC	92	%	70-130
V2V4090-BS	1330-20-7	Xylene (total)	BSP	REC	92	%	70-130
V2V4090-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	101	%	70-130
V2V4090-BS	2037-26-5	Toluene-D8	BSP	SURR	99	%	70-130
V2V4090-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	100	%	70-130
V2V4090-BSD	67-64-1	Acetone	BSD	REC	99	%	70-130
V2V4090-BSD	67-64-1	Acetone	BSD	RPD	5	%	20
V2V4090-BSD	71-43-2	Benzene	BSD	REC	102	%	70-130
V2V4090-BSD	71-43-2	Benzene	BSD	RPD	3	%	20
V2V4090-BSD	108-86-1	Bromobenzene	BSD	REC	93	%	70-130
V2V4090-BSD	108-86-1	Bromobenzene	BSD	RPD	2	%	20
V2V4090-BSD	74-97-5	Bromochloromethane	BSD	REC	103	%	70-130
V2V4090-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V2V4090-BSD	75-27-4	Bromodichloromethane	BSD	REC	100	%	70-130
V2V4090-BSD	75-27-4	Bromodichloromethane	BSD	RPD	1	%	20
V2V4090-BSD	75-25-2	Bromoform	BSD	REC	101	%	70-130
V2V4090-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20
V2V4090-BSD	74-83-9	Bromomethane	BSD	REC	101	%	70-130
V2V4090-BSD	74-83-9	Bromomethane	BSD	RPD	5	%	20
V2V4090-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	105	%	70-130
V2V4090-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	5	%	20
V2V4090-BSD	104-51-8	n-Butylbenzene	BSD	REC	95	%	70-130
V2V4090-BSD	104-51-8	n-Butylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V2V4090-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	4	%	20
V2V4090-BSD	98-06-6	tert-Butylbenzene	BSD	REC	90	%	70-130
V2V4090-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	75-15-0	Carbon disulfide	BSD	REC	108	%	70-130
V2V4090-BSD	75-15-0	Carbon disulfide	BSD	RPD	6	%	20
V2V4090-BSD	56-23-5	Carbon tetrachloride	BSD	REC	102	%	70-130
V2V4090-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V2V4090-BSD	108-90-7	Chlorobenzene	BSD	REC	93	%	70-130
V2V4090-BSD	108-90-7	Chlorobenzene	BSD	RPD	2	%	20
V2V4090-BSD	75-00-3	Chloroethane	BSD	REC	125	%	70-130
V2V4090-BSD	75-00-3	Chloroethane	BSD	RPD	6	%	20
V2V4090-BSD	67-66-3	Chloroform	BSD	REC	97	%	70-130
V2V4090-BSD	67-66-3	Chloroform	BSD	RPD	3	%	20
V2V4090-BSD	74-87-3	Chloromethane	BSD	REC	107	%	70-130
V2V4090-BSD	74-87-3	Chloromethane	BSD	RPD	5	%	20
V2V4090-BSD	95-49-8	o-Chlorotoluene	BSD	REC	94	%	70-130
V2V4090-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V2V4090-BSD	106-43-4	p-Chlorotoluene	BSD	REC	92	%	70-130
V2V4090-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V2V4090-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	108	%	70-130

* Sample used for QC is not from job JD78295

QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	1	%	20
V2V4090-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	96	%	70-130
V2V4090-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V2V4090-BSD	124-48-1	Dibromochloromethane	BSD	REC	100	%	70-130
V2V4090-BSD	124-48-1	Dibromochloromethane	BSD	RPD	1	%	20
V2V4090-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	97	%	70-130
V2V4090-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V2V4090-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	91	%	70-130
V2V4090-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	1	%	20
V2V4090-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	91	%	70-130
V2V4090-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V2V4090-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	90	%	70-130
V2V4090-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	1	%	20
V2V4090-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	83	%	70-130
V2V4090-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	15	%	20
V2V4090-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	107	%	70-130
V2V4090-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V2V4090-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	97	%	70-130
V2V4090-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	1	%	20
V2V4090-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	110	%	70-130
V2V4090-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V2V4090-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	105	%	70-130
V2V4090-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	3	%	20
V2V4090-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	104	%	70-130
V2V4090-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	4	%	20
V2V4090-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	104	%	70-130
V2V4090-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	1	%	20
V2V4090-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	97	%	70-130
V2V4090-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V2V4090-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	102	%	70-130
V2V4090-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	0	%	20
V2V4090-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	103	%	70-130
V2V4090-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	4	%	20
V2V4090-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	107	%	70-130
V2V4090-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	1	%	20
V2V4090-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	105	%	70-130
V2V4090-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V2V4090-BSD	123-91-1	1,4-Dioxane	BSD	REC	99	%	70-130
V2V4090-BSD	123-91-1	1,4-Dioxane	BSD	RPD	2	%	20
V2V4090-BSD	60-29-7	Ethyl Ether	BSD	REC	111	%	70-130
V2V4090-BSD	60-29-7	Ethyl Ether	BSD	RPD	1	%	20
V2V4090-BSD	100-41-4	Ethylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	100-41-4	Ethylbenzene	BSD	RPD	1	%	20
V2V4090-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	84	%	70-130
V2V4090-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	5	%	20

* Sample used for QC is not from job JD78295

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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BSD	591-78-6	2-Hexanone	BSD	REC	100	%	70-130
V2V4090-BSD	591-78-6	2-Hexanone	BSD	RPD	5	%	20
V2V4090-BSD	98-82-8	Isopropylbenzene	BSD	REC	94	%	70-130
V2V4090-BSD	98-82-8	Isopropylbenzene	BSD	RPD	1	%	20
V2V4090-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	93	%	70-130
V2V4090-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	3	%	20
V2V4090-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	107	%	70-130
V2V4090-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	0	%	20
V2V4090-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	103	%	70-130
V2V4090-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	2	%	20
V2V4090-BSD	74-95-3	Methylene bromide	BSD	REC	98	%	70-130
V2V4090-BSD	74-95-3	Methylene bromide	BSD	RPD	0	%	20
V2V4090-BSD	75-09-2	Methylene chloride	BSD	REC	104	%	70-130
V2V4090-BSD	75-09-2	Methylene chloride	BSD	RPD	3	%	20
V2V4090-BSD	91-20-3	Naphthalene	BSD	REC	90	%	70-130
V2V4090-BSD	91-20-3	Naphthalene	BSD	RPD	0	%	20
V2V4090-BSD	103-65-1	n-Propylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	103-65-1	n-Propylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	100-42-5	Styrene	BSD	REC	97	%	70-130
V2V4090-BSD	100-42-5	Styrene	BSD	RPD	0	%	20
V2V4090-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	102	%	70-130
V2V4090-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V2V4090-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	106	%	70-130
V2V4090-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	0	%	20
V2V4090-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	98	%	70-130
V2V4090-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V2V4090-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	99	%	70-130
V2V4090-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	3	%	20
V2V4090-BSD	127-18-4	Tetrachloroethene	BSD	REC	93	%	70-130
V2V4090-BSD	127-18-4	Tetrachloroethene	BSD	RPD	2	%	20
V2V4090-BSD	109-99-9	Tetrahydrofuran	BSD	REC	107	%	70-130
V2V4090-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	1	%	20
V2V4090-BSD	108-88-3	Toluene	BSD	REC	94	%	70-130
V2V4090-BSD	108-88-3	Toluene	BSD	RPD	1	%	20
V2V4090-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	92	%	70-130
V2V4090-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	1	%	25
V2V4090-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	92	%	70-130
V2V4090-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	0	%	20
V2V4090-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	100	%	70-130
V2V4090-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	4	%	20
V2V4090-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V2V4090-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	2	%	20
V2V4090-BSD	79-01-6	Trichloroethene	BSD	REC	97	%	70-130
V2V4090-BSD	79-01-6	Trichloroethene	BSD	RPD	4	%	20
V2V4090-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	104	%	70-130

* Sample used for QC is not from job JD78295

5.4
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QC Evaluation: MA MCP Limits

Job Number: JD78295
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/04/23 thru 12/06/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	6	%	20
V2V4090-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	94	%	70-130
V2V4090-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	0	%	20
V2V4090-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	75-01-4	Vinyl chloride	BSD	REC	110	%	70-130
V2V4090-BSD	75-01-4	Vinyl chloride	BSD	RPD	5	%	20
V2V4090-BSD		m,p-Xylene	BSD	REC	93	%	70-130
V2V4090-BSD		m,p-Xylene	BSD	RPD	1	%	20
V2V4090-BSD	95-47-6	o-Xylene	BSD	REC	93	%	70-130
V2V4090-BSD	95-47-6	o-Xylene	BSD	RPD	0	%	20
V2V4090-BSD	1330-20-7	Xylene (total)	BSD	REC	93	%	70-130
V2V4090-BSD	1330-20-7	Xylene (total)	BSD	RPD	1	%	20
V2V4090-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	100	%	70-130
V2V4090-BSD	2037-26-5	Toluene-D8	BSD	SURR	98	%	70-130
V2V4090-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	101	%	70-130
V2V4090-MB	1868-53-7	Dibromofluoromethane	MB	SURR	101	%	70-130
V2V4090-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V2V4090-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	103	%	70-130
JD78295-17	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78295-17	2037-26-5	Toluene-D8	SAMP	SURR	100	%	70-130
JD78295-17	460-00-4	4-Bromofluorobenzene	SAMP	SURR	106	%	70-130
JD78295-18	1868-53-7	Dibromofluoromethane	SAMP	SURR	105	%	70-130
JD78295-18	2037-26-5	Toluene-D8	SAMP	SURR	100	%	70-130
JD78295-18	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	70-130

(a) High percent recovery and no associated positive reported in the QC batch.

* Sample used for QC is not from job JD78295

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2K381-MB	2K13884.D	1	12/11/23	LD	n/a	n/a	V2K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-1, JD78295-3, JD78295-5, JD78295-7, JD78295-10, JD78295-13, JD78295-14, JD78295-16, JD78295-19

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2K381-MB	2K13884.D	1	12/11/23	LD	n/a	n/a	V2K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-1, JD78295-3, JD78295-5, JD78295-7, JD78295-10, JD78295-13, JD78295-14, JD78295-16, JD78295-19

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2K381-MB	2K13884.D	1	12/11/23	LD	n/a	n/a	V2K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-1, JD78295-3, JD78295-5, JD78295-7, JD78295-10, JD78295-13, JD78295-14, JD78295-16, JD78295-19

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	106%	80-120%
17060-07-0	1,2-Dichloroethane-D4	105%	80-120%
2037-26-5	Toluene-D8	97%	80-120%
460-00-4	4-Bromofluorobenzene	96%	82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1K381-MB	1K13885.D	1	12/11/23	LD	n/a	n/a	V1K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-2, JD78295-4, JD78295-6, JD78295-8, JD78295-9, JD78295-11, JD78295-12, JD78295-15

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1K381-MB	1K13885.D	1	12/11/23	LD	n/a	n/a	V1K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-2, JD78295-4, JD78295-6, JD78295-8, JD78295-9, JD78295-11, JD78295-12, JD78295-15

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1K381-MB	1K13885.D	1	12/11/23	LD	n/a	n/a	V1K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-2, JD78295-4, JD78295-6, JD78295-8, JD78295-9, JD78295-11, JD78295-12, JD78295-15

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	108% 80-120%
17060-07-0	1,2-Dichloroethane-D4	102% 80-120%
2037-26-5	Toluene-D8	97% 80-120%
460-00-4	4-Bromofluorobenzene	98% 82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-MB	2V102789.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-17, JD78295-18

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-MB	2V102789.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-17, JD78295-18

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-MB	2V102789.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-17, JD78295-18

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	101% 80-120%
17060-07-0	1,2-Dichloroethane-D4	101% 80-120%
2037-26-5	Toluene-D8	100% 80-120%
460-00-4	4-Bromofluorobenzene	103% 82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1K381-BS	1K13879.D	1	12/11/23	LD	n/a	n/a	V1K381
V1K381-BSD	1K13881.D	1	12/11/23	LD	n/a	n/a	V1K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-2, JD78295-4, JD78295-6, JD78295-8, JD78295-9, JD78295-11, JD78295-12, JD78295-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	256	128	263	132	3	27-175/31
71-43-2	Benzene	50	44.4	89	45.8	92	3	80-115/11
108-86-1	Bromobenzene	50	45.0	90	46.7	93	4	79-119/11
74-97-5	Bromochloromethane	50	51.0	102	52.0	104	2	83-122/10
75-27-4	Bromodichloromethane	50	44.6	89	47.0	94	5	82-119/12
75-25-2	Bromoform	50	49.7	99	51.0	102	3	77-135/11
74-83-9	Bromomethane	50	85.7	171* a	92.9	186* a	8	40-162/23
78-93-3	2-Butanone (MEK)	200	218	109	225	113	3	61-150/16
104-51-8	n-Butylbenzene	50	46.6	93	48.5	97	4	77-124/12
135-98-8	sec-Butylbenzene	50	44.9	90	47.1	94	5	75-121/12
98-06-6	tert-Butylbenzene	50	44.6	89	46.1	92	3	74-120/11
75-15-0	Carbon disulfide	50	44.6	89	47.2	94	6	64-130/13
56-23-5	Carbon tetrachloride	50	43.1	86	45.2	90	5	75-127/11
108-90-7	Chlorobenzene	50	45.9	92	46.7	93	2	80-115/10
75-00-3	Chloroethane	50	62.6	125	63.0	126	1	56-144/14
67-66-3	Chloroform	50	46.3	93	48.2	96	4	75-116/10
74-87-3	Chloromethane	50	50.6	101	55.1	110	9	41-153/14
95-49-8	o-Chlorotoluene	50	45.2	90	46.0	92	2	79-119/11
106-43-4	p-Chlorotoluene	50	43.4	87	44.6	89	3	77-117/11
108-20-3	Di-Isopropyl ether	50	51.4	103	53.4	107	4	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	47.5	95	50.1	100	5	69-134/11
124-48-1	Dibromochloromethane	50	48.1	96	49.7	99	3	81-123/11
106-93-4	1,2-Dibromoethane	50	47.8	96	48.3	97	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	45.6	91	47.6	95	4	81-117/10
541-73-1	1,3-Dichlorobenzene	50	45.2	90	47.2	94	4	81-115/10
106-46-7	1,4-Dichlorobenzene	50	45.5	91	47.1	94	3	80-114/10
75-71-8	Dichlorodifluoromethane	50	58.1	116	60.7	121	4	43-152/16
75-34-3	1,1-Dichloroethane	50	48.1	96	49.9	100	4	75-125/11
107-06-2	1,2-Dichloroethane	50	45.5	91	46.1	92	1	73-117/10
75-35-4	1,1-Dichloroethene	50	47.4	95	49.3	99	4	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	46.3	93	47.1	94	2	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	46.0	92	47.6	95	3	77-121/12
78-87-5	1,2-Dichloropropane	50	46.6	93	48.3	97	4	79-121/10
142-28-9	1,3-Dichloropropane	50	46.2	92	47.2	94	2	81-117/11
594-20-7	2,2-Dichloropropane	50	47.4	95	49.3	99	4	70-131/12
563-58-6	1,1-Dichloropropene	50	47.9	96	49.4	99	3	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1K381-BS	1K13879.D	1	12/11/23	LD	n/a	n/a	V1K381
V1K381-BSD	1K13881.D	1	12/11/23	LD	n/a	n/a	V1K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-2, JD78295-4, JD78295-6, JD78295-8, JD78295-9, JD78295-11, JD78295-12, JD78295-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	47.5	95	49.2	98	4	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	47.5	95	49.3	99	4	83-122/12
123-91-1	1,4-Dioxane	1250	1080	86	1200	96	11	64-150/20
60-29-7	Ethyl Ether	50	54.6	109	55.6	111	2	74-132/11
100-41-4	Ethylbenzene	50	43.3	87	44.3	89	2	78-116/10
87-68-3	Hexachlorobutadiene	50	45.1	90	47.3	95	5	55-136/14
591-78-6	2-Hexanone	200	201	101	209	105	4	66-136/14
98-82-8	Isopropylbenzene	50	46.1	92	47.6	95	3	78-121/11
99-87-6	p-Isopropyltoluene	50	46.4	93	47.8	96	3	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	48.7	97	49.7	99	2	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	200	100	205	103	2	73-134/13
74-95-3	Methylene bromide	50	46.5	93	47.5	95	2	82-117/10
75-09-2	Methylene chloride	50	46.0	92	47.3	95	3	73-123/11
91-20-3	Naphthalene	50	47.0	94	48.4	97	3	64-136/13
103-65-1	n-Propylbenzene	50	43.5	87	45.2	90	4	75-121/11
100-42-5	Styrene	50	47.0	94	48.2	96	3	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	46.6	93	47.6	95	2	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	51.8	104	53.4	107	3	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	49.3	99	49.8	100	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	47.1	94	48.2	96	2	73-126/12
127-18-4	Tetrachloroethene	50	45.6	91	47.7	95	5	73-119/12
109-99-9	Tetrahydrofuran	50	46.1	92	47.4	95	3	63-133/11
108-88-3	Toluene	50	44.5	89	45.4	91	2	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	47.5	95	49.2	98	4	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	46.8	94	48.6	97	4	68-135/12
71-55-6	1,1,1-Trichloroethane	50	48.3	97	49.2	98	2	76-124/11
79-00-5	1,1,2-Trichloroethane	50	46.7	93	47.8	96	2	83-117/11
79-01-6	Trichloroethene	50	45.3	91	46.4	93	2	80-118/11
75-69-4	Trichlorofluoromethane	50	63.8	128	64.2	128	1	67-134/13
96-18-4	1,2,3-Trichloropropane	50	48.0	96	49.4	99	3	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	45.8	92	47.9	96	4	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	45.3	91	46.8	94	3	77-120/11
75-01-4	Vinyl chloride	50	50.0	100	53.9	108	8	52-146/15
	m,p-Xylene	100	91.1	91	94.0	94	3	79-119/10
95-47-6	o-Xylene	50	47.1	94	48.0	96	2	81-119/10
1330-20-7	Xylene (total)	150	138	92	142	95	3	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V1K381-BS	1K13879.D	1	12/11/23	LD	n/a	n/a	V1K381
V1K381-BSD	1K13881.D	1	12/11/23	LD	n/a	n/a	V1K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-2, JD78295-4, JD78295-6, JD78295-8, JD78295-9, JD78295-11, JD78295-12, JD78295-15

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	106%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	99%	80-120%
2037-26-5	Toluene-D8	98%	98%	80-120%
460-00-4	4-Bromofluorobenzene	96%	96%	82-114%

(a) High percent recovery and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2K381-BS	2K13880.D	1	12/11/23	LD	n/a	n/a	V2K381
V2K381-BSD	2K13882.D	1	12/11/23	LD	n/a	n/a	V2K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-1, JD78295-3, JD78295-5, JD78295-7, JD78295-10, JD78295-13, JD78295-14, JD78295-16, JD78295-19

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	268	134	263	132	2	27-175/31
71-43-2	Benzene	50	48.9	98	49.7	99	2	80-115/11
108-86-1	Bromobenzene	50	49.4	99	49.8	100	1	79-119/11
74-97-5	Bromochloromethane	50	51.5	103	51.0	102	1	83-122/10
75-27-4	Bromodichloromethane	50	48.4	97	49.5	99	2	82-119/12
75-25-2	Bromoform	50	50.0	100	51.2	102	2	77-135/11
74-83-9	Bromomethane	50	81.1	162	89.7	179* a	10	40-162/23
78-93-3	2-Butanone (MEK)	200	226	113	227	114	0	61-150/16
104-51-8	n-Butylbenzene	50	50.1	100	51.4	103	3	77-124/12
135-98-8	sec-Butylbenzene	50	48.9	98	50.4	101	3	75-121/12
98-06-6	tert-Butylbenzene	50	47.6	95	49.4	99	4	74-120/11
75-15-0	Carbon disulfide	50	49.1	98	50.5	101	3	64-130/13
56-23-5	Carbon tetrachloride	50	47.2	94	49.0	98	4	75-127/11
108-90-7	Chlorobenzene	50	48.6	97	49.6	99	2	80-115/10
75-00-3	Chloroethane	50	69.8	140	69.5	139	0	56-144/14
67-66-3	Chloroform	50	50.3	101	50.6	101	1	75-116/10
74-87-3	Chloromethane	50	59.2	118	63.9	128	8	41-153/14
95-49-8	o-Chlorotoluene	50	47.7	95	48.6	97	2	79-119/11
106-43-4	p-Chlorotoluene	50	47.0	94	48.4	97	3	77-117/11
108-20-3	Di-Isopropyl ether	50	53.2	106	52.4	105	2	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	50.7	101	51.6	103	2	69-134/11
124-48-1	Dibromochloromethane	50	50.0	100	51.1	102	2	81-123/11
106-93-4	1,2-Dibromoethane	50	49.1	98	49.4	99	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	49.1	98	50.1	100	2	81-117/10
541-73-1	1,3-Dichlorobenzene	50	49.2	98	49.8	100	1	81-115/10
106-46-7	1,4-Dichlorobenzene	50	47.0	94	48.3	97	3	80-114/10
75-71-8	Dichlorodifluoromethane	50	61.6	123	64.3	129	4	43-152/16
75-34-3	1,1-Dichloroethane	50	52.5	105	51.3	103	2	75-125/11
107-06-2	1,2-Dichloroethane	50	47.2	94	47.3	95	0	73-117/10
75-35-4	1,1-Dichloroethene	50	53.3	107	54.0	108	1	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	50.0	100	50.8	102	2	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	49.7	99	51.1	102	3	77-121/12
78-87-5	1,2-Dichloropropane	50	49.3	99	51.1	102	4	79-121/10
142-28-9	1,3-Dichloropropane	50	48.3	97	48.9	98	1	81-117/11
594-20-7	2,2-Dichloropropane	50	51.7	103	52.3	105	1	70-131/12
563-58-6	1,1-Dichloropropene	50	52.3	105	53.6	107	2	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2K381-BS	2K13880.D	1	12/11/23	LD	n/a	n/a	V2K381
V2K381-BSD	2K13882.D	1	12/11/23	LD	n/a	n/a	V2K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-1, JD78295-3, JD78295-5, JD78295-7, JD78295-10, JD78295-13, JD78295-14, JD78295-16, JD78295-19

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	50.1	100	51.0	102	2	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	50.1	100	50.8	102	1	83-122/12
123-91-1	1,4-Dioxane	1250	1150	92	1270	102	10	64-150/20
60-29-7	Ethyl Ether	50	58.9	118	57.7	115	2	74-132/11
100-41-4	Ethylbenzene	50	46.5	93	47.7	95	3	78-116/10
87-68-3	Hexachlorobutadiene	50	46.9	94	48.7	97	4	55-136/14
591-78-6	2-Hexanone	200	209	105	211	106	1	66-136/14
98-82-8	Isopropylbenzene	50	48.9	98	50.3	101	3	78-121/11
99-87-6	p-Isopropyltoluene	50	49.2	98	51.0	102	4	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	51.9	104	53.6	107	3	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	207	104	209	105	1	73-134/13
74-95-3	Methylene bromide	50	47.5	95	48.2	96	1	82-117/10
75-09-2	Methylene chloride	50	50.5	101	51.3	103	2	73-123/11
91-20-3	Naphthalene	50	45.1	90	45.8	92	2	64-136/13
103-65-1	n-Propylbenzene	50	47.8	96	49.4	99	3	75-121/11
100-42-5	Styrene	50	48.9	98	49.9	100	2	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	48.4	97	48.6	97	0	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	53.9	108	53.9	108	0	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	53.2	106	53.2	106	0	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	48.9	98	48.4	97	1	73-126/12
127-18-4	Tetrachloroethene	50	50.1	100	52.1	104	4	73-119/12
109-99-9	Tetrahydrofuran	50	46.4	93	53.3	107	14*	63-133/11
108-88-3	Toluene	50	46.6	93	48.3	97	4	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	48.5	97	49.7	99	2	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	48.6	97	49.7	99	2	68-135/12
71-55-6	1,1,1-Trichloroethane	50	50.8	102	51.7	103	2	76-124/11
79-00-5	1,1,2-Trichloroethane	50	48.2	96	48.6	97	1	83-117/11
79-01-6	Trichloroethene	50	50.9	102	51.8	104	2	80-118/11
75-69-4	Trichlorofluoromethane	50	70.0	140* a	71.3	143* a	2	67-134/13
96-18-4	1,2,3-Trichloropropane	50	48.1	96	48.0	96	0	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	48.0	96	49.6	99	3	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	48.2	96	49.3	99	2	77-120/11
75-01-4	Vinyl chloride	50	56.4	113	59.2	118	5	52-146/15
	m,p-Xylene	100	97.0	97	99.7	100	3	79-119/10
95-47-6	o-Xylene	50	48.8	98	50.0	100	2	81-119/10
1330-20-7	Xylene (total)	150	146	97	150	100	3	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2K381-BS	2K13880.D	1	12/11/23	LD	n/a	n/a	V2K381
V2K381-BSD	2K13882.D	1	12/11/23	LD	n/a	n/a	V2K381

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-1, JD78295-3, JD78295-5, JD78295-7, JD78295-10, JD78295-13, JD78295-14, JD78295-16, JD78295-19

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	106%	105%	80-120%
17060-07-0	1,2-Dichloroethane-D4	103%	101%	80-120%
2037-26-5	Toluene-D8	97%	98%	80-120%
460-00-4	4-Bromofluorobenzene	96%	96%	82-114%

(a) High percent recovery and no associated positive reported in the QC batch.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-BS	2V102786.D	1	12/12/23	BN	n/a	n/a	V2V4090
V2V4090-BSD	2V102787.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-17, JD78295-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	209	105	198	99	5	27-175/31
71-43-2	Benzene	50	49.9	100	51.2	102	3	80-115/11
108-86-1	Bromobenzene	50	45.4	91	46.4	93	2	79-119/11
74-97-5	Bromochloromethane	50	50.8	102	51.3	103	1	83-122/10
75-27-4	Bromodichloromethane	50	49.9	100	50.2	100	1	82-119/12
75-25-2	Bromoform	50	50.8	102	50.3	101	1	77-135/11
74-83-9	Bromomethane	50	48.1	96	50.5	101	5	40-162/23
78-93-3	2-Butanone (MEK)	200	219	110	209	105	5	61-150/16
104-51-8	n-Butylbenzene	50	46.3	93	47.5	95	3	77-124/12
135-98-8	sec-Butylbenzene	50	44.5	89	46.1	92	4	75-121/12
98-06-6	tert-Butylbenzene	50	43.7	87	44.9	90	3	74-120/11
75-15-0	Carbon disulfide	50	50.9	102	53.9	108	6	64-130/13
56-23-5	Carbon tetrachloride	50	48.4	97	50.8	102	5	75-127/11
108-90-7	Chlorobenzene	50	45.7	91	46.5	93	2	80-115/10
75-00-3	Chloroethane	50	58.4	117	62.3	125	6	56-144/14
67-66-3	Chloroform	50	47.1	94	48.4	97	3	75-116/10
74-87-3	Chloromethane	50	51.0	102	53.4	107	5	41-153/14
95-49-8	o-Chlorotoluene	50	46.0	92	46.9	94	2	79-119/11
106-43-4	p-Chlorotoluene	50	45.1	90	46.0	92	2	77-117/11
108-20-3	Di-Isopropyl ether	50	53.8	108	54.1	108	1	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	48.9	98	48.1	96	2	69-134/11
124-48-1	Dibromochloromethane	50	50.5	101	50.1	100	1	81-123/11
106-93-4	1,2-Dibromoethane	50	49.2	98	48.6	97	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	45.0	90	45.4	91	1	81-117/10
541-73-1	1,3-Dichlorobenzene	50	44.9	90	45.6	91	2	81-115/10
106-46-7	1,4-Dichlorobenzene	50	44.7	89	45.1	90	1	80-114/10
75-71-8	Dichlorodifluoromethane	50	35.9	72	41.6	83	15	43-152/16
75-34-3	1,1-Dichloroethane	50	51.9	104	53.3	107	3	75-125/11
107-06-2	1,2-Dichloroethane	50	49.1	98	48.7	97	1	73-117/10
75-35-4	1,1-Dichloroethene	50	53.8	108	55.0	110	2	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	50.8	102	52.4	105	3	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	49.8	100	52.0	104	4	77-121/12
78-87-5	1,2-Dichloropropane	50	51.7	103	52.0	104	1	79-121/10
142-28-9	1,3-Dichloropropane	50	49.6	99	48.3	97	3	81-117/11
594-20-7	2,2-Dichloropropane	50	50.8	102	50.8	102	0	70-131/12
563-58-6	1,1-Dichloropropene	50	49.5	99	51.7	103	4	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-BS	2V102786.D	1	12/12/23	BN	n/a	n/a	V2V4090
V2V4090-BSD	2V102787.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-17, JD78295-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	53.0	106	53.4	107	1	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	53.1	106	52.6	105	1	83-122/12
123-91-1	1,4-Dioxane	1250	1270	102	1240	99	2	64-150/20
60-29-7	Ethyl Ether	50	54.9	110	55.4	111	1	74-132/11
100-41-4	Ethylbenzene	50	46.0	92	46.6	93	1	78-116/10
87-68-3	Hexachlorobutadiene	50	40.0	80	42.0	84	5	55-136/14
591-78-6	2-Hexanone	200	209	105	199	100	5	66-136/14
98-82-8	Isopropylbenzene	50	46.3	93	46.9	94	1	78-121/11
99-87-6	p-Isopropyltoluene	50	45.3	91	46.6	93	3	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	53.4	107	53.4	107	0	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	211	106	206	103	2	73-134/13
74-95-3	Methylene bromide	50	49.1	98	49.1	98	0	82-117/10
75-09-2	Methylene chloride	50	50.5	101	51.8	104	3	73-123/11
91-20-3	Naphthalene	50	45.0	90	45.1	90	0	64-136/13
103-65-1	n-Propylbenzene	50	45.1	90	46.6	93	3	75-121/11
100-42-5	Styrene	50	48.2	96	48.3	97	0	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	50.9	102	51.1	102	0	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	52.9	106	53.1	106	0	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	48.6	97	49.1	98	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	50.8	102	49.3	99	3	73-126/12
127-18-4	Tetrachloroethene	50	45.3	91	46.4	93	2	73-119/12
109-99-9	Tetrahydrofuran	50	53.7	107	53.4	107	1	63-133/11
108-88-3	Toluene	50	46.4	93	46.9	94	1	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	45.4	91	46.0	92	1	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	45.6	91	45.8	92	0	68-135/12
71-55-6	1,1,1-Trichloroethane	50	47.8	96	50.0	100	4	76-124/11
79-00-5	1,1,2-Trichloroethane	50	48.8	98	47.9	96	2	83-117/11
79-01-6	Trichloroethene	50	46.5	93	48.5	97	4	80-118/11
75-69-4	Trichlorofluoromethane	50	48.6	97	51.8	104	6	67-134/13
96-18-4	1,2,3-Trichloropropane	50	47.2	94	47.1	94	0	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	45.1	90	46.5	93	3	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	44.9	90	46.3	93	3	77-120/11
75-01-4	Vinyl chloride	50	52.2	104	54.8	110	5	52-146/15
	m,p-Xylene	100	91.7	92	93.0	93	1	79-119/10
95-47-6	o-Xylene	50	46.2	92	46.4	93	0	81-119/10
1330-20-7	Xylene (total)	150	138	92	139	93	1	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-BS	2V102786.D	1	12/12/23	BN	n/a	n/a	V2V4090
V2V4090-BSD	2V102787.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78295-17, JD78295-18

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	101%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	100%	98%	80-120%
2037-26-5	Toluene-D8	99%	98%	80-120%
460-00-4	4-Bromofluorobenzene	100%	101%	82-114%

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V1K381-CC376	Injection Date:	12/11/23
Lab File ID:	1K13875.D	Injection Time:	09:46
Instrument ID:	GCMS1K	Method:	SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	415449	2.05	455358	2.98	866337	3.27	724021	5.06	352099	6.78
Upper Limit ^a	830898	2.55	910716	3.48	1732674	3.77	1448042	5.56	704198	7.28
Lower Limit ^b	207725	1.55	227679	2.48	433169	2.77	362011	4.56	176050	6.28

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V1K381-BS	468323	2.06	431389	2.99	840770	3.28	711238	5.06	364065	6.78
V1K381-BSD	469032	2.06	435619	2.99	844252	3.28	712961	5.06	361871	6.78
V1K381-MB	368220	2.05	392389	2.99	746357	3.28	651000	5.06	320363	6.78
ZZZZZZ	365777	2.06	373846	2.99	706435	3.27	614217	5.06	309729	6.78
ZZZZZZ	327634	2.05	352590	2.99	665999	3.28	569911	5.06	284549	6.78
JD78295-15	341220	2.05	359641	2.99	686111	3.27	595419	5.06	294222	6.78
ZZZZZZ	336697	2.05	355059	2.99	682073	3.27	595174	5.06	290592	6.78
JD78295-2	358763	2.05	351548	2.98	684532	3.28	599889	5.06	297265	6.78
JD78295-4	395545	2.06	388462	2.99	732355	3.28	629354	5.06	317876	6.78
JD78295-9	362055	2.06	382576	2.99	717150	3.27	616134	5.06	309211	6.78
JD78295-9	392569	2.05	376248	2.99	725437	3.28	617309	5.06	313025	6.78
JD78295-9MS	457249	2.06	400032	2.99	779215	3.27	654858	5.06	326750	6.78
JD78295-9MSD	481640	2.06	408188	2.99	800789	3.28	629234	5.06	316033	6.78
ZZZZZZ	414144	2.05	414543	2.99	771677	3.28	658690	5.06	321684	6.78
JD78295-6	388744	2.06	388645	2.99	726656	3.28	619881	5.06	316519	6.78
JD78295-8	371442	2.06	382070	2.99	706452	3.28	590148	5.06	300916	6.78
JD78295-11	362663	2.05	366755	2.99	682123	3.28	590761	5.06	303822	6.78
JD78295-12	336079	2.05	346698	2.99	649446	3.27	556320	5.06	277769	6.78

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V2K381-CC376	Injection Date: 12/11/23
Lab File ID: 2K13876.D	Injection Time: 10:02
Instrument ID: GCMS2K	Method: SW846 8260D

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	564879	2.08	487946	3.00	919973	3.29	783721	5.06	402178	6.78
Upper Limit ^a	1129758	2.58	975892	3.50	1839946	3.79	1567442	5.56	804356	7.28
Lower Limit ^b	282440	1.58	243973	2.50	459987	2.79	391861	4.56	201089	6.28

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
V2K381-BS	555464	2.07	456966	3.00	878135	3.29	761120	5.06	394804	6.78
V2K381-BSD	545514	2.07	459955	3.00	881066	3.29	754875	5.06	390745	6.78
V2K381-MB	478217	2.07	427154	3.00	805261	3.29	700050	5.06	361449	6.78
ZZZZZZ	467775	2.07	405592	3.00	768926	3.29	671364	5.06	347286	6.78
ZZZZZZ	439867	2.07	391825	3.00	749239	3.29	660629	5.06	333284	6.78
ZZZZZZ	408607	2.07	364887	3.00	688255	3.29	595598	5.06	305972	6.78
JD78295-19	406267	2.08	381250	3.00	722250	3.29	633548	5.06	323306	6.78
JD78295-1	384780	2.07	362120	3.00	696728	3.29	621528	5.06	309564	6.78
JD78295-3	389491	2.07	370259	3.00	713825	3.29	667019	5.06	347083	6.78
JD78295-5	390974	2.07	410032	3.00	764470	3.29	662731	5.06	336195	6.78
JD78295-16	372895	2.07	395515	3.00	745545	3.29	642286	5.06	328277	6.78
JD78295-16	391919	2.07	395602	3.00	758342	3.29	643556	5.06	327552	6.78
JD78295-16MS	468140	2.07	435696	3.00	837055	3.29	714386	5.06	367216	6.78
JD78295-16MSD	458632	2.07	428149	3.00	834309	3.29	704629	5.06	360394	6.78
ZZZZZZ	469962	2.07	423310	3.00	788104	3.29	675207	5.06	341673	6.78
JD78295-7	444812	2.07	414626	3.00	764031	3.29	656960	5.06	334081	6.78
JD78295-10	423910	2.07	414766	3.00	745227	3.29	637583	5.06	325111	6.78
JD78295-14	387716	2.07	364157	3.00	701920	3.29	590792	5.06	313812	6.78
JD78295-13	381353	2.07	350557	3.00	664641	3.29	572415	5.06	289421	6.78

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.3.2
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Internal Standard Area Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V2V4090-CC4070	Injection Date: 12/12/23
Lab File ID: 2V102784.D	Injection Time: 09:53
Instrument ID: GCMS2V	Method: SW846 8260D

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	190062	2.24	332722	3.20	556762	3.66	501228	5.64	259334	7.42
Upper Limit ^a	380124	2.74	665444	3.70	1113524	4.16	1002456	6.14	518668	7.92
Lower Limit ^b	95031	1.74	166361	2.70	278381	3.16	250614	5.14	129667	6.92

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
V2V4090-BS	189370	2.25	327610	3.20	533664	3.66	481588	5.64	248125	7.42
V2V4090-BSD	197595	2.25	332283	3.20	544202	3.66	492897	5.64	250579	7.42
V2V4090-MB	191176	2.24	320832	3.20	540272	3.66	489234	5.64	240662	7.42
ZZZZZZ	168673	2.24	304697	3.20	524678	3.66	470125	5.64	231036	7.42
ZZZZZZ	172636	2.24	307413	3.20	522760	3.66	477728	5.64	232272	7.42
ZZZZZZ	173983	2.24	294198	3.21	501186	3.66	451903	5.64	223438	7.42
JD78532-1	159843	2.24	294392	3.20	505374	3.66	457295	5.64	221041	7.42
ZZZZZZ	179309	2.24	283219	3.20	481405	3.66	438997	5.64	220844	7.42
JD78532-1MS	173299	2.25	322334	3.21	522568	3.66	469387	5.64	240745	7.42
JD78532-1MSD	181681	2.25	329300	3.21	531218	3.66	480162	5.64	243075	7.42
ZZZZZZ	189197	2.25	342179	3.21	555817	3.66	494890	5.64	246193	7.42
ZZZZZZ	190610	2.25	318899	3.21	536818	3.66	488018	5.64	241614	7.42
ZZZZZZ	181992	2.25	308975	3.21	524989	3.66	478013	5.64	235727	7.42
ZZZZZZ	174049	2.25	289761	3.21	500626	3.66	453252	5.64	225429	7.42
JD78295-17	175392	2.24	300101	3.20	507197	3.66	462442	5.64	223864	7.42
JD78295-18	169589	2.25	299785	3.21	508538	3.66	462449	5.64	225851	7.42
ZZZZZZ	165520	2.25	286338	3.21	488267	3.66	441902	5.64	216659	7.42
ZZZZZZ	194725	2.25	292899	3.21	498594	3.66	452782	5.64	222368	7.42
ZZZZZZ	170846	2.24	288274	3.20	490449	3.66	443287	5.64	220132	7.42
ZZZZZZ	167746	2.25	287442	3.21	490381	3.66	448624	5.64	222857	7.42
ZZZZZZ	181193	2.25	295439	3.21	505629	3.66	462643	5.64	226934	7.42
ZZZZZZ	171140	2.25	295275	3.21	502310	3.66	456633	5.64	225726	7.42

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD78295-1	2K13894.D	109	105	99	98
JD78295-2	1K13895.D	110	105	97	97
JD78295-3	2K13896.D	109	106	94	97
JD78295-4	1K13897.D	106	110	99	98
JD78295-5	2K13898.D	105	107	99	98
JD78295-6	1K13911.D	104	109	99	96
JD78295-7	2K13912.D	102	104	98	99
JD78295-8	1K13913.D	101	107	101	97
JD78295-9	1K13901.D	107	106	99	97
JD78295-9	1K13899.D	105	109	99	97
JD78295-10	2K13914.D	98	105	99	97
JD78295-11	1K13915.D	104	105	94	92
JD78295-12	1K13917.D	105	107	98	99
JD78295-13	2K13918.D	107	107	99	105
JD78295-14	2K13916.D	106	104	105	95
JD78295-15	1K13891.D	107	100	98	98
JD78295-16	2K13902.D	106	105	99	97
JD78295-16	2K13900.D	106	106	99	99
JD78295-17	2V102803.D	103	105	100	106
JD78295-18	2V102804.D	105	106	100	103
JD78295-19	2K13892.D	107	105	98	97
V1K381-BS	1K13879.D	105	102	98	96
V1K381-BSD	1K13881.D	106	99	98	96
V1K381-MB	1K13885.D	108	102	97	98
V2K381-BS	2K13880.D	106	103	97	96
V2K381-BSD	2K13882.D	105	101	98	96
V2K381-MB	2K13884.D	106	105	97	96
V2V4090-BS	2V102786.D	101	100	99	100
V2V4090-BSD	2V102787.D	100	98	98	101
V2V4090-MB	2V102789.D	101	101	100	103

Surrogate Compounds

Recovery Limits

S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2955-MB	AA105835.D	1	12/18/23	ML	n/a	n/a	GAA2955

The QC reported here applies to the following samples:

Method: RSK-175

JD78295-17, JD78295-18

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

7.1.1

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Laboratory Control Sample Summary

Job Number: JD78295
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2955-LCS	AA105833.D	1	12/18/23	ML	n/a	n/a	GAA2955

The QC reported here applies to the following samples:

Method: RSK-175

JD78295-17, JD78295-18

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	10.6	96	50-150
74-84-0	Ethane	23	22.0	96	50-150
74-85-1	Ethene	31	29.3	95	50-150

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD78295
Account: JACOBMAB - Jacobs Engineering
Project: Varian, Beverly, MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Total Organic Carbon	GP50926/GN49099	1.0	0.0	mg/l	10	10.2	102.0	90-110%

Associated Samples:

Batch GP50926: JD78295-17, JD78295-18

(*) Outside of QC limits

8.1

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The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Jacobs Engineering

Varian, Beverly, MA

VARMS107.A.CS.EV.2.23

SGS Job Number: JD78419

Sampling Dates: 12/06/23 - 12/07/23

Report to:

Jacobs Engineering
120 St. James Avenue
Boston, MA 02116
Raymond.cadorette@jacobs.com; Bernice.Kidd@jacobs.com;
EDMData@jacobs.com
ATTN: Raymond J. Cadorette

Total number of pages in report: **67**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

A blue ink signature of David Chastain.

David Chastain
General Manager

Client Service contact: Victoria Pushkova 732-329-0200

Certifications: NJ(12129),NY(10983),CA,CO,CT,FL,HI,IL,IN,KY,LA (120428),MA,MD,ME,MN,NC,NH,NV,AK (UST-103),AZ (AZ0786),PA(68-00408),RI,SC,TX (T104704234),UT,VA,WA,WV

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Test results relate only to samples analyzed.

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Sample Summary

Jacobs Engineering

Job No: JD78419

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

JD78419-1	12/06/23	15:00	DK	12/07/23	AQ	Ground Water	OB-25-DO_20231206_N_WG
JD78419-2	12/06/23	15:30	DK	12/07/23	AQ	Ground Water	OB-52-S_20231206_N_WG
JD78419-3	12/06/23	15:30	DK	12/07/23	AQ	Ground Water	OB-52-S_20231206_FD_WG
JD78419-4	12/06/23	16:00	DK	12/07/23	AQ	Ground Water	OB-52-BR_20231206_N_WG
JD78419-5	12/06/23	16:30	DK	12/07/23	AQ	Ground Water	OB-52-DO_20231206_N_WG
JD78419-6	12/07/23	10:00	DK	12/07/23	AQ	Ground Water	P-32_20231207_N_WG
JD78419-7	12/07/23	10:10	DK	12/07/23	AQ	Ground Water	OB-61_20231207_N_WG
JD78419-8	12/07/23	10:30	DK	12/07/23	AQ	Equipment Blank	EB04_20231207_N_WG
JD78419-9	12/07/23	10:30		12/07/23	AQ	Trip Blank Water	TB01_20231207_

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Jacobs Engineering

Job No: JD78419

Site: Varian, Beverly, MA

Report Date 12/27/2023 2:53:25 P

On 12/07/2023, 7 sample(s), 1 Trip Blank(s), 1 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. (SGS) at a temperature of 1.9 °C. The samples were intact and properly preserved, unless noted below. An SGS Job Number of JD78419 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Volatiles By Method SW846 8260D

Matrix: AQ	Batch ID: V2V4090
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD78419-8 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-8 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-8 for Hexachlorobutadiene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-9 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78419-9 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-9 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-6 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78419-6 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte.
- JD78419-6 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-8 for Chloroethane: Associated CCV outside of control limits high, sample was ND.
- JD78419-6 for Hexachlorobutadiene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-9 for Hexachlorobutadiene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

Matrix: AQ	Batch ID: V2V4092
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD78419-7 for Acetone: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-7 for Hexachlorobutadiene: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- JD78419-7 for Dichlorodifluoromethane: Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

GC Volatiles By Method RSK-175

Matrix: AQ	Batch ID: GAA2956
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ	Batch ID: GAA2957
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

General Chemistry By Method SM5310 B-11/14

Matrix: AQ	Batch ID: GP50974
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- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

SGS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting SGS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by SGS indicated via signature on the report cover.

Summary of Hits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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JD78419-1 **OB-25-DO_20231206_N_WG**

Methane	20.0	0.11			ug/l	RSK-175
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JD78419-2 **OB-52-S_20231206_N_WG**

No hits reported in this sample.

JD78419-3 **OB-52-S_20231206_FD_WG**

No hits reported in this sample.

JD78419-4 **OB-52-BR_20231206_N_WG**

No hits reported in this sample.

JD78419-5 **OB-52-DO_20231206_N_WG**

No hits reported in this sample.

JD78419-6 **P-32_20231207_N_WG**

1,1-Dichloroethane	1.1	1.0			ug/l	SW846 8260D
cis-1,2-Dichloroethene	263	10			ug/l	SW846 8260D
trans-1,2-Dichloroethene	20.3	1.0			ug/l	SW846 8260D
Tetrachloroethene	1.3	1.0			ug/l	SW846 8260D
Trichloroethene	4.6	1.0			ug/l	SW846 8260D
Vinyl chloride	6.1	1.0			ug/l	SW846 8260D

JD78419-7 **OB-61_20231207_N_WG**

Tetrachloroethene	16.2	1.0			ug/l	SW846 8260D
Trichloroethene	30.1	1.0			ug/l	SW846 8260D

JD78419-8 **EB04_20231207_N_WG**

Methane	0.38	0.11			ug/l	RSK-175
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JD78419-9 **TB01_20231207_**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: OB-25-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78419-1	Date Received: 12/07/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105892.D	1	12/19/23 12:56	ML	n/a	n/a	GAA2956
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	20.0	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: OB-52-S_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78419-2	Date Received: 12/07/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105893.D	1	12/19/23 13:10	ML	n/a	n/a	GAA2956
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: OB-52-S_20231206_FD_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78419-3	Date Received: 12/07/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105894.D	1	12/19/23 13:24	ML	n/a	n/a	GAA2956
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: OB-52-BR_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78419-4	Date Received: 12/07/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105895.D	1	12/19/23 13:38	ML	n/a	n/a	GAA2956
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: OB-52-DO_20231206_N_WG	Date Sampled: 12/06/23
Lab Sample ID: JD78419-5	Date Received: 12/07/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105896.D	1	12/19/23 13:51	ML	n/a	n/a	GAA2956
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P-32_20231207_N_WG	Date Sampled:	12/07/23
Lab Sample ID:	JD78419-6	Date Received:	12/07/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102801.D	1	12/12/23 17:04	BN	n/a	n/a	V2V4090
Run #2	2V102852.D	10	12/13/23 14:54	BN	n/a	n/a	V2V4092

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^c	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	1.1	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	263 ^d	10	ug/l	
156-60-5	trans-1,2-Dichloroethene	20.3	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-32_20231207_N_WG
Lab Sample ID: JD78419-6
Matrix: AQ - Ground Water
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 12/07/23
Date Received: 12/07/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene ^c	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	1.3	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	4.6	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	6.1	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: P-32_20231207_N_WG	Date Sampled: 12/07/23
Lab Sample ID: JD78419-6	Date Received: 12/07/23
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%	103%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	104%	80-120%
2037-26-5	Toluene-D8	101%	99%	80-120%
460-00-4	4-Bromofluorobenzene	102%	102%	82-114%

- (a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte.
- (b) Associated CCV outside of control limits high, sample was ND.
- (c) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.
- (d) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: OB-61_20231207_N_WG	
Lab Sample ID: JD78419-7	Date Sampled: 12/07/23
Matrix: AQ - Ground Water	Date Received: 12/07/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102851.D	1	12/13/23 14:28	BN	n/a	n/a	V2V4092
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID:	OB-61_20231207_N_WG	Date Sampled:	12/07/23
Lab Sample ID:	JD78419-7	Date Received:	12/07/23
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260D		
Project:	Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene ^a	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	16.2	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	30.1	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: OB-61_20231207_N_WG	
Lab Sample ID: JD78419-7	Date Sampled: 12/07/23
Matrix: AQ - Ground Water	Date Received: 12/07/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	103%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID: EB04_20231207_N_WG	Date Sampled: 12/07/23
Lab Sample ID: JD78419-8	Date Received: 12/07/23
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102799.D	1	12/12/23 16:14	BN	n/a	n/a	V2V4090
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID: EB04_20231207_N_WG
Lab Sample ID: JD78419-8
Matrix: AQ - Equipment Blank
Method: SW846 8260D
Project: Varian, Beverly, MA

Date Sampled: 12/07/23
Date Received: 12/07/23
Percent Solids: n/a

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene ^a	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: EB04_20231207_N_WG	Date Sampled: 12/07/23
Lab Sample ID: JD78419-8	Date Received: 12/07/23
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Method: SW846 8260D	
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	102%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: EB04_20231207_N_WG	Date Sampled: 12/07/23
Lab Sample ID: JD78419-8	Date Received: 12/07/23
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Method: RSK-175	
Project: Varian, Beverly, MA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA105933.D	1	12/20/23 13:34	ML	n/a	n/a	GAA2957
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	0.38	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID: EB04_20231207_N_WG	Date Sampled: 12/07/23
Lab Sample ID: JD78419-8	Date Received: 12/07/23
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Project: Varian, Beverly, MA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Total Organic Carbon	< 1.0	1.0	mg/l	1	12/12/23 08:53	MB	SM5310 B-11/14

RL = Reporting Limit

Report of Analysis

Client Sample ID: TB01_20231207_		Date Sampled: 12/07/23
Lab Sample ID: JD78419-9		Date Received: 12/07/23
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Varian, Beverly, MA		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2V102800.D	1	12/12/23 16:39	BN	n/a	n/a	V2V4090
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone ^a	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane ^b	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane ^a	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB01_20231207_		Date Sampled: 12/07/23
Lab Sample ID: JD78419-9		Date Received: 12/07/23
Matrix: AQ - Trip Blank Water		Percent Solids: n/a
Method: SW846 8260D		
Project: Varian, Beverly, MA		

VOA MCP List

CAS No.	Compound	Result	RL	Units	Q
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene ^a	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TB01_20231207_	
Lab Sample ID: JD78419-9	Date Sampled: 12/07/23
Matrix: AQ - Trip Blank Water	Date Received: 12/07/23
Method: SW846 8260D	Percent Solids: n/a
Project: Varian, Beverly, MA	

VOA MCP List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		80-120%
17060-07-0	1,2-Dichloroethane-D4	103%		80-120%
2037-26-5	Toluene-D8	100%		80-120%
460-00-4	4-Bromofluorobenzene	102%		82-114%

(a) Associated CCV outside of control limits low. A sensitivity check was analyzed to demonstrate system suitability to detect affected analyte. Sample was ND.

(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits

SGS Sample Receipt Summary

Job Number: JD78419

Client: JACOBS ENGINEERING

Project: VARIAN, BEVERLY, MA

Date / Time Received: 12/7/2023 11:20:00 PM

Delivery Method: SGS

Airbill #'s: _____

Cooler Temps (Raw Measured) °C: Cooler 1: (1.9);

Cooler Temps (Corrected) °C: Cooler 1: (1.9);

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smp'l Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | _____ | |
| 3. Cooler media: | <u>Ice (Bag)</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Test Strip Lot #s:	pH 1-12: <u>231619</u>	pH 12+: <u>203117A</u>	Other: (Specify) _____
--------------------	------------------------	------------------------	------------------------

Comments

SM089-03
Rev. Date 12/7/17

JD78419: Chain of Custody

Page 2 of 3



5.1
5

CHAIN OF CUSTODY

Page 1 of 1

Client/Reporting Information		Project Information																								
Company Name Jacobs Engineering 120 St. James Ave City: Boston State: MA Zip: 02166		Project Name Verian Medical Systems Street 150 Sohier Rd City: Beverly State: MA																								
Project Contact Bernie Kidd Email: Bernie.Kidd@jacobs.com		Project # VARMIS107 A.CS.EV.2.23																								
Phone # 530-226-3203		Client PO # YAT Standard 10 day																								
Sampler(s) Name(s) Deirdre Kearney		Project Manager Reymond Cadorette																								
Lot #	Field ID Point of Collection	Date	Time	Sampled by	Container	Matrix	# Bottles	HON3	HON4	HON5	HON6	HON7	HON8	HON9	HON10	HON11	HON12	HON13	HON14	HON15	HON16	HON17	HON18	HON19	HON20	
	OB-35-DO_20231206_N_WG	12/06/23	1500	DK	G	GW	3																			
	OB-32-S_20231206_N_WG	12/06/23	1530	DK	G	GW	3																			
	OB-32-S_20231206_FD_WG	12/06/23	1530	DK	G	GW	3																			
	OB-32-BR_20231206_N_WG	12/06/23	1600	DK	G	GW	3																			
	OB-32-DO_20231206_N_WG	12/06/23	1630	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1600	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1610	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1620	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1630	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1640	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1650	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1700	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1710	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1720	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1730	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1740	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1750	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1800	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1810	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1820	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1830	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1840	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1850	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1900	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1910	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1920	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1930	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1940	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	1950	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2000	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2010	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2020	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2030	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2040	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2050	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2100	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2110	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2120	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2130	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2140	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2150	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2200	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2210	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2220	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2230	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2240	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2250	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2300	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2310	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2320	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2330	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2340	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2350	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2400	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2410	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2420	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2430	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2440	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2450	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2500	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2510	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2520	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2530	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG	12/07/23	2540	DK	G	GW	3																			
	OB-32-DO_20231207_N_WG																									



Massachusetts Department
of Environmental Protection
Bureau of Waste Site Cleanup

WSC-CAM

Exhibit VII A

July 1, 2010

Revision No. 1

Final

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name: SGS North America Inc. - Dayton Project #: JD78419

Project Location: Varian, Beverly, MA MADEP RTN None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD78419-1,JD78419-2,JD78419-3,JD78419-4,JD78419-5,JD78419-6,JD78419-7,JD78419-8
JD78419-9

Matrices: Groundwater/Surface Water (X) Soil/Sediment () Drinking Water () Air () Other ()

CAM Protocol (check all that apply below):

8260 VOC (X) CAM IIA	7470/7471 Hg () CAM III B	MassDEP VPH () CAM IV A	8081 Pesticides () CAM V B	7196 Hex Cr () CAM VI B	Mass DEP APH () CAM IX A
8270 SVOC () CAM II B	7010 Metals () CAM III C	MassDEP EPH () CAM IV B	8151 Herbicides () CAM V C	8330 Explosives () CAM VIII A	TO-15 VOC () CAM IX B
6010 Metals () CAM III A	6020 Metals () CAM III D	8082 PCB () CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate () CAM VIII B	

Affirmative Responses to Questions A Through F are 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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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"?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
E	VPH, EPH, APH, and TO-15 only: 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). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
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)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.					
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No ¹

¹ All Negative responses must be addressed in an attached Environmental Laboratory case narrative.

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: General Manager
Printed Name: David Chastain Date: 27-Dec-23

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78419

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78419-1 Collected: 06-DEC-23 15:00 By: DK Received: 07-DEC-23 By: HR OB-25-DO_20231206_N_WG						
JD78419-1	RSK-175	19-DEC-23 12:56	ML			VRSK175DGMEE
JD78419-2 Collected: 06-DEC-23 15:30 By: DK Received: 07-DEC-23 By: HR OB-52-S_20231206_N_WG						
JD78419-2	RSK-175	19-DEC-23 13:10	ML			VRSK175DGMEE
JD78419-3 Collected: 06-DEC-23 15:30 By: DK Received: 07-DEC-23 By: HR OB-52-S_20231206_FD_WG						
JD78419-3	RSK-175	19-DEC-23 13:24	ML			VRSK175DGMEE
JD78419-4 Collected: 06-DEC-23 16:00 By: DK Received: 07-DEC-23 By: HR OB-52-BR_20231206_N_WG						
JD78419-4	RSK-175	19-DEC-23 13:38	ML			VRSK175DGMEE
JD78419-5 Collected: 06-DEC-23 16:30 By: DK Received: 07-DEC-23 By: HR OB-52-DO_20231206_N_WG						
JD78419-5	RSK-175	19-DEC-23 13:51	ML			VRSK175DGMEE
JD78419-6 Collected: 07-DEC-23 10:00 By: DK Received: 07-DEC-23 By: HR P-32_20231207_N_WG						
JD78419-6	SW846 8260D	12-DEC-23 17:04	BN			V8260MCP
JD78419-6	SW846 8260D	13-DEC-23 14:54	BN			V8260MCP
JD78419-7 Collected: 07-DEC-23 10:10 By: DK Received: 07-DEC-23 By: HR OB-61_20231207_N_WG						
JD78419-7	SW846 8260D	13-DEC-23 14:28	BN			V8260MCP
JD78419-8 Collected: 07-DEC-23 10:30 By: DK Received: 07-DEC-23 By: HR EB04_20231207_N_WG						
JD78419-8	SM5310 B-11/14	12-DEC-23 08:53	MB	11-DEC-23	MB	TOC

Internal Sample Tracking Chronicle

Jacobs Engineering

Job No: JD78419

Varian, Beverly, MA

Project No: VARMS107.A.CS.EV.2.23

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD78419-8	SW846 8260D	12-DEC-23 16:14	BN			V8260MCP
JD78419-8	RSK-175	20-DEC-23 13:34	ML			VRSK175DGMEE
JD78419-9 Collected: 07-DEC-23 10:30 By: TB01_20231207_ Received: 07-DEC-23 By: HR						
JD78419-9	SW846 8260D	12-DEC-23 16:39	BN			V8260MCP

QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090	SW846 8260D						
V2V4090-BS	67-64-1	Acetone	BSP	REC	105	%	70-130
V2V4090-BS	71-43-2	Benzene	BSP	REC	100	%	70-130
V2V4090-BS	108-86-1	Bromobenzene	BSP	REC	91	%	70-130
V2V4090-BS	74-97-5	Bromochloromethane	BSP	REC	102	%	70-130
V2V4090-BS	75-27-4	Bromodichloromethane	BSP	REC	100	%	70-130
V2V4090-BS	75-25-2	Bromoform	BSP	REC	102	%	70-130
V2V4090-BS	74-83-9	Bromomethane	BSP	REC	96	%	70-130
V2V4090-BS	78-93-3	2-Butanone (MEK)	BSP	REC	110	%	70-130
V2V4090-BS	104-51-8	n-Butylbenzene	BSP	REC	93	%	70-130
V2V4090-BS	135-98-8	sec-Butylbenzene	BSP	REC	89	%	70-130
V2V4090-BS	98-06-6	tert-Butylbenzene	BSP	REC	87	%	70-130
V2V4090-BS	75-15-0	Carbon disulfide	BSP	REC	102	%	70-130
V2V4090-BS	56-23-5	Carbon tetrachloride	BSP	REC	97	%	70-130
V2V4090-BS	108-90-7	Chlorobenzene	BSP	REC	91	%	70-130
V2V4090-BS	75-00-3	Chloroethane	BSP	REC	117	%	70-130
V2V4090-BS	67-66-3	Chloroform	BSP	REC	94	%	70-130
V2V4090-BS	74-87-3	Chloromethane	BSP	REC	102	%	70-130
V2V4090-BS	95-49-8	o-Chlorotoluene	BSP	REC	92	%	70-130
V2V4090-BS	106-43-4	p-Chlorotoluene	BSP	REC	90	%	70-130
V2V4090-BS	108-20-3	Di-Isopropyl ether	BSP	REC	108	%	70-130
V2V4090-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	98	%	70-130
V2V4090-BS	124-48-1	Dibromochloromethane	BSP	REC	101	%	70-130
V2V4090-BS	106-93-4	1,2-Dibromoethane	BSP	REC	98	%	70-130
V2V4090-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	90	%	70-130
V2V4090-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V2V4090-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	89	%	70-130
V2V4090-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	72	%	70-130
V2V4090-BS	75-34-3	1,1-Dichloroethane	BSP	REC	104	%	70-130
V2V4090-BS	107-06-2	1,2-Dichloroethane	BSP	REC	98	%	70-130
V2V4090-BS	75-35-4	1,1-Dichloroethene	BSP	REC	108	%	70-130
V2V4090-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	102	%	70-130
V2V4090-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	100	%	70-130
V2V4090-BS	78-87-5	1,2-Dichloropropane	BSP	REC	103	%	70-130
V2V4090-BS	142-28-9	1,3-Dichloropropane	BSP	REC	99	%	70-130
V2V4090-BS	594-20-7	2,2-Dichloropropane	BSP	REC	102	%	70-130
V2V4090-BS	563-58-6	1,1-Dichloropropene	BSP	REC	99	%	70-130
V2V4090-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	106	%	70-130
V2V4090-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	106	%	70-130
V2V4090-BS	123-91-1	1,4-Dioxane	BSP	REC	102	%	70-130
V2V4090-BS	60-29-7	Ethyl Ether	BSP	REC	110	%	70-130
V2V4090-BS	100-41-4	Ethylbenzene	BSP	REC	92	%	70-130
V2V4090-BS	87-68-3	Hexachlorobutadiene	BSP	REC	80	%	70-130

* Sample used for QC is not from job JD78419

QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BS	591-78-6	2-Hexanone	BSP	REC	105	%	70-130
V2V4090-BS	98-82-8	Isopropylbenzene	BSP	REC	93	%	70-130
V2V4090-BS	99-87-6	p-Isopropyltoluene	BSP	REC	91	%	70-130
V2V4090-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	107	%	70-130
V2V4090-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	106	%	70-130
V2V4090-BS	74-95-3	Methylene bromide	BSP	REC	98	%	70-130
V2V4090-BS	75-09-2	Methylene chloride	BSP	REC	101	%	70-130
V2V4090-BS	91-20-3	Naphthalene	BSP	REC	90	%	70-130
V2V4090-BS	103-65-1	n-Propylbenzene	BSP	REC	90	%	70-130
V2V4090-BS	100-42-5	Styrene	BSP	REC	96	%	70-130
V2V4090-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	102	%	70-130
V2V4090-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	106	%	70-130
V2V4090-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	97	%	70-130
V2V4090-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	102	%	70-130
V2V4090-BS	127-18-4	Tetrachloroethene	BSP	REC	91	%	70-130
V2V4090-BS	109-99-9	Tetrahydrofuran	BSP	REC	107	%	70-130
V2V4090-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V2V4090-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	91	%	70-130
V2V4090-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	91	%	70-130
V2V4090-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	96	%	70-130
V2V4090-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	98	%	70-130
V2V4090-BS	79-01-6	Trichloroethene	BSP	REC	93	%	70-130
V2V4090-BS	75-69-4	Trichlorofluoromethane	BSP	REC	97	%	70-130
V2V4090-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	94	%	70-130
V2V4090-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	90	%	70-130
V2V4090-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	90	%	70-130
V2V4090-BS	75-01-4	Vinyl chloride	BSP	REC	104	%	70-130
V2V4090-BS		m,p-Xylene	BSP	REC	92	%	70-130
V2V4090-BS	95-47-6	o-Xylene	BSP	REC	92	%	70-130
V2V4090-BS	1330-20-7	Xylene (total)	BSP	REC	92	%	70-130
V2V4090-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	101	%	70-130
V2V4090-BS	2037-26-5	Toluene-D8	BSP	SURR	99	%	70-130
V2V4090-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	100	%	70-130
V2V4090-BSD	67-64-1	Acetone	BSD	REC	99	%	70-130
V2V4090-BSD	67-64-1	Acetone	BSD	RPD	5	%	20
V2V4090-BSD	71-43-2	Benzene	BSD	REC	102	%	70-130
V2V4090-BSD	71-43-2	Benzene	BSD	RPD	3	%	20
V2V4090-BSD	108-86-1	Bromobenzene	BSD	REC	93	%	70-130
V2V4090-BSD	108-86-1	Bromobenzene	BSD	RPD	2	%	20
V2V4090-BSD	74-97-5	Bromochloromethane	BSD	REC	103	%	70-130
V2V4090-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V2V4090-BSD	75-27-4	Bromodichloromethane	BSD	REC	100	%	70-130
V2V4090-BSD	75-27-4	Bromodichloromethane	BSD	RPD	1	%	20
V2V4090-BSD	75-25-2	Bromoform	BSD	REC	101	%	70-130
V2V4090-BSD	75-25-2	Bromoform	BSD	RPD	1	%	20

* Sample used for QC is not from job JD78419

5.4
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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BSD	74-83-9	Bromomethane	BSD	REC	101	%	70-130
V2V4090-BSD	74-83-9	Bromomethane	BSD	RPD	5	%	20
V2V4090-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	105	%	70-130
V2V4090-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	5	%	20
V2V4090-BSD	104-51-8	n-Butylbenzene	BSD	REC	95	%	70-130
V2V4090-BSD	104-51-8	n-Butylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V2V4090-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	4	%	20
V2V4090-BSD	98-06-6	tert-Butylbenzene	BSD	REC	90	%	70-130
V2V4090-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	75-15-0	Carbon disulfide	BSD	REC	108	%	70-130
V2V4090-BSD	75-15-0	Carbon disulfide	BSD	RPD	6	%	20
V2V4090-BSD	56-23-5	Carbon tetrachloride	BSD	REC	102	%	70-130
V2V4090-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	5	%	20
V2V4090-BSD	108-90-7	Chlorobenzene	BSD	REC	93	%	70-130
V2V4090-BSD	108-90-7	Chlorobenzene	BSD	RPD	2	%	20
V2V4090-BSD	75-00-3	Chloroethane	BSD	REC	125	%	70-130
V2V4090-BSD	75-00-3	Chloroethane	BSD	RPD	6	%	20
V2V4090-BSD	67-66-3	Chloroform	BSD	REC	97	%	70-130
V2V4090-BSD	67-66-3	Chloroform	BSD	RPD	3	%	20
V2V4090-BSD	74-87-3	Chloromethane	BSD	REC	107	%	70-130
V2V4090-BSD	74-87-3	Chloromethane	BSD	RPD	5	%	20
V2V4090-BSD	95-49-8	o-Chlorotoluene	BSD	REC	94	%	70-130
V2V4090-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	2	%	20
V2V4090-BSD	106-43-4	p-Chlorotoluene	BSD	REC	92	%	70-130
V2V4090-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V2V4090-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	108	%	70-130
V2V4090-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	1	%	20
V2V4090-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	96	%	70-130
V2V4090-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	2	%	20
V2V4090-BSD	124-48-1	Dibromochloromethane	BSD	REC	100	%	70-130
V2V4090-BSD	124-48-1	Dibromochloromethane	BSD	RPD	1	%	20
V2V4090-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	97	%	70-130
V2V4090-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V2V4090-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	91	%	70-130
V2V4090-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	1	%	20
V2V4090-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	91	%	70-130
V2V4090-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V2V4090-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	90	%	70-130
V2V4090-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	1	%	20
V2V4090-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	83	%	70-130
V2V4090-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	15	%	20
V2V4090-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	107	%	70-130
V2V4090-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	3	%	20
V2V4090-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	97	%	70-130

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	1	%	20
V2V4090-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	110	%	70-130
V2V4090-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	2	%	20
V2V4090-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	105	%	70-130
V2V4090-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	3	%	20
V2V4090-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	104	%	70-130
V2V4090-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	4	%	20
V2V4090-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	104	%	70-130
V2V4090-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	1	%	20
V2V4090-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	97	%	70-130
V2V4090-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	3	%	20
V2V4090-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	102	%	70-130
V2V4090-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	0	%	20
V2V4090-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	103	%	70-130
V2V4090-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	4	%	20
V2V4090-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	107	%	70-130
V2V4090-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	1	%	20
V2V4090-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	105	%	70-130
V2V4090-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V2V4090-BSD	123-91-1	1,4-Dioxane	BSD	REC	99	%	70-130
V2V4090-BSD	123-91-1	1,4-Dioxane	BSD	RPD	2	%	20
V2V4090-BSD	60-29-7	Ethyl Ether	BSD	REC	111	%	70-130
V2V4090-BSD	60-29-7	Ethyl Ether	BSD	RPD	1	%	20
V2V4090-BSD	100-41-4	Ethylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	100-41-4	Ethylbenzene	BSD	RPD	1	%	20
V2V4090-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	84	%	70-130
V2V4090-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	5	%	20
V2V4090-BSD	591-78-6	2-Hexanone	BSD	REC	100	%	70-130
V2V4090-BSD	591-78-6	2-Hexanone	BSD	RPD	5	%	20
V2V4090-BSD	98-82-8	Isopropylbenzene	BSD	REC	94	%	70-130
V2V4090-BSD	98-82-8	Isopropylbenzene	BSD	RPD	1	%	20
V2V4090-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	93	%	70-130
V2V4090-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	3	%	20
V2V4090-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	107	%	70-130
V2V4090-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	0	%	20
V2V4090-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	103	%	70-130
V2V4090-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	2	%	20
V2V4090-BSD	74-95-3	Methylene bromide	BSD	REC	98	%	70-130
V2V4090-BSD	74-95-3	Methylene bromide	BSD	RPD	0	%	20
V2V4090-BSD	75-09-2	Methylene chloride	BSD	REC	104	%	70-130
V2V4090-BSD	75-09-2	Methylene chloride	BSD	RPD	3	%	20
V2V4090-BSD	91-20-3	Naphthalene	BSD	REC	90	%	70-130
V2V4090-BSD	91-20-3	Naphthalene	BSD	RPD	0	%	20
V2V4090-BSD	103-65-1	n-Propylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	103-65-1	n-Propylbenzene	BSD	RPD	3	%	20

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-BSD	100-42-5	Styrene	BSD	REC	97	%	70-130
V2V4090-BSD	100-42-5	Styrene	BSD	RPD	0	%	20
V2V4090-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	102	%	70-130
V2V4090-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V2V4090-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	106	%	70-130
V2V4090-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	0	%	20
V2V4090-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	98	%	70-130
V2V4090-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V2V4090-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	99	%	70-130
V2V4090-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	3	%	20
V2V4090-BSD	127-18-4	Tetrachloroethene	BSD	REC	93	%	70-130
V2V4090-BSD	127-18-4	Tetrachloroethene	BSD	RPD	2	%	20
V2V4090-BSD	109-99-9	Tetrahydrofuran	BSD	REC	107	%	70-130
V2V4090-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	1	%	20
V2V4090-BSD	108-88-3	Toluene	BSD	REC	94	%	70-130
V2V4090-BSD	108-88-3	Toluene	BSD	RPD	1	%	20
V2V4090-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	92	%	70-130
V2V4090-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	1	%	25
V2V4090-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	92	%	70-130
V2V4090-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	0	%	20
V2V4090-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	100	%	70-130
V2V4090-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	4	%	20
V2V4090-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	96	%	70-130
V2V4090-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	2	%	20
V2V4090-BSD	79-01-6	Trichloroethene	BSD	REC	97	%	70-130
V2V4090-BSD	79-01-6	Trichloroethene	BSD	RPD	4	%	20
V2V4090-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	104	%	70-130
V2V4090-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	6	%	20
V2V4090-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	94	%	70-130
V2V4090-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	0	%	20
V2V4090-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	93	%	70-130
V2V4090-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	3	%	20
V2V4090-BSD	75-01-4	Vinyl chloride	BSD	REC	110	%	70-130
V2V4090-BSD	75-01-4	Vinyl chloride	BSD	RPD	5	%	20
V2V4090-BSD		m,p-Xylene	BSD	REC	93	%	70-130
V2V4090-BSD		m,p-Xylene	BSD	RPD	1	%	20
V2V4090-BSD	95-47-6	o-Xylene	BSD	REC	93	%	70-130
V2V4090-BSD	95-47-6	o-Xylene	BSD	RPD	0	%	20
V2V4090-BSD	1330-20-7	Xylene (total)	BSD	REC	93	%	70-130
V2V4090-BSD	1330-20-7	Xylene (total)	BSD	RPD	1	%	20
V2V4090-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	100	%	70-130
V2V4090-BSD	2037-26-5	Toluene-D8	BSD	SURR	98	%	70-130
V2V4090-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	101	%	70-130

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4090-MB	1868-53-7	Dibromofluoromethane	MB	SURR	101	%	70-130
V2V4090-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V2V4090-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	103	%	70-130
JD78419-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	104	%	70-130
JD78419-6	2037-26-5	Toluene-D8	SAMP	SURR	101	%	70-130
JD78419-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	70-130
JD78419-8	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD78419-8	2037-26-5	Toluene-D8	SAMP	SURR	100	%	70-130
JD78419-8	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	70-130
JD78419-9	1868-53-7	Dibromofluoromethane	SAMP	SURR	102	%	70-130
JD78419-9	2037-26-5	Toluene-D8	SAMP	SURR	100	%	70-130
JD78419-9	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	70-130
V2V4092	SW846 8260D						
V2V4092-BS	67-64-1	Acetone	BSP	REC	81	%	70-130
V2V4092-BS	71-43-2	Benzene	BSP	REC	101	%	70-130
V2V4092-BS	108-86-1	Bromobenzene	BSP	REC	92	%	70-130
V2V4092-BS	74-97-5	Bromochloromethane	BSP	REC	101	%	70-130
V2V4092-BS	75-27-4	Bromodichloromethane	BSP	REC	101	%	70-130
V2V4092-BS	75-25-2	Bromoform	BSP	REC	102	%	70-130
V2V4092-BS	74-83-9	Bromomethane	BSP	REC	102	%	70-130
V2V4092-BS	78-93-3	2-Butanone (MEK)	BSP	REC	95	%	70-130
V2V4092-BS	104-51-8	n-Butylbenzene	BSP	REC	94	%	70-130
V2V4092-BS	135-98-8	sec-Butylbenzene	BSP	REC	91	%	70-130
V2V4092-BS	98-06-6	tert-Butylbenzene	BSP	REC	89	%	70-130
V2V4092-BS	75-15-0	Carbon disulfide	BSP	REC	90	%	70-130
V2V4092-BS	56-23-5	Carbon tetrachloride	BSP	REC	97	%	70-130
V2V4092-BS	108-90-7	Chlorobenzene	BSP	REC	93	%	70-130
V2V4092-BS	75-00-3	Chloroethane	BSP	REC	127	%	70-130
V2V4092-BS	67-66-3	Chloroform	BSP	REC	95	%	70-130
V2V4092-BS	74-87-3	Chloromethane	BSP	REC	100	%	70-130
V2V4092-BS	95-49-8	o-Chlorotoluene	BSP	REC	93	%	70-130
V2V4092-BS	106-43-4	p-Chlorotoluene	BSP	REC	90	%	70-130
V2V4092-BS	108-20-3	Di-Isopropyl ether	BSP	REC	107	%	70-130
V2V4092-BS	96-12-8	1,2-Dibromo-3-chloropropane	BSP	REC	97	%	70-130
V2V4092-BS	124-48-1	Dibromochloromethane	BSP	REC	101	%	70-130
V2V4092-BS	106-93-4	1,2-Dibromoethane	BSP	REC	97	%	70-130
V2V4092-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	90	%	70-130
V2V4092-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	90	%	70-130
V2V4092-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	90	%	70-130
V2V4092-BS	75-71-8	Dichlorodifluoromethane	BSP	REC	70	%	70-130
V2V4092-BS	75-34-3	1,1-Dichloroethane	BSP	REC	103	%	70-130
V2V4092-BS	107-06-2	1,2-Dichloroethane	BSP	REC	98	%	70-130
V2V4092-BS	75-35-4	1,1-Dichloroethene	BSP	REC	100	%	70-130

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4092-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	103	%	70-130
V2V4092-BS	156-60-5	trans-1,2-Dichloroethene	BSP	REC	100	%	70-130
V2V4092-BS	78-87-5	1,2-Dichloropropane	BSP	REC	104	%	70-130
V2V4092-BS	142-28-9	1,3-Dichloropropane	BSP	REC	98	%	70-130
V2V4092-BS	594-20-7	2,2-Dichloropropane	BSP	REC	102	%	70-130
V2V4092-BS	563-58-6	1,1-Dichloropropene	BSP	REC	100	%	70-130
V2V4092-BS	10061-01-5	cis-1,3-Dichloropropene	BSP	REC	108	%	70-130
V2V4092-BS	10061-02-6	trans-1,3-Dichloropropene	BSP	REC	106	%	70-130
V2V4092-BS	123-91-1	1,4-Dioxane	BSP	REC	102	%	70-130
V2V4092-BS	60-29-7	Ethyl Ether	BSP	REC	107	%	70-130
V2V4092-BS	100-41-4	Ethylbenzene	BSP	REC	94	%	70-130
V2V4092-BS	87-68-3	Hexachlorobutadiene	BSP	REC	83	%	70-130
V2V4092-BS	591-78-6	2-Hexanone	BSP	REC	95	%	70-130
V2V4092-BS	98-82-8	Isopropylbenzene	BSP	REC	93	%	70-130
V2V4092-BS	99-87-6	p-Isopropyltoluene	BSP	REC	92	%	70-130
V2V4092-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	106	%	70-130
V2V4092-BS	108-10-1	4-Methyl-2-pentanone(MIBK)	BSP	REC	103	%	70-130
V2V4092-BS	74-95-3	Methylene bromide	BSP	REC	99	%	70-130
V2V4092-BS	75-09-2	Methylene chloride	BSP	REC	101	%	70-130
V2V4092-BS	91-20-3	Naphthalene	BSP	REC	89	%	70-130
V2V4092-BS	103-65-1	n-Propylbenzene	BSP	REC	92	%	70-130
V2V4092-BS	100-42-5	Styrene	BSP	REC	97	%	70-130
V2V4092-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	102	%	70-130
V2V4092-BS	637-92-3	tert-Butyl Ethyl Ether	BSP	REC	105	%	70-130
V2V4092-BS	630-20-6	1,1,1,2-Tetrachloroethane	BSP	REC	98	%	70-130
V2V4092-BS	79-34-5	1,1,2,2-Tetrachloroethane	BSP	REC	102	%	70-130
V2V4092-BS	127-18-4	Tetrachloroethene	BSP	REC	92	%	70-130
V2V4092-BS	109-99-9	Tetrahydrofuran	BSP	REC	105	%	70-130
V2V4092-BS	108-88-3	Toluene	BSP	REC	93	%	70-130
V2V4092-BS	87-61-6	1,2,3-Trichlorobenzene	BSP	REC	91	%	70-130
V2V4092-BS	120-82-1	1,2,4-Trichlorobenzene	BSP	REC	92	%	70-130
V2V4092-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	97	%	70-130
V2V4092-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	97	%	70-130
V2V4092-BS	79-01-6	Trichloroethene	BSP	REC	95	%	70-130
V2V4092-BS	75-69-4	Trichlorofluoromethane	BSP	REC	97	%	70-130
V2V4092-BS	96-18-4	1,2,3-Trichloropropane	BSP	REC	94	%	70-130
V2V4092-BS	95-63-6	1,2,4-Trimethylbenzene	BSP	REC	91	%	70-130
V2V4092-BS	108-67-8	1,3,5-Trimethylbenzene	BSP	REC	90	%	70-130
V2V4092-BS	75-01-4	Vinyl chloride	BSP	REC	103	%	70-130
V2V4092-BS		m,p-Xylene	BSP	REC	93	%	70-130
V2V4092-BS	95-47-6	o-Xylene	BSP	REC	93	%	70-130
V2V4092-BS	1330-20-7	Xylene (total)	BSP	REC	93	%	70-130
V2V4092-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	99	%	70-130
V2V4092-BS	2037-26-5	Toluene-D8	BSP	SURR	98	%	70-130
V2V4092-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	100	%	70-130

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4092-BSD	67-64-1	Acetone	BSD	REC	87	%	70-130
V2V4092-BSD	67-64-1	Acetone	BSD	RPD	7	%	20
V2V4092-BSD	71-43-2	Benzene	BSD	REC	101	%	70-130
V2V4092-BSD	71-43-2	Benzene	BSD	RPD	0	%	20
V2V4092-BSD	108-86-1	Bromobenzene	BSD	REC	92	%	70-130
V2V4092-BSD	108-86-1	Bromobenzene	BSD	RPD	0	%	20
V2V4092-BSD	74-97-5	Bromochloromethane	BSD	REC	102	%	70-130
V2V4092-BSD	74-97-5	Bromochloromethane	BSD	RPD	1	%	20
V2V4092-BSD	75-27-4	Bromodichloromethane	BSD	REC	99	%	70-130
V2V4092-BSD	75-27-4	Bromodichloromethane	BSD	RPD	1	%	20
V2V4092-BSD	75-25-2	Bromoform	BSD	REC	102	%	70-130
V2V4092-BSD	75-25-2	Bromoform	BSD	RPD	0	%	20
V2V4092-BSD	74-83-9	Bromomethane	BSD	REC	99	%	70-130
V2V4092-BSD	74-83-9	Bromomethane	BSD	RPD	4	%	20
V2V4092-BSD	78-93-3	2-Butanone (MEK)	BSD	REC	97	%	70-130
V2V4092-BSD	78-93-3	2-Butanone (MEK)	BSD	RPD	2	%	20
V2V4092-BSD	104-51-8	n-Butylbenzene	BSD	REC	95	%	70-130
V2V4092-BSD	104-51-8	n-Butylbenzene	BSD	RPD	0	%	20
V2V4092-BSD	135-98-8	sec-Butylbenzene	BSD	REC	92	%	70-130
V2V4092-BSD	135-98-8	sec-Butylbenzene	BSD	RPD	1	%	20
V2V4092-BSD	98-06-6	tert-Butylbenzene	BSD	REC	90	%	70-130
V2V4092-BSD	98-06-6	tert-Butylbenzene	BSD	RPD	1	%	20
V2V4092-BSD	75-15-0	Carbon disulfide	BSD	REC	91	%	70-130
V2V4092-BSD	75-15-0	Carbon disulfide	BSD	RPD	1	%	20
V2V4092-BSD	56-23-5	Carbon tetrachloride	BSD	REC	98	%	70-130
V2V4092-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	1	%	20
V2V4092-BSD	108-90-7	Chlorobenzene	BSD	REC	93	%	70-130
V2V4092-BSD	108-90-7	Chlorobenzene	BSD	RPD	1	%	20
V2V4092-BSD	75-00-3	Chloroethane	BSD	REC	124	%	70-130
V2V4092-BSD	75-00-3	Chloroethane	BSD	RPD	3	%	20
V2V4092-BSD	67-66-3	Chloroform	BSD	REC	94	%	70-130
V2V4092-BSD	67-66-3	Chloroform	BSD	RPD	0	%	20
V2V4092-BSD	74-87-3	Chloromethane	BSD	REC	97	%	70-130
V2V4092-BSD	74-87-3	Chloromethane	BSD	RPD	4	%	20
V2V4092-BSD	95-49-8	o-Chlorotoluene	BSD	REC	92	%	70-130
V2V4092-BSD	95-49-8	o-Chlorotoluene	BSD	RPD	0	%	20
V2V4092-BSD	106-43-4	p-Chlorotoluene	BSD	REC	91	%	70-130
V2V4092-BSD	106-43-4	p-Chlorotoluene	BSD	RPD	2	%	20
V2V4092-BSD	108-20-3	Di-Isopropyl ether	BSD	REC	105	%	70-130
V2V4092-BSD	108-20-3	Di-Isopropyl ether	BSD	RPD	2	%	20
V2V4092-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	REC	96	%	70-130
V2V4092-BSD	96-12-8	1,2-Dibromo-3-chloropropane	BSD	RPD	1	%	20
V2V4092-BSD	124-48-1	Dibromochloromethane	BSD	REC	101	%	70-130
V2V4092-BSD	124-48-1	Dibromochloromethane	BSD	RPD	0	%	20
V2V4092-BSD	106-93-4	1,2-Dibromoethane	BSD	REC	98	%	70-130

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4092-BSD	106-93-4	1,2-Dibromoethane	BSD	RPD	1	%	20
V2V4092-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	91	%	70-130
V2V4092-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	1	%	20
V2V4092-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	92	%	70-130
V2V4092-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	2	%	20
V2V4092-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	91	%	70-130
V2V4092-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	1	%	20
V2V4092-BSD	75-71-8	Dichlorodifluoromethane	BSD	REC	73	%	70-130
V2V4092-BSD	75-71-8	Dichlorodifluoromethane	BSD	RPD	4	%	20
V2V4092-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	102	%	70-130
V2V4092-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	2	%	20
V2V4092-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	96	%	70-130
V2V4092-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	2	%	20
V2V4092-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	100	%	70-130
V2V4092-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	0	%	20
V2V4092-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	102	%	70-130
V2V4092-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	1	%	20
V2V4092-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	REC	100	%	70-130
V2V4092-BSD	156-60-5	trans-1,2-Dichloroethene	BSD	RPD	0	%	20
V2V4092-BSD	78-87-5	1,2-Dichloropropane	BSD	REC	104	%	70-130
V2V4092-BSD	78-87-5	1,2-Dichloropropane	BSD	RPD	0	%	20
V2V4092-BSD	142-28-9	1,3-Dichloropropane	BSD	REC	97	%	70-130
V2V4092-BSD	142-28-9	1,3-Dichloropropane	BSD	RPD	1	%	20
V2V4092-BSD	594-20-7	2,2-Dichloropropane	BSD	REC	101	%	70-130
V2V4092-BSD	594-20-7	2,2-Dichloropropane	BSD	RPD	0	%	20
V2V4092-BSD	563-58-6	1,1-Dichloropropene	BSD	REC	99	%	70-130
V2V4092-BSD	563-58-6	1,1-Dichloropropene	BSD	RPD	1	%	20
V2V4092-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	REC	107	%	70-130
V2V4092-BSD	10061-01-5	cis-1,3-Dichloropropene	BSD	RPD	1	%	20
V2V4092-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	REC	107	%	70-130
V2V4092-BSD	10061-02-6	trans-1,3-Dichloropropene	BSD	RPD	1	%	20
V2V4092-BSD	123-91-1	1,4-Dioxane	BSD	REC	98	%	70-130
V2V4092-BSD	123-91-1	1,4-Dioxane	BSD	RPD	4	%	20
V2V4092-BSD	60-29-7	Ethyl Ether	BSD	REC	105	%	70-130
V2V4092-BSD	60-29-7	Ethyl Ether	BSD	RPD	2	%	20
V2V4092-BSD	100-41-4	Ethylbenzene	BSD	REC	94	%	70-130
V2V4092-BSD	100-41-4	Ethylbenzene	BSD	RPD	0	%	20
V2V4092-BSD	87-68-3	Hexachlorobutadiene	BSD	REC	83	%	70-130
V2V4092-BSD	87-68-3	Hexachlorobutadiene	BSD	RPD	1	%	20
V2V4092-BSD	591-78-6	2-Hexanone	BSD	REC	96	%	70-130
V2V4092-BSD	591-78-6	2-Hexanone	BSD	RPD	2	%	20
V2V4092-BSD	98-82-8	Isopropylbenzene	BSD	REC	94	%	70-130
V2V4092-BSD	98-82-8	Isopropylbenzene	BSD	RPD	1	%	20
V2V4092-BSD	99-87-6	p-Isopropyltoluene	BSD	REC	93	%	70-130
V2V4092-BSD	99-87-6	p-Isopropyltoluene	BSD	RPD	1	%	20

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4092-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	104	%	70-130
V2V4092-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	2	%	20
V2V4092-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	REC	103	%	70-130
V2V4092-BSD	108-10-1	4-Methyl-2-pentanone(MIBK)	BSD	RPD	0	%	20
V2V4092-BSD	74-95-3	Methylene bromide	BSD	REC	97	%	70-130
V2V4092-BSD	74-95-3	Methylene bromide	BSD	RPD	2	%	20
V2V4092-BSD	75-09-2	Methylene chloride	BSD	REC	100	%	70-130
V2V4092-BSD	75-09-2	Methylene chloride	BSD	RPD	0	%	20
V2V4092-BSD	91-20-3	Naphthalene	BSD	REC	90	%	70-130
V2V4092-BSD	91-20-3	Naphthalene	BSD	RPD	1	%	20
V2V4092-BSD	103-65-1	n-Propylbenzene	BSD	REC	92	%	70-130
V2V4092-BSD	103-65-1	n-Propylbenzene	BSD	RPD	0	%	20
V2V4092-BSD	100-42-5	Styrene	BSD	REC	97	%	70-130
V2V4092-BSD	100-42-5	Styrene	BSD	RPD	1	%	20
V2V4092-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	102	%	70-130
V2V4092-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	0	%	20
V2V4092-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	REC	104	%	70-130
V2V4092-BSD	637-92-3	tert-Butyl Ethyl Ether	BSD	RPD	2	%	20
V2V4092-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	REC	99	%	70-130
V2V4092-BSD	630-20-6	1,1,1,2-Tetrachloroethane	BSD	RPD	1	%	20
V2V4092-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	REC	101	%	70-130
V2V4092-BSD	79-34-5	1,1,2,2-Tetrachloroethane	BSD	RPD	1	%	20
V2V4092-BSD	127-18-4	Tetrachloroethene	BSD	REC	93	%	70-130
V2V4092-BSD	127-18-4	Tetrachloroethene	BSD	RPD	1	%	20
V2V4092-BSD	109-99-9	Tetrahydrofuran	BSD	REC	101	%	70-130
V2V4092-BSD	109-99-9	Tetrahydrofuran	BSD	RPD	4	%	20
V2V4092-BSD	108-88-3	Toluene	BSD	REC	95	%	70-130
V2V4092-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
V2V4092-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	REC	91	%	70-130
V2V4092-BSD	87-61-6	1,2,3-Trichlorobenzene	BSD	RPD	0	%	25
V2V4092-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	REC	92	%	70-130
V2V4092-BSD	120-82-1	1,2,4-Trichlorobenzene	BSD	RPD	0	%	20
V2V4092-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	97	%	70-130
V2V4092-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	0	%	20
V2V4092-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	97	%	70-130
V2V4092-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	0	%	20
V2V4092-BSD	79-01-6	Trichloroethene	BSD	REC	94	%	70-130
V2V4092-BSD	79-01-6	Trichloroethene	BSD	RPD	1	%	20
V2V4092-BSD	75-69-4	Trichlorofluoromethane	BSD	REC	97	%	70-130
V2V4092-BSD	75-69-4	Trichlorofluoromethane	BSD	RPD	0	%	20
V2V4092-BSD	96-18-4	1,2,3-Trichloropropane	BSD	REC	94	%	70-130
V2V4092-BSD	96-18-4	1,2,3-Trichloropropane	BSD	RPD	0	%	20
V2V4092-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	REC	91	%	70-130
V2V4092-BSD	95-63-6	1,2,4-Trimethylbenzene	BSD	RPD	0	%	20
V2V4092-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	REC	92	%	70-130

* Sample used for QC is not from job JD78419

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QC Evaluation: MA MCP Limits

Job Number: JD78419
Account: Jacobs Engineering
Project: Varian, Beverly, MA
Collected: 12/06/23 thru 12/07/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
V2V4092-BSD	108-67-8	1,3,5-Trimethylbenzene	BSD	RPD	2	%	20
V2V4092-BSD	75-01-4	Vinyl chloride	BSD	REC	100	%	70-130
V2V4092-BSD	75-01-4	Vinyl chloride	BSD	RPD	2	%	20
V2V4092-BSD		m,p-Xylene	BSD	REC	94	%	70-130
V2V4092-BSD		m,p-Xylene	BSD	RPD	1	%	20
V2V4092-BSD	95-47-6	o-Xylene	BSD	REC	93	%	70-130
V2V4092-BSD	95-47-6	o-Xylene	BSD	RPD	0	%	20
V2V4092-BSD	1330-20-7	Xylene (total)	BSD	REC	93	%	70-130
V2V4092-BSD	1330-20-7	Xylene (total)	BSD	RPD	1	%	20
V2V4092-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	98	%	70-130
V2V4092-BSD	2037-26-5	Toluene-D8	BSD	SURR	98	%	70-130
V2V4092-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	99	%	70-130
V2V4092-MB	1868-53-7	Dibromofluoromethane	MB	SURR	101	%	70-130
V2V4092-MB	2037-26-5	Toluene-D8	MB	SURR	100	%	70-130
V2V4092-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	103	%	70-130
JD78419-6	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78419-6	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78419-6	460-00-4	4-Bromofluorobenzene	SAMP	SURR	102	%	70-130
JD78419-7	1868-53-7	Dibromofluoromethane	SAMP	SURR	103	%	70-130
JD78419-7	2037-26-5	Toluene-D8	SAMP	SURR	99	%	70-130
JD78419-7	460-00-4	4-Bromofluorobenzene	SAMP	SURR	103	%	70-130

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* Sample used for QC is not from job JD78419

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-MB	2V102789.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-8, JD78419-9

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-MB	2V102789.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-8, JD78419-9

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-MB	2V102789.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-8, JD78419-9

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	101%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	103%	82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

6.1.1
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Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4092-MB	2V102849.D	1	12/13/23	BN	n/a	n/a	V2V4092

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-7

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
108-86-1	Bromobenzene	ND	1.0	ug/l	
74-97-5	Bromochloromethane	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	2.0	ug/l	
78-93-3	2-Butanone (MEK)	ND	10	ug/l	
104-51-8	n-Butylbenzene	ND	2.0	ug/l	
135-98-8	sec-Butylbenzene	ND	2.0	ug/l	
98-06-6	tert-Butylbenzene	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	2.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-49-8	o-Chlorotoluene	ND	2.0	ug/l	
106-43-4	p-Chlorotoluene	ND	2.0	ug/l	
108-20-3	Di-Isopropyl ether	ND	2.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
106-93-4	1,2-Dibromoethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
142-28-9	1,3-Dichloropropane	ND	1.0	ug/l	
594-20-7	2,2-Dichloropropane	ND	1.0	ug/l	
563-58-6	1,1-Dichloropropene	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4092-MB	2V102849.D	1	12/13/23	BN	n/a	n/a	V2V4092

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-7

CAS No.	Compound	Result	RL	Units	Q
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
123-91-1	1,4-Dioxane	ND	130	ug/l	
60-29-7	Ethyl Ether	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	1.0	ug/l	
99-87-6	p-Isopropyltoluene	ND	2.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
108-10-1	4-Methyl-2-pentanone(MIBK)	ND	5.0	ug/l	
74-95-3	Methylene bromide	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
103-65-1	n-Propylbenzene	ND	2.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
637-92-3	tert-Butyl Ethyl Ether	ND	2.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
109-99-9	Tetrahydrofuran	ND	10	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	2.0	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	2.0	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4092-MB	2V102849.D	1	12/13/23	BN	n/a	n/a	V2V4092

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-7

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	102%	80-120%
2037-26-5	Toluene-D8	100%	80-120%
460-00-4	4-Bromofluorobenzene	103%	82-114%

CAS No.	Tentatively Identified Compounds	R. T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

6.1.2
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Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-BS	2V102786.D	1	12/12/23	BN	n/a	n/a	V2V4090
V2V4090-BSD	2V102787.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-8, JD78419-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	209	105	198	99	5	27-175/31
71-43-2	Benzene	50	49.9	100	51.2	102	3	80-115/11
108-86-1	Bromobenzene	50	45.4	91	46.4	93	2	79-119/11
74-97-5	Bromochloromethane	50	50.8	102	51.3	103	1	83-122/10
75-27-4	Bromodichloromethane	50	49.9	100	50.2	100	1	82-119/12
75-25-2	Bromoform	50	50.8	102	50.3	101	1	77-135/11
74-83-9	Bromomethane	50	48.1	96	50.5	101	5	40-162/23
78-93-3	2-Butanone (MEK)	200	219	110	209	105	5	61-150/16
104-51-8	n-Butylbenzene	50	46.3	93	47.5	95	3	77-124/12
135-98-8	sec-Butylbenzene	50	44.5	89	46.1	92	4	75-121/12
98-06-6	tert-Butylbenzene	50	43.7	87	44.9	90	3	74-120/11
75-15-0	Carbon disulfide	50	50.9	102	53.9	108	6	64-130/13
56-23-5	Carbon tetrachloride	50	48.4	97	50.8	102	5	75-127/11
108-90-7	Chlorobenzene	50	45.7	91	46.5	93	2	80-115/10
75-00-3	Chloroethane	50	58.4	117	62.3	125	6	56-144/14
67-66-3	Chloroform	50	47.1	94	48.4	97	3	75-116/10
74-87-3	Chloromethane	50	51.0	102	53.4	107	5	41-153/14
95-49-8	o-Chlorotoluene	50	46.0	92	46.9	94	2	79-119/11
106-43-4	p-Chlorotoluene	50	45.1	90	46.0	92	2	77-117/11
108-20-3	Di-Isopropyl ether	50	53.8	108	54.1	108	1	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	48.9	98	48.1	96	2	69-134/11
124-48-1	Dibromochloromethane	50	50.5	101	50.1	100	1	81-123/11
106-93-4	1,2-Dibromoethane	50	49.2	98	48.6	97	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	45.0	90	45.4	91	1	81-117/10
541-73-1	1,3-Dichlorobenzene	50	44.9	90	45.6	91	2	81-115/10
106-46-7	1,4-Dichlorobenzene	50	44.7	89	45.1	90	1	80-114/10
75-71-8	Dichlorodifluoromethane	50	35.9	72	41.6	83	15	43-152/16
75-34-3	1,1-Dichloroethane	50	51.9	104	53.3	107	3	75-125/11
107-06-2	1,2-Dichloroethane	50	49.1	98	48.7	97	1	73-117/10
75-35-4	1,1-Dichloroethene	50	53.8	108	55.0	110	2	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	50.8	102	52.4	105	3	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	49.8	100	52.0	104	4	77-121/12
78-87-5	1,2-Dichloropropane	50	51.7	103	52.0	104	1	79-121/10
142-28-9	1,3-Dichloropropane	50	49.6	99	48.3	97	3	81-117/11
594-20-7	2,2-Dichloropropane	50	50.8	102	50.8	102	0	70-131/12
563-58-6	1,1-Dichloropropene	50	49.5	99	51.7	103	4	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-BS	2V102786.D	1	12/12/23	BN	n/a	n/a	V2V4090
V2V4090-BSD	2V102787.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-8, JD78419-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	53.0	106	53.4	107	1	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	53.1	106	52.6	105	1	83-122/12
123-91-1	1,4-Dioxane	1250	1270	102	1240	99	2	64-150/20
60-29-7	Ethyl Ether	50	54.9	110	55.4	111	1	74-132/11
100-41-4	Ethylbenzene	50	46.0	92	46.6	93	1	78-116/10
87-68-3	Hexachlorobutadiene	50	40.0	80	42.0	84	5	55-136/14
591-78-6	2-Hexanone	200	209	105	199	100	5	66-136/14
98-82-8	Isopropylbenzene	50	46.3	93	46.9	94	1	78-121/11
99-87-6	p-Isopropyltoluene	50	45.3	91	46.6	93	3	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	53.4	107	53.4	107	0	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	211	106	206	103	2	73-134/13
74-95-3	Methylene bromide	50	49.1	98	49.1	98	0	82-117/10
75-09-2	Methylene chloride	50	50.5	101	51.8	104	3	73-123/11
91-20-3	Naphthalene	50	45.0	90	45.1	90	0	64-136/13
103-65-1	n-Propylbenzene	50	45.1	90	46.6	93	3	75-121/11
100-42-5	Styrene	50	48.2	96	48.3	97	0	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	50.9	102	51.1	102	0	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	52.9	106	53.1	106	0	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	48.6	97	49.1	98	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	50.8	102	49.3	99	3	73-126/12
127-18-4	Tetrachloroethene	50	45.3	91	46.4	93	2	73-119/12
109-99-9	Tetrahydrofuran	50	53.7	107	53.4	107	1	63-133/11
108-88-3	Toluene	50	46.4	93	46.9	94	1	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	45.4	91	46.0	92	1	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	45.6	91	45.8	92	0	68-135/12
71-55-6	1,1,1-Trichloroethane	50	47.8	96	50.0	100	4	76-124/11
79-00-5	1,1,2-Trichloroethane	50	48.8	98	47.9	96	2	83-117/11
79-01-6	Trichloroethene	50	46.5	93	48.5	97	4	80-118/11
75-69-4	Trichlorofluoromethane	50	48.6	97	51.8	104	6	67-134/13
96-18-4	1,2,3-Trichloropropane	50	47.2	94	47.1	94	0	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	45.1	90	46.5	93	3	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	44.9	90	46.3	93	3	77-120/11
75-01-4	Vinyl chloride	50	52.2	104	54.8	110	5	52-146/15
	m,p-Xylene	100	91.7	92	93.0	93	1	79-119/10
95-47-6	o-Xylene	50	46.2	92	46.4	93	0	81-119/10
1330-20-7	Xylene (total)	150	138	92	139	93	1	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4090-BS	2V102786.D	1	12/12/23	BN	n/a	n/a	V2V4090
V2V4090-BSD	2V102787.D	1	12/12/23	BN	n/a	n/a	V2V4090

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-8, JD78419-9

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	101%	100%	80-120%
17060-07-0	1,2-Dichloroethane-D4	100%	98%	80-120%
2037-26-5	Toluene-D8	99%	98%	80-120%
460-00-4	4-Bromofluorobenzene	100%	101%	82-114%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4092-BS	2V102846.D	1	12/13/23	BN	n/a	n/a	V2V4092
V2V4092-BSD	2V102847.D	1	12/13/23	BN	n/a	n/a	V2V4092

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	200	161	81	173	87	7	27-175/31
71-43-2	Benzene	50	50.5	101	50.6	101	0	80-115/11
108-86-1	Bromobenzene	50	45.9	92	46.0	92	0	79-119/11
74-97-5	Bromochloromethane	50	50.5	101	51.0	102	1	83-122/10
75-27-4	Bromodichloromethane	50	50.4	101	49.7	99	1	82-119/12
75-25-2	Bromoform	50	51.0	102	51.2	102	0	77-135/11
74-83-9	Bromomethane	50	51.1	102	49.3	99	4	40-162/23
78-93-3	2-Butanone (MEK)	200	189	95	193	97	2	61-150/16
104-51-8	n-Butylbenzene	50	47.2	94	47.3	95	0	77-124/12
135-98-8	sec-Butylbenzene	50	45.3	91	45.9	92	1	75-121/12
98-06-6	tert-Butylbenzene	50	44.3	89	44.8	90	1	74-120/11
75-15-0	Carbon disulfide	50	45.2	90	45.6	91	1	64-130/13
56-23-5	Carbon tetrachloride	50	48.7	97	49.2	98	1	75-127/11
108-90-7	Chlorobenzene	50	46.3	93	46.6	93	1	80-115/10
75-00-3	Chloroethane	50	63.7	127	61.9	124	3	56-144/14
67-66-3	Chloroform	50	47.3	95	47.2	94	0	75-116/10
74-87-3	Chloromethane	50	50.1	100	48.3	97	4	41-153/14
95-49-8	o-Chlorotoluene	50	46.4	93	46.2	92	0	79-119/11
106-43-4	p-Chlorotoluene	50	44.9	90	45.6	91	2	77-117/11
108-20-3	Di-Isopropyl ether	50	53.6	107	52.6	105	2	69-135/11
96-12-8	1,2-Dibromo-3-chloropropane	50	48.5	97	48.2	96	1	69-134/11
124-48-1	Dibromochloromethane	50	50.6	101	50.6	101	0	81-123/11
106-93-4	1,2-Dibromoethane	50	48.7	97	49.0	98	1	67-138/11
95-50-1	1,2-Dichlorobenzene	50	45.1	90	45.4	91	1	81-117/10
541-73-1	1,3-Dichlorobenzene	50	44.9	90	45.9	92	2	81-115/10
106-46-7	1,4-Dichlorobenzene	50	45.2	90	45.5	91	1	80-114/10
75-71-8	Dichlorodifluoromethane	50	35.1	70	36.4	73	4	43-152/16
75-34-3	1,1-Dichloroethane	50	51.7	103	50.9	102	2	75-125/11
107-06-2	1,2-Dichloroethane	50	49.0	98	47.9	96	2	73-117/10
75-35-4	1,1-Dichloroethene	50	50.2	100	50.0	100	0	70-124/12
156-59-2	cis-1,2-Dichloroethene	50	51.5	103	51.0	102	1	80-120/10
156-60-5	trans-1,2-Dichloroethene	50	49.8	100	49.8	100	0	77-121/12
78-87-5	1,2-Dichloropropane	50	52.1	104	51.9	104	0	79-121/10
142-28-9	1,3-Dichloropropane	50	49.0	98	48.7	97	1	81-117/11
594-20-7	2,2-Dichloropropane	50	50.8	102	50.7	101	0	70-131/12
563-58-6	1,1-Dichloropropene	50	50.2	100	49.5	99	1	77-122/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4092-BS	2V102846.D	1	12/13/23	BN	n/a	n/a	V2V4092
V2V4092-BSD	2V102847.D	1	12/13/23	BN	n/a	n/a	V2V4092

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-01-5	cis-1,3-Dichloropropene	50	53.9	108	53.3	107	1	83-123/11
10061-02-6	trans-1,3-Dichloropropene	50	53.2	106	53.5	107	1	83-122/12
123-91-1	1,4-Dioxane	1250	1280	102	1230	98	4	64-150/20
60-29-7	Ethyl Ether	50	53.5	107	52.4	105	2	74-132/11
100-41-4	Ethylbenzene	50	46.8	94	47.0	94	0	78-116/10
87-68-3	Hexachlorobutadiene	50	41.4	83	41.7	83	1	55-136/14
591-78-6	2-Hexanone	200	189	95	192	96	2	66-136/14
98-82-8	Isopropylbenzene	50	46.7	93	47.1	94	1	78-121/11
99-87-6	p-Isopropyltoluene	50	46.1	92	46.5	93	1	78-121/12
1634-04-4	Methyl Tert Butyl Ether	50	53.0	106	52.1	104	2	76-123/12
108-10-1	4-Methyl-2-pentanone(MIBK)	200	205	103	205	103	0	73-134/13
74-95-3	Methylene bromide	50	49.7	99	48.6	97	2	82-117/10
75-09-2	Methylene chloride	50	50.3	101	50.2	100	0	73-123/11
91-20-3	Naphthalene	50	44.7	89	45.1	90	1	64-136/13
103-65-1	n-Propylbenzene	50	45.9	92	46.0	92	0	75-121/11
100-42-5	Styrene	50	48.3	97	48.6	97	1	81-125/10
994-05-8	tert-Amyl Methyl Ether	50	51.1	102	50.9	102	0	80-119/11
637-92-3	tert-Butyl Ethyl Ether	50	52.6	105	51.8	104	2	77-124/10
630-20-6	1,1,1,2-Tetrachloroethane	50	49.1	98	49.6	99	1	81-124/10
79-34-5	1,1,2,2-Tetrachloroethane	50	51.0	102	50.5	101	1	73-126/12
127-18-4	Tetrachloroethene	50	45.9	92	46.4	93	1	73-119/12
109-99-9	Tetrahydrofuran	50	52.6	105	50.7	101	4	63-133/11
108-88-3	Toluene	50	46.4	93	47.5	95	2	79-116/12
87-61-6	1,2,3-Trichlorobenzene	50	45.4	91	45.6	91	0	63-137/13
120-82-1	1,2,4-Trichlorobenzene	50	46.2	92	46.1	92	0	68-135/12
71-55-6	1,1,1-Trichloroethane	50	48.6	97	48.6	97	0	76-124/11
79-00-5	1,1,2-Trichloroethane	50	48.5	97	48.4	97	0	83-117/11
79-01-6	Trichloroethene	50	47.4	95	47.1	94	1	80-118/11
75-69-4	Trichlorofluoromethane	50	48.4	97	48.3	97	0	67-134/13
96-18-4	1,2,3-Trichloropropane	50	46.9	94	46.8	94	0	75-123/11
95-63-6	1,2,4-Trimethylbenzene	50	45.7	91	45.7	91	0	78-120/10
108-67-8	1,3,5-Trimethylbenzene	50	45.1	90	45.8	92	2	77-120/11
75-01-4	Vinyl chloride	50	51.3	103	50.1	100	2	52-146/15
	m,p-Xylene	100	92.6	93	93.7	94	1	79-119/10
95-47-6	o-Xylene	50	46.7	93	46.7	93	0	81-119/10
1330-20-7	Xylene (total)	150	139	93	140	93	1	80-119/10

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2V4092-BS	2V102846.D	1	12/13/23	BN	n/a	n/a	V2V4092
V2V4092-BSD	2V102847.D	1	12/13/23	BN	n/a	n/a	V2V4092

The QC reported here applies to the following samples:

Method: SW846 8260D

JD78419-6, JD78419-7

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	99%	98%	80-120%
17060-07-0	1,2-Dichloroethane-D4	98%	96%	80-120%
2037-26-5	Toluene-D8	98%	98%	80-120%
460-00-4	4-Bromofluorobenzene	100%	99%	82-114%

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std:	V2V4090-CC4070	Injection Date:	12/12/23
Lab File ID:	2V102784.D	Injection Time:	09:53
Instrument ID:	GCMS2V	Method:	SW846 8260D

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	190062	2.24	332722	3.20	556762	3.66	501228	5.64	259334	7.42
Upper Limit ^a	380124	2.74	665444	3.70	1113524	4.16	1002456	6.14	518668	7.92
Lower Limit ^b	95031	1.74	166361	2.70	278381	3.16	250614	5.14	129667	6.92

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
V2V4090-BS	189370	2.25	327610	3.20	533664	3.66	481588	5.64	248125	7.42
V2V4090-BSD	197595	2.25	332283	3.20	544202	3.66	492897	5.64	250579	7.42
V2V4090-MB	191176	2.24	320832	3.20	540272	3.66	489234	5.64	240662	7.42
ZZZZZZ	168673	2.24	304697	3.20	524678	3.66	470125	5.64	231036	7.42
ZZZZZZ	172636	2.24	307413	3.20	522760	3.66	477728	5.64	232272	7.42
ZZZZZZ	173983	2.24	294198	3.21	501186	3.66	451903	5.64	223438	7.42
JD78532-1	159843	2.24	294392	3.20	505374	3.66	457295	5.64	221041	7.42
ZZZZZZ	179309	2.24	283219	3.20	481405	3.66	438997	5.64	220844	7.42
JD78532-1MS	173299	2.25	322334	3.21	522568	3.66	469387	5.64	240745	7.42
JD78532-1MSD	181681	2.25	329300	3.21	531218	3.66	480162	5.64	243075	7.42
ZZZZZZ	189197	2.25	342179	3.21	555817	3.66	494890	5.64	246193	7.42
JD78419-8	190610	2.25	318899	3.21	536818	3.66	488018	5.64	241614	7.42
JD78419-9	181992	2.25	308975	3.21	524989	3.66	478013	5.64	235727	7.42
JD78419-6	174049	2.25	289761	3.21	500626	3.66	453252	5.64	225429	7.42
ZZZZZZ	175392	2.24	300101	3.20	507197	3.66	462442	5.64	223864	7.42
ZZZZZZ	169589	2.25	299785	3.21	508538	3.66	462449	5.64	225851	7.42
ZZZZZZ	165520	2.25	286338	3.21	488267	3.66	441902	5.64	216659	7.42
ZZZZZZ	194725	2.25	292899	3.21	498594	3.66	452782	5.64	222368	7.42
ZZZZZZ	170846	2.24	288274	3.20	490449	3.66	443287	5.64	220132	7.42
ZZZZZZ	167746	2.25	287442	3.21	490381	3.66	448624	5.64	222857	7.42
ZZZZZZ	181193	2.25	295439	3.21	505629	3.66	462643	5.64	226934	7.42
ZZZZZZ	171140	2.25	295275	3.21	502310	3.66	456633	5.64	225726	7.42

- IS 1** = Tert Butyl Alcohol-D9
- IS 2** = Pentafluorobenzene
- IS 3** = 1,4-Difluorobenzene
- IS 4** = Chlorobenzene-D5
- IS 5** = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Check Std: V2V4092-CC4070	Injection Date: 12/13/23
Lab File ID: 2V102844.D	Injection Time: 11:28
Instrument ID: GCMS2V	Method: SW846 8260D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	173333	2.24	324486	3.20	544741	3.66	492500	5.64	250802	7.42
Upper Limit ^a	346666	2.74	648972	3.70	1089482	4.16	985000	6.14	501604	7.92
Lower Limit ^b	86667	1.74	162243	2.70	272371	3.16	246250	5.14	125401	6.92

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V2V4092-BS	182753	2.25	323617	3.21	524468	3.66	477882	5.64	245123	7.42
V2V4092-BSD	193075	2.25	330776	3.21	533812	3.66	481642	5.64	248093	7.42
V2V4092-MB	197722	2.24	321588	3.21	534269	3.66	487219	5.64	243547	7.42
JD78419-7	183045	2.24	309545	3.21	525394	3.66	480001	5.64	234752	7.42
JD78419-6	185137	2.24	311752	3.21	525487	3.66	481403	5.64	239514	7.42
ZZZZZZ	169967	2.24	298816	3.20	504579	3.66	461398	5.64	227011	7.42
ZZZZZZ	172988	2.24	286372	3.20	489410	3.66	453598	5.64	223514	7.42
ZZZZZZ	171413	2.24	296682	3.20	500459	3.66	455412	5.64	225860	7.42
JD78532-19	178306	2.25	298590	3.21	508311	3.66	461442	5.64	229014	7.42
ZZZZZZ	196005	2.25	297328	3.21	502740	3.66	456616	5.64	233557	7.42
JD78532-19MS	184967	2.25	325504	3.21	527880	3.66	480093	5.64	248084	7.42
JD78532-19MSD	182779	2.25	332293	3.21	535246	3.66	488617	5.64	247470	7.42
ZZZZZZ	179381	2.24	339406	3.21	555725	3.66	497670	5.64	248256	7.42
ZZZZZZ	194811	2.24	319434	3.21	531880	3.66	490793	5.64	247853	7.42
ZZZZZZ	178396	2.24	306440	3.21	514654	3.66	468789	5.64	233334	7.42
ZZZZZZ	166989	2.24	293177	3.21	493604	3.66	449266	5.64	220218	7.42
ZZZZZZ	173531	2.24	294935	3.20	494917	3.66	449835	5.64	226679	7.42
ZZZZZZ	172809	2.24	295858	3.20	492357	3.66	454185	5.64	234538	7.42
ZZZZZZ	198873	2.25	298050	3.21	502848	3.66	459207	5.64	233978	7.42
ZZZZZZ	168589	2.25	298504	3.21	504914	3.66	453347	5.64	232125	7.42
ZZZZZZ	160304	2.24	291779	3.21	490132	3.66	438988	5.64	218841	7.42
ZZZZZZ	167289	2.24	301761	3.21	511455	3.66	460534	5.64	229206	7.42
ZZZZZZ	163940	2.24	300316	3.21	505606	3.66	461685	5.64	228877	7.42
ZZZZZZ	159635	2.24	296739	3.21	509026	3.66	458255	5.64	228409	7.42
ZZZZZZ	168390	2.24	300378	3.21	510016	3.66	457698	5.64	227585	7.42

- IS 1 = Tert Butyl Alcohol-D9
- IS 2 = Pentafluorobenzene
- IS 3 = 1,4-Difluorobenzene
- IS 4 = Chlorobenzene-D5
- IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Surrogate Recovery Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Method: SW846 8260D	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD78419-6	2V102852.D	103	104	99	102
JD78419-6	2V102801.D	104	102	101	102
JD78419-7	2V102851.D	103	103	99	103
JD78419-8	2V102799.D	101	101	100	102
JD78419-9	2V102800.D	102	103	100	102
V2V4090-BS	2V102786.D	101	100	99	100
V2V4090-BSD	2V102787.D	100	98	98	101
V2V4090-MB	2V102789.D	101	101	100	103
V2V4092-BS	2V102846.D	99	98	98	100
V2V4092-BSD	2V102847.D	98	96	98	99
V2V4092-MB	2V102849.D	101	102	100	103

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	80-120%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	82-114%

6.4.1
6

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2956-MB	AA105871.D	1	12/19/23	ML	n/a	n/a	GAA2956

The QC reported here applies to the following samples:

Method: RSK-175

JD78419-1, JD78419-2, JD78419-3, JD78419-4, JD78419-5

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

7.1.1
7

Method Blank Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2957-MB	AA105915.D	1	12/20/23	ML	n/a	n/a	GAA2957

The QC reported here applies to the following samples:

Method: RSK-175

JD78419-8

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	
74-84-0	Ethane	ND	0.23	ug/l	
74-85-1	Ethene	ND	0.31	ug/l	

Laboratory Control Sample Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2956-LCS	AA105867.D	1	12/19/23	ML	n/a	n/a	GAA2956

The QC reported here applies to the following samples:

Method: RSK-175

JD78419-1, JD78419-2, JD78419-3, JD78419-4, JD78419-5

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	9.44	86	50-150
74-84-0	Ethane	23	18.7	81	50-150
74-85-1	Ethene	31	24.7	80	50-150

7.2.1
7

* = Outside of Control Limits.

Laboratory Control Sample Summary

Job Number: JD78419
Account: JACOBMAB Jacobs Engineering
Project: Varian, Beverly, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA2957-LCS	AA105912.D	1	12/20/23	ML	n/a	n/a	GAA2957

The QC reported here applies to the following samples:

Method: RSK-175

JD78419-8

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	10.9	99	50-150
74-84-0	Ethane	23	22.0	96	50-150
74-85-1	Ethene	31	29.5	95	50-150

* = Outside of Control Limits.

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD78419
Account: JACOBMAB - Jacobs Engineering
Project: Varian, Beverly, MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Total Organic Carbon	GP50974/GN49146	1.0	0.14	mg/l	10	10.5	105.0	90-110%

Associated Samples:
Batch GP50974: JD78419-8
(*) Outside of QC limits

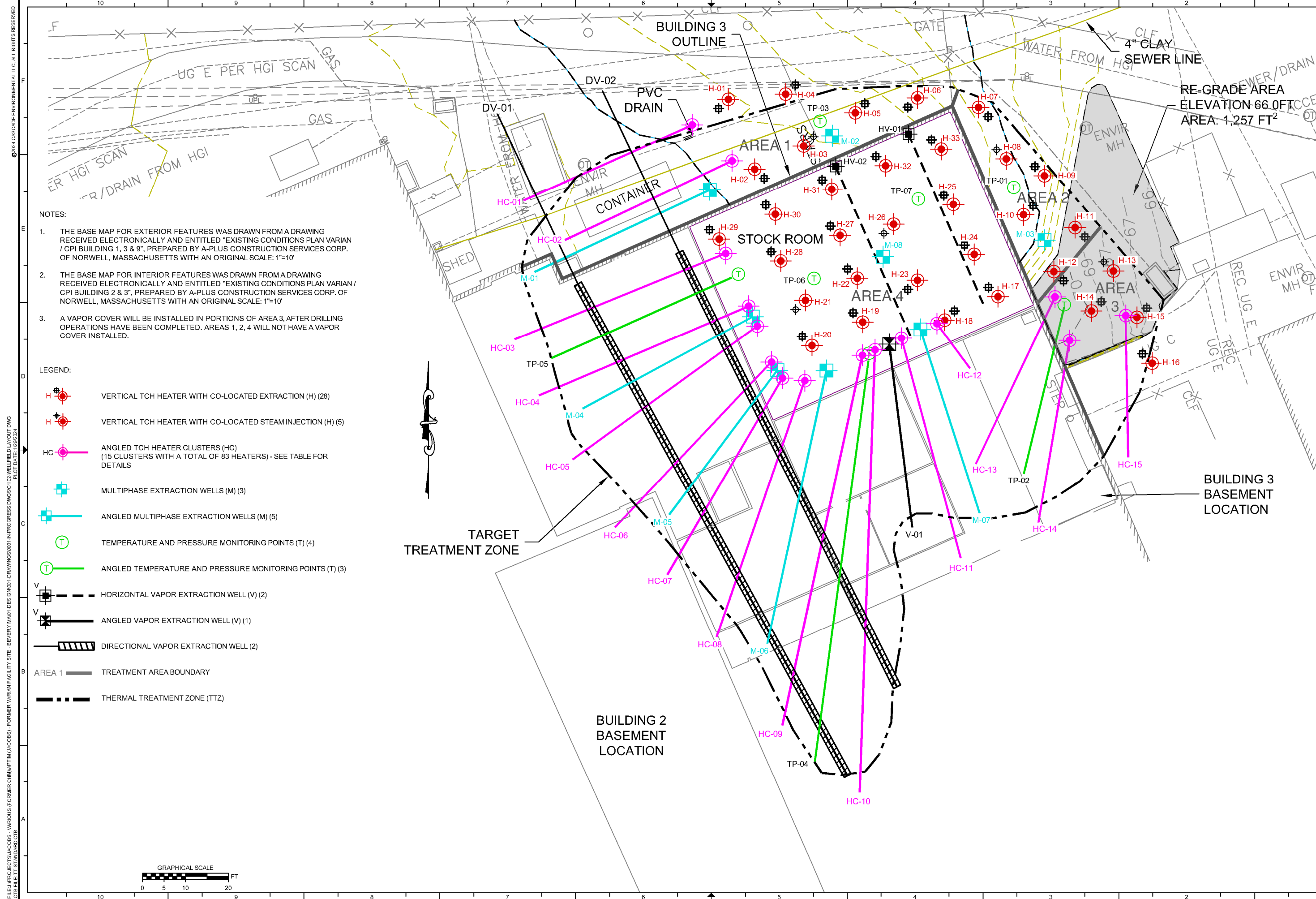
8.1

8

Appendix E. ISTR Updated Design Drawings



DRAFT



- NOTES:
1. THE BASE MAP FOR EXTERIOR FEATURES WAS DRAWN FROM A DRAWING RECEIVED ELECTRONICALLY AND ENTITLED "EXISTING CONDITIONS PLAN VARIAN / CPI BUILDING 1, 3 & 9", PREPARED BY A-PLUS CONSTRUCTION SERVICES CORP. OF NORWELL, MASSACHUSETTS WITH AN ORIGINAL SCALE: 1"=10'
 2. THE BASE MAP FOR INTERIOR FEATURES WAS DRAWN FROM A DRAWING RECEIVED ELECTRONICALLY AND ENTITLED "EXISTING CONDITIONS PLAN VARIAN / CPI BUILDING 2 & 3", PREPARED BY A-PLUS CONSTRUCTION SERVICES CORP. OF NORWELL, MASSACHUSETTS WITH AN ORIGINAL SCALE: 1"=10'
 3. A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 WILL NOT HAVE A VAPOR COVER INSTALLED.

- LEGEND:
- H (with red circle) VERTICAL TCH HEATER WITH CO-LOCATED EXTRACTION (H) (28)
 - H (with black circle) VERTICAL TCH HEATER WITH CO-LOCATED STEAM INJECTION (H) (5)
 - HC (with pink circle) ANGLED TCH HEATER CLUSTERS (HC) (15 CLUSTERS WITH A TOTAL OF 83 HEATERS) - SEE TABLE FOR DETAILS
 - M (with cyan square) MULTIPHASE EXTRACTION WELLS (M) (3)
 - M (with cyan square) ANGLED MULTIPHASE EXTRACTION WELLS (M) (5)
 - T (with green circle) TEMPERATURE AND PRESSURE MONITORING POINTS (T) (4)
 - T (with green circle) ANGLED TEMPERATURE AND PRESSURE MONITORING POINTS (T) (3)
 - V (with black square) HORIZONTAL VAPOR EXTRACTION WELL (V) (2)
 - V (with black square) ANGLED VAPOR EXTRACTION WELL (V) (1)
 - (with hatched rectangle) DIRECTIONAL VAPOR EXTRACTION WELL (2)
 - AREA 1 (with solid line) TREATMENT AREA BOUNDARY
 - (with dashed line) THERMAL TREATMENT ZONE (TTZ)

REV	DATE	DESCRIPTION	BY	CHK
D	2/16/2024	80% WORK PLAN DESIGN	HE	HE
C	1/5/2024	REVISED HC-01 & HC-02 WATER LAYOUT	HE	HE
B	11/8/2023	FINAL EXTERIOR WELLFIELD DESIGN	HE	HE
A	1/30/2023	PRELIMINARY DESIGN DRAFT	HE	HE

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IN SITU THERMAL REMEDIATION DESIGN
BEVERLY, MASSACHUSETTS

WELLFIELD LAYOUT

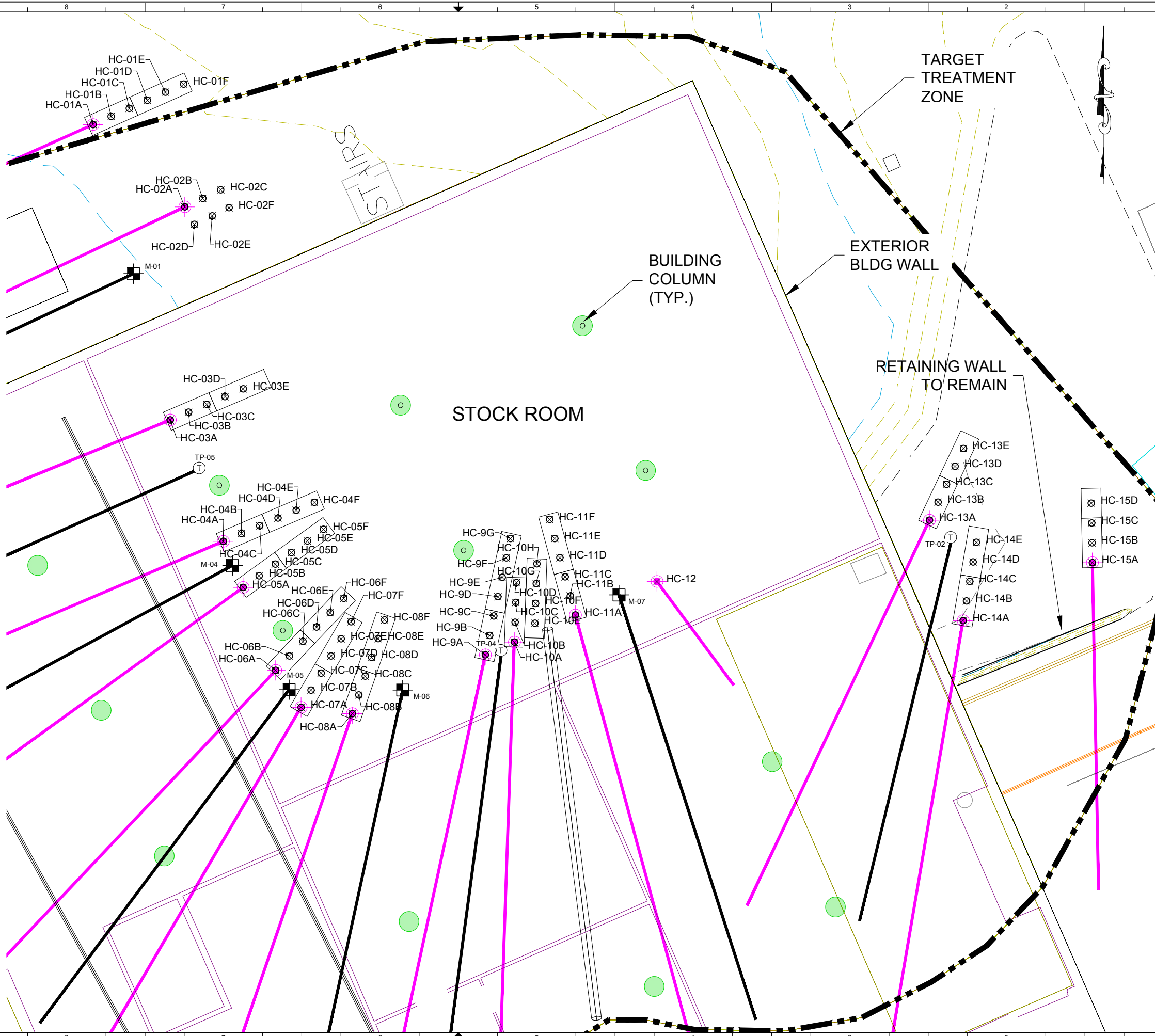
SCALE: AS SHOWN
SHEET SIZE: D D
REFERENCE NO: 501-231-000
SHEET: 1 OF 1
DWG NO: C102

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 FILE: \PROJECTS\JACOBS - VARIOUS (FORMER CIMA)\PTM (JACOBS) - FORMER VARIAN FACILITY SITE - BEVERLY MA\01-DESIGN\01-DRAWINGS\001-IN-PROGRESS\DWG\C102-WELLFIELD LAYOUT.DWG
 CTB FILE: TT_STANDARD.CTB
 DATE: 1/29/2024

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FILE: \PROJECTS\JACOBS - VARIOUS (FORMER CH2M HILL) (JACOBS) - FORMER VARIAN FACILITY SITE - BEVERLY MASS - DESIGN\001-DRAWINGS\001-IN-PROGRESS DWG\B102.WELLFIELD LAYOUT.DWG
PLOT DATE: 1/29/2024

- NOTES:
1. THE BASE MAP FOR EXTERIOR FEATURES WAS DRAWN FROM A DRAWING RECEIVED ELECTRONICALLY AND ENTITLED "EXISTING CONDITIONS PLAN VARIAN / CPI BUILDING 1, 3 & 9", PREPARED BY A-PLUS CONSTRUCTION SERVICES CORP. OF NORWELL, MASSACHUSETTS WITH AN ORIGINAL SCALE: 1"=10'
 2. THE BASE MAP FOR INTERIOR FEATURES WAS DRAWN FROM A DRAWING RECEIVED ELECTRONICALLY AND ENTITLED "EXISTING CONDITIONS PLAN VARIAN / CPI BUILDING 2 & 3", PREPARED BY A-PLUS CONSTRUCTION SERVICES CORP. OF NORWELL, MASSACHUSETTS WITH AN ORIGINAL SCALE: 1"=10'
 3. THIS SHEET IS A DETAIL FOR ANGLED CLUSTERS. VERTICAL INFRASTRUCTURE IS NOT SHOWN FOR CLARITY PURPOSES. PLEASE REFER TO C-102, SHEET 1 FOR FULL WELLFIELD DETAILS

- LEGEND:
- HC (Symbol) ANGLED TCH HEATER CLUSTERS (HC) (15 CLUSTERS WITH A TOTAL OF 83 HEATERS) - SEE TABLE 1 FOR DETAILS ON SHEET 3
 - M (Symbol) ANGLED MULTI-PHASE EXTRACTION WELLS (M) (4)
 - T (Symbol) ANGLED TEMPERATURE AND PRESSURE MONITORING POINT (TP) (3)
 - (Dashed Line) TARGET TREATMENT ZONE



DRAFT

REV	DATE	BY	CHK	DL	SG	DESCRIPTION
A	1/6/2024	RH	BM	DL	SG	HEATER CLUSTER WELLFIELD DESIGN

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TERRATHERM
a Cascade Company
151 SUFFOLK LANE
GARDNER, MA 01440
(978) 730-1200
WWW.CASCADE-ENV.COM

IN SITU THERMAL REMEDIATION DESIGN
BEVERLY, MASSACHUSETTS

WELLFIELD LAYOUT

SCALE:	AS SHOWN
SHEET SIZE:	D A
REFERENCE NO.:	R231.00
SHEET:	2 OF 2
DWG NO.:	C102

FILE: J:\PROJECTS\JACOBES - VARIOUS (FORMER CHEMTRIM (JACOBES) - FORMER VARIAN FACILITY SITE - BEVERLY MASS) - DESIGN\001-DRAWINGS\001-IN-PROGRESS DWG\ISTT Wellfield Layout.dwg
 PLOT DATE: 1/29/2024
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ISTT Wellfield Summary

Area	ID	Heater Cluster Type	Co-located Screen	Angle ¹ [°]	Azimuth ² [°]	Boring Dia. Upper [in]	Boring Dia. Lower [in]	Boring Length Upper ³ [ft]	Boring Length Lower [ft]	Boring Length Total [ft]
Area 1	HC-01	HC-01A	V	22	246	7-8	6-7	39.5	21.0	60.5
		HC-01B	-	38	246	6-7	-	-	-	72.0
		HC-01C	V	50	246	7-8	6-7	20.5	70.5	91.0
		HC-01D	-	60	246	6-7	-	-	-	84.0
		HC-01E	V	71	246	7-8	6-7	17	60.0	77.0
		HC-01F	-	82	246	6-7	-	-	-	73.5
	HC-02	HC-02A	V	22	245	7-8	6-7	39.5	32	71.5
		HC-02B	-	35	245	6-7	-	-	-	82.0
		HC-02C	V	45	245	7-8	6-7	22	76	98.0
		HC-02D	-	55	245	6-7	-	-	-	88.5
		HC-02E	V	66	245	7-8	6-7	17.5	62.0	79.5
		HC-02F	-	78	245	7-8	-	-	-	74.5
	H-01	V	-	-	7-8	6-7	16	56	72.0	
	H-02	V	-	-	7-8	6-7	16	56	72.0	
	H-03	S	-	-	7-8	6-7	31	41	72.0	
	H-04	V	-	-	7-8	6-7	16	56	72.0	
	H-05	V	-	-	7-8	6-7	16	56	72.0	
	H-06	V	-	-	7-8	6-7	16	56	72.0	
	M-01	-	56	245	8	-	-	-	80.0	
	M-02	-	8	-	-	-	-	-	67.0	
TP-03	-	6-7	-	-	-	-	-	66.0		
Area 2	H-07	V	-	-	7-8	6-7	11	56	67.0	
	H-08	S	-	-	7-8	6-7	26	41	67.0	
	H-09	V	-	-	7-8	6-7	11	56	67.0	
	H-10	V	-	-	7-8	6-7	11	56	67.0	
	H-11	V	-	-	7-8	6-7	11	56	67.0	
	H-12	V	-	-	7-8	6-7	11	56	67.0	
	M-03	-	8	-	-	-	-	-	62.0	
	TP-01	-	6-7	-	-	-	-	-	61.0	
	Area 3	H-13	S	-	-	7-8	6-7	22	41	63.0
		H-14	V	-	-	7-8	6-7	7	56	63.0
H-15		V	-	-	7-8	6-7	7	56	63.0	
H-16		V	-	-	7-8	6-7	7	56	63.0	
HC-13		HC-13A	V	22	205	7-8	6-7	15.5	32	47.5
		HC-13B	-	40	205	6-7	-	-	-	61.0
		HC-13C	V	53	205	7-8	6-7	8.5	70	78.5
		HC-13D	S	64	205	7-8	6-7	24	46	70.0
		HC-13E	V	76	205	7-8	6-7	7	58	65.0
HC-14		HC-14A	V	22	190	7-8	6-7	15.5	32	47.5
		HC-14B	-	40	190	6-7	-	-	-	61.0
		HC-14C	V	53	190	7-8	6-7	8.5	70	78.5
		HC-14D	-	64	190	7-8	-	-	-	70.0
		HC-14E	V	76	190	7-8	6-7	7	58	65.0
HC-15		HC-15A	V	25	179	7-8	6-7	14	26	40.0
		HC-15B	-	46	179	6-7	-	-	-	55.0
	HC-15C	V	60	179	7-8	6-7	8	64.5	72.5	
	HC-15D	-	73	179	6-7	-	-	-	66.0	
TP-02	-	48	193	6-7	-	-	-	76.5		
Area 4	HC-03	HC-03A	V	22	248	7-8	6-7	36.5	24	60.5
		HC-03B	-	38	248	6-7	-	-	-	72.0
		HC-03C	V	50	248	7-8	6-7	21.5	69.5	91.0
		HC-03D	S	60	248	7-8	6-7	36.5	47.5	84.0
		HC-03E	V	71	248	7-8	6-7	17.5	59.5	77.0
	HC-04	HC-04A	V	22	247	7-8	6-7	36.5	24	60.5
		HC-04B	-	38	247	6-7	-	-	-	72.0
		HC-04C	V	50	247	7-8	6-7	21.5	69.5	91.0
		HC-04D	-	60	247	6-7	-	-	-	84.0
		HC-04E	V	71	247	7-8	6-7	17.5	59.5	77.0
		HC-04F	-	82	247	6-7	-	-	-	73.5
		HC-05A	V	22	234	7-8	6-7	36.5	24	60.5
	HC-05	HC-05B	-	38	234	6-7	-	-	-	72.0
		HC-05C	V	50	234	7-8	6-7	21.5	69.5	91.0
		HC-05D	S	60	234	6-7	6-7	36.5	47.5	84.0
		HC-05E	V	71	234	7-8	6-7	17.5	59.5	77.0
		HC-05F	-	82	234	6-7	-	-	-	73.5
		HC-06A	V	22	223	7-8	6-7	36.5	24	60.5
	HC-06	HC-06B	-	38	246	6-7	-	-	-	72.0
		HC-06C	V	50	246	7-8	6-7	21.5	69.5	91.0
		HC-06D	-	60	246	6-7	-	-	-	84.0
		HC-06E	V	71	246	7-8	6-7	17.5	59.5	77.0
	HC-06F	-	82	246	6-7	-	-	-	73.5	

Area	ID	Heater Cluster Type	Co-located Screen	Angle ¹ [°]	Azimuth ² [°]	Boring Dia. Upper [in]	Boring Dia. Lower [in]	Boring Length Upper ³ [ft]	Boring Length Lower [ft]	Boring Length Total [ft]
Area 4	HC-07	HC-07A	V	22	210	7-8	6-7	36.5	24	60.5
		HC-07B	-	38	210	6-7	-	-	-	72.0
		HC-07C	V	50	210	7-8	6-7	21.5	69.5	91.0
		HC-07D	-	60	210	6-7	-	-	-	84.0
		HC-07E	V	71	210	7-8	6-7	17.5	59.5	77.0
		HC-07F	-	82	210	6-7	-	-	-	73.5
	HC-08	HC-08A	V	22	199	7-8	6-7	36.5	35	71.5
		HC-08B	-	35	199	6-7	-	-	-	82.0
		HC-08C	V	45	199	7-8	6-7	22.5	75.5	98.0
		HC-08D	S	55	199	6-7	6-7	38	50.5	88.5
		HC-08E	V	66	199	7-8	6-7	18	61.5	79.5
		HC-08F	-	78	199	6-7	-	-	-	74.5
HC-09	HC-09A	V	22	192	7-8	6-7	36.5	61.5	98.0	
	HC-09B	-	31	192	6-7	-	-	-	107.0	
	HC-09C	V	39	192	7-8	6-7	24.5	90.5	115.0	
	HC-09D	-	48	192	6-7	-	-	-	97.5	
	HC-09E	V	58	192	7-8	6-7	19	66.5	85.5	
	HC-09F	-	68	192	6-7	-	-	-	78.5	
HC-10	HC-10A	V	22	182	7-8	6-7	36.5	77.5	114.0	
	HC-10B	-	30	182	6-7	-	-	-	124.0	
	HC-10C	V	37	182	7-8	6-7	25.5	94.5	120.0	
	HC-10D	S	44	182	6-7	6-7	44.5	59.5	104.0	
	HC-10E	V	52	182	7-8	6-7	21	71	92.0	
	HC-10F	-	61	182	6-7	-	-	-	83.0	
HC-11	HC-10G	V	71	182	7-8	6-7	17.5	59.5	77.0	
	HC-10H	-	81	182	6-7	-	-	-	74.0	
	HC-11A	V	22	165	7-8	6-7	15	45.5	60.5	
	HC-11B	-	38	165	6-7	-	-	-	72.0	
	HC-11C	V	50	165	7-8	6-7	21.5	69.5	91.0	
	HC-11D	S	60	165	6-7	6-7	36.5	47.5	84.0	
Area 4	HC-11E	HC-11E	V	71	165	7-8	6-7	17.5	59.5	77.0
		HC-11F	-	82	165	6-7	-	-	-	73.5
		HC-12	V	80	144	7-8	6-7	14	60	74.0
	H-17	V	-	-	7-8	6-7	14	59	73.0	
	H-18	V	-	-	7-8	6-7	14	59	73.0	
	H-19	V	-	-	7-8	6-7	14	59	73.0	
	H-20	V	-	-	7-8	6-7	14	59	73.0	
	H-21	S	-	-	7-8	6-7	32	41	73.0	
	H-22	V	-	-	7-8	6-7	14	59	73.0	
	H-23	V	-	-	7-8	6-7	14	59	73.0	
	H-24	V	-	-	7-8	6-7	14	59	73.0	
	H-25	V	-	-	7-8	6-7	14	59	73.0	
H-26	S	-	-	7-8	6-7	32	41	73.0		
H-27	V	-	-	7-8	6-7	14	59	73.0		
H-28	V	-	-	7-8	6-7	14	59	73.0		
H-29	V	-	-	7-8	6-7	14	59	73.0		
H-30	V	-	-	7-8	6-7	14	59	73.0		
H-31	V	-	-	7-8	6-7	14	59	73.0		
H-32	V	-	-	7-8	6-7	14	59	73.0		
H-33	V	-	-	7-8	6-7	14	59	73.0		
V-01	Completed in shallow trench									
HV-01	Completed in shallow trench									
HV-02	-	-	22	173	7-8	-	-	-	42.5	
DV-01	Completed using Horizontal Direction Drilling Rig									
DV-02	Completed using Horizontal Direction Drilling Rig									
M-04	-	-	56	242	8	-	-	-	82.0	
M-05	-	-	56	217	8	-	-	-	82.0	
M-06	-	-	46	192	8	-	-	-	94.0	
M-07	-	-	56	162	8	-	-	-	82.0	
M-08	-	-	-	-	8	-	-	-	68.0	
TP-04	-	-	35	-	6-7	-	-	-	117.0	
TP-05	-	-	55	246	6-7	-	-	-	82.0	
TP-06	-	-	-	-	6-7	-	-	-	67.0	
TP-07	-	-	-	-	6-7	-	-	-	67.0	

Notes:
 1: angle from horizontal
 2: angle from true north, measured clockwise
 3: Length of "Borehole Upper" defined as 2 ft below base of vapor extraction or steam injection screen
 S: steam injection
 V: extraction

DRAFT

REV	DATE	BY	CHK	DL	SG	DESCRIPTION
A	1/29/2024					HEATER CLUSTER WELLFIELD DESIGN

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 a Cascade Company
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 GARDNER, MA 01440
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IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS
WELLFIELD SUMMARY TABLE

SCALE: AS SHOWN	REV: A
SHEET SIZE: D	REFERENCE NO: R231.00
SHEET: 3 OF 3	DWG NO: C102

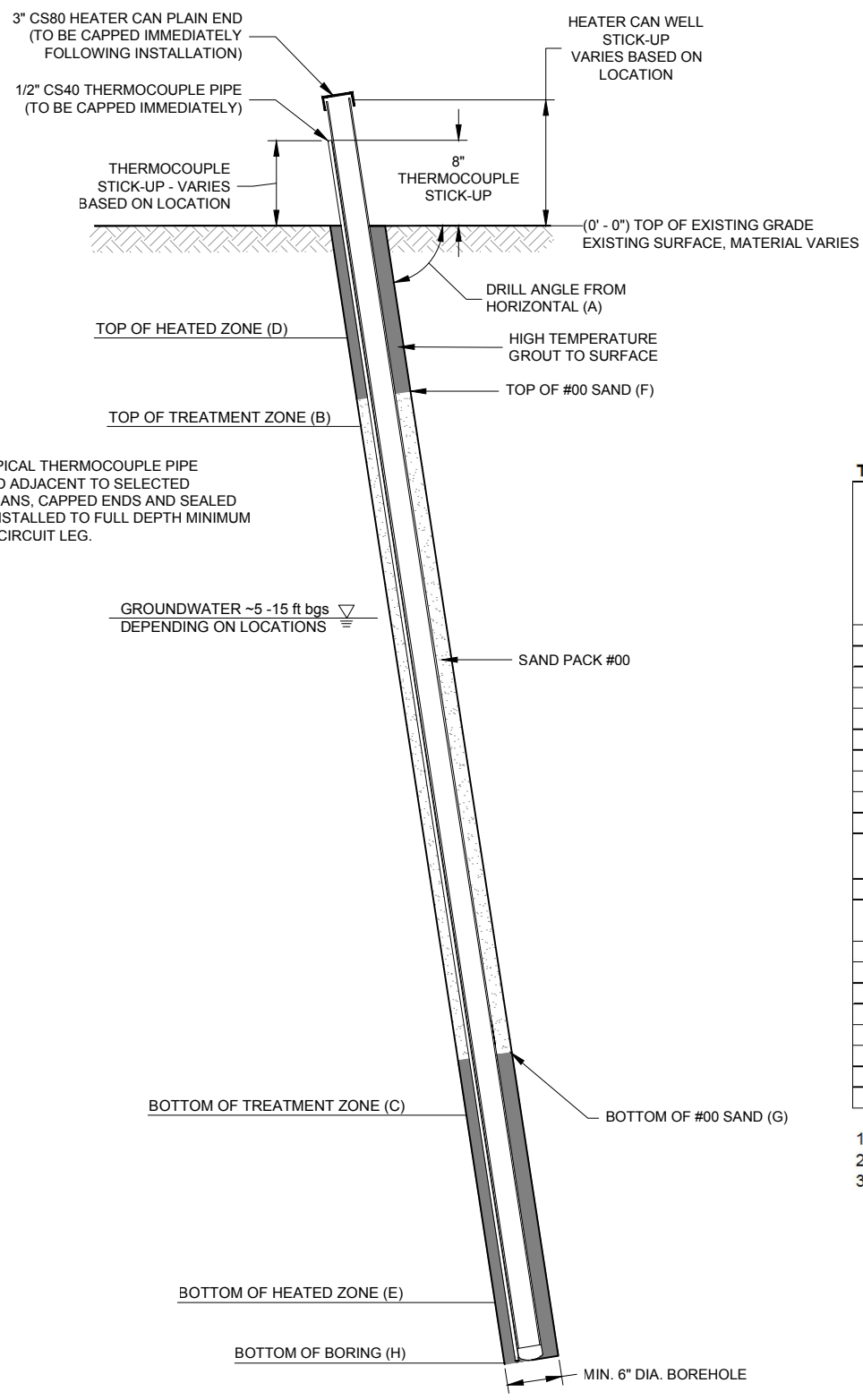
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FILE: \PROJECTS\JACOBS - VARIOUS (FORMER CEMEX)\MPTM (JACOBS) - FORMER VARIAN FACILITY SITE - BEVERLY, MA\01-DESIGN\01-DRAWINGS\001-IN-PROGRESS DWG\C103 TYPICAL WELL.DWG
CTB FILE: TT-STANDARD.CTB
PLOT DATE: 05/20/24

DRAFT

NOTES:

- 1. EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
- 2. A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 WILL NOT HAVE A VAPOR COVER INSTALLED.
- 3. THE #00 SAND BACKFILL WILL CONSIST OF 90% #00 SAND AND 10% CRUSHED LIMESTONE TO NEUTRALIZE IN SITU GENERATED ACIDS.



NOTE: TYPICAL THERMOCOUPLE PIPE INSTALLED ADJACENT TO SELECTED HEATER CANS, CAPPED ENDS AND SEALED JOINTS. INSTALLED TO FULL DEPTH MINIMUM ONE PER CIRCUIT LEG.

ANGLED HEATER CAN TYPICAL DETAIL (H)
QTY (SEE TABLE 1) @ 3" CS80 PIPE

NOT TO SCALE

ANGLED HEATER BORING SCHEDULE

Table 1 - Heater Boring Detail

Boring Type	Quantity	Well ID(s)	Drill Angle from Horizontal (A)	Top of Treatment Zone (B) ft bgs	Bottom of Treatment Zone (C) ft bgs	Top of Heated Zone (D) ft bgs	Bottom of Heated Zone** (E) ft bgs	Top of #00 Sand (F)		Bottom of #00 Sand (G)		Bottom of Boring (H)	
								ft bgs	ft*	ft bgs	ft*	ft bgs	ft*
Area 1: Type 4 - B	1	HC-01B	38°	14.0	65.0	9.0	43.0	9.0	14.5	39.0	63.5	44.5	72.0
Area 1: Type 4 - D	1	HC-01D	60°	14.0	65.0	9.0	71.0	9.0	10.5	66.0	76.0	72.5	84.0
Area 1: Type 4 - F	1	HC-01F	82°	14.0	65.0	9.0	71.0	9.0	9.0	66.0	66.5	73.0	73.5
Area 1: Type 5 - B	1	HC-02B	35°	14.0	65.0	9.0	46.0	9.0	15.5	42.5	74.0	47.0	82.0
Area 1: Type 5 - D	1	HC-02D	55°	14.0	65.0	9.0	71.0	9.0	11.0	66.0	80.5	72.5	88.5
Area 1: Type 5 - F	1	HC-02F	78°	14.0	65.0	9.0	71.0	9.0	9.0	66.0	67.5	73.0	74.5
Area 3: Type 2 - B	1	HC-15B	46°	5.0	56.0	0.0	38.0	1.0	1.5	33.0	46.0	39.5	55.0
Area 3: Type 2 - D	1	HC-15D	73°	5.0	56.0	0.0	61.0	1.0	1.0	44.5	46.5	63.0	66.0
Area 3: Type 3 - B	2	HC-13B, HC-14B	40°	5.0	56.0	0.0	38.0	1.0	1.5	34.0	53.0	39.0	61.0
Area 3: Type 3 - D	1	HC-14D	64°	5.0	56.0	0.0	61.0	1.0	1.0	50.5	56.0	63.0	70.0
Area 4: Type 4 - B	6	HC-03B, HC-04B, HC-05B, HC-06B, HC-07B, HC-11B	38°	15.0	66.0	10.0	43.0	10.0	16.0	39.0	63.5	44.5	72.0
Area 4: Type 4 - D	3	HC-04D, HC-06D, HC-07D	60°	15.0	66.0	10.0	71.0	10.0	11.5	66.0	76.0	72.5	84.0
Area 4: Type 4 - F	5	HC-04F, HC-05F, HC-06F, HC-07F, HC-11F	82°	15.0	66.0	10.0	71.0	10.0	10.0	66.0	66.5	73.0	73.5
Area 4: Type 5 - B	1	HC-08B	35°	15.0	66.0	10.0	46.0	10.0	17.5	42.5	74.0	47.0	82.0
Area 4: Type 5 - F	1	HC-08F	78°	15.0	66.0	10.0	71.0	10.0	10.0	66.0	67.5	73.0	74.5
Area 4: Type 6 - B	1	HC-09B	31°	15.0	66.0	10.0	54.0	10.0	19.5	51.0	99.0	55.0	107.0
Area 4: Type 6 - D	1	HC-09D	48°	15.0	66.0	10.0	71.0	10.0	13.5	66.0	89.0	72.5	97.5
Area 4: Type 6 - F	1	HC-09F	68°	15.0	66.0	10.0	71.0	10.0	11.0	66.0	71.0	73.0	78.5
Area 4: Type 7 - B	1	HC-10B	30°	15.0	66.0	10.0	61.0	10.0	20.0	58.0	116.0	62.0	124.0
Area 4: Type 7 - F	1	HC-10F	61°	15.0	66.0	10.0	71.0	10.0	11.5	66.0	75.5	72.5	83.0
Area 4: Type 7 - H	1	HC-10H	81°	15.0	66.0	10.0	71.0	10.0	10.0	66.0	67.0	73.0	74.0
Total	33												

1) ft bgs - feet below existing ground surface (prior to adding vapor cap)
 2) ft* - borehole travel length to reach target depth at drill angle (A)
 3)**Bottom of heated zone for heater clusters varies by angle

REV	DATE	BY	CHK	DESCRIPTION	
B	1/6/2024	RH	EH	SG	WELLFIELD DESIGN AND INSTALLATION MEMO
A	11/8/2023	RH	SL	SG	FINAL EXTERIOR WELLFIELD DESIGN

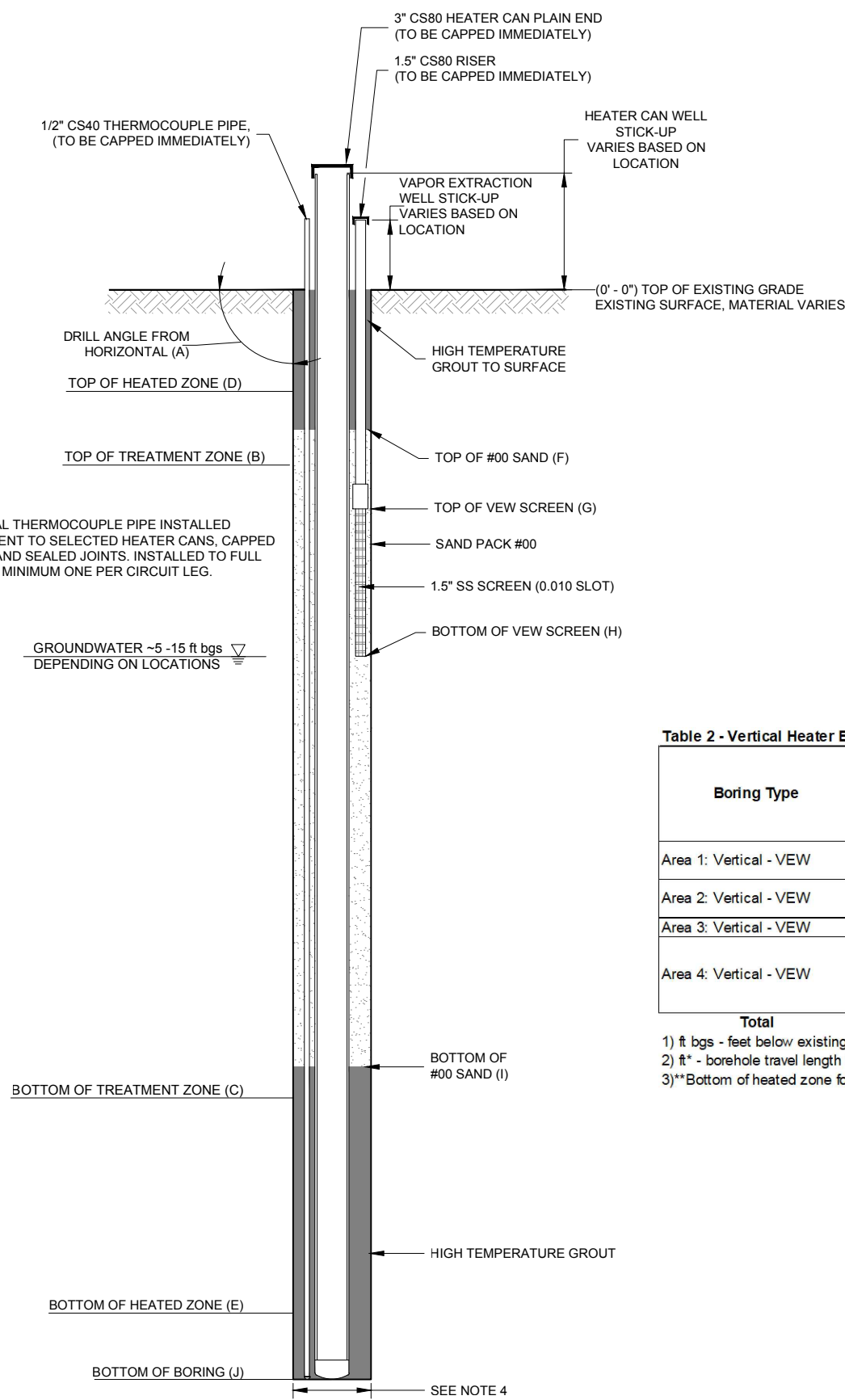
TERRATHERM
a Cascade Company
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GARDNER, MA 01440
(978) 730-1200
WWW.TERRATHERM.COM

IN SITU THERMAL REMEDIATION DESIGN
BEVERLY, MASSACHUSETTS

TYPICAL WELL CONSTRUCTION DETAILS

SCALE: AS SHOWN
SHEET SIZE: D B
REFERENCE NO: R231.00
SHEET: 1 OF 8
DWG NO: C103

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 FILE: \PROJECTS\LABORS - VARIOUS (FORMER CEM) \MPTM (LABORS) - FORMER VARIAN FACILITY SITE - BEVERLY MA\01-DESIGN\01-DRAWINGS\001-IN-PROGRESS DWGS\C103 TYPICAL WELL DETL.S.DWG
 CTB FILE: T1-STANDARD.CTB
 PLOT DATE: 1/5/2024



- NOTES:**
- EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
 - A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 & 5 WILL NOT HAVE A VAPOR COVER INSTALLED.
 - THE #00 SAND BACKFILL WILL CONSIST OF 90% #00 SAND AND 10% CRUSHED LIMESTONE TO NEUTRALIZE IN SITU GENERATED ACIDS.
 - BORING WILL BE TELESCOPE DRILLED WITH A 7-8" BOREHOLE FROM THE SURFACE TO THE BOTTOM OF THE SCREEN AND A 6-7" BOREHOLE FROM THE BOTTOM OF THE SCREEN TO THE BOTTOM OF THE BOREHOLE.

VERTICAL HEATER BORING WITH CO-LOCATED VAPOR EXTRACTION WELL SCHEDULE

Table 2 - Vertical Heater Boring with Co-located Vapor Extraction Well

Boring Type	Quantity	Well IDs	Drill Angle from Horizontal (A)	Top of Treatment Zone (B)		Bottom of Treatment Zone (C)		Top of Heated Zone (D)		Bottom of Heated Zone** (E)		Top of #00 Sand (F)		Top of VEW Screen (G)		Bottom of VEW Screen (H)		Bottom of #00 Sand (I)		Bottom of Boring (J)	
				ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*
Area 1: Vertical - VEW	5	H-01, H-02, H-05, H-04, H-06	90°	14.0	65.0	9.0	70.0	6.0	6.0	9.0	9.0	14.0	14.0	62.0	62.0	72.0	72.0				
Area 2: Vertical - VEW	5	H-07, H-09, H-10, H-11, H-12	90°	9.0	60.0	4.0	65.0	1.0	1.0	4.0	4.0	9.0	9.0	57.0	57.0	67.0	67.0				
Area 3: Vertical - VEW	3	H-14, H-15, H-16	90°	5.0	56.0	0.0	61.0	0.5	0.5	1.0	1.0	5.0	5.0	53.0	53.0	63.0	63.0				
Area 4: Vertical - VEW	15	H-17, H-18, H-19, H-20, H-22, H-23, H-24, H-25, H-27, H-28, H-29, H-30, H-31, H-32, H-33	90°	15.0	66.0	10.0	71.0	8.0	8.0	10.0	10.0	15.0	15.0	63.0	63.0	73.0	73.0				
Total	28																				

1) ft bgs - feet below existing ground surface (prior to adding vapor cap)
 2) ft* - borehole travel length to reach target depth at drill angle (A)
 3)**Bottom of heated zone for heater clusters varies by angle

VERTICAL HEATER BORING WITH CO-LOCATED VAPOR EXTRACTION TYPICAL DETAIL
 QTY (SEE TABLE 2) @ 3" CS80 PIPE
 (H-G) L X 1.5" SS WELL SCREEN, 0.010 SLOT, CS80 RISER

NOT TO SCALE

DRAFT

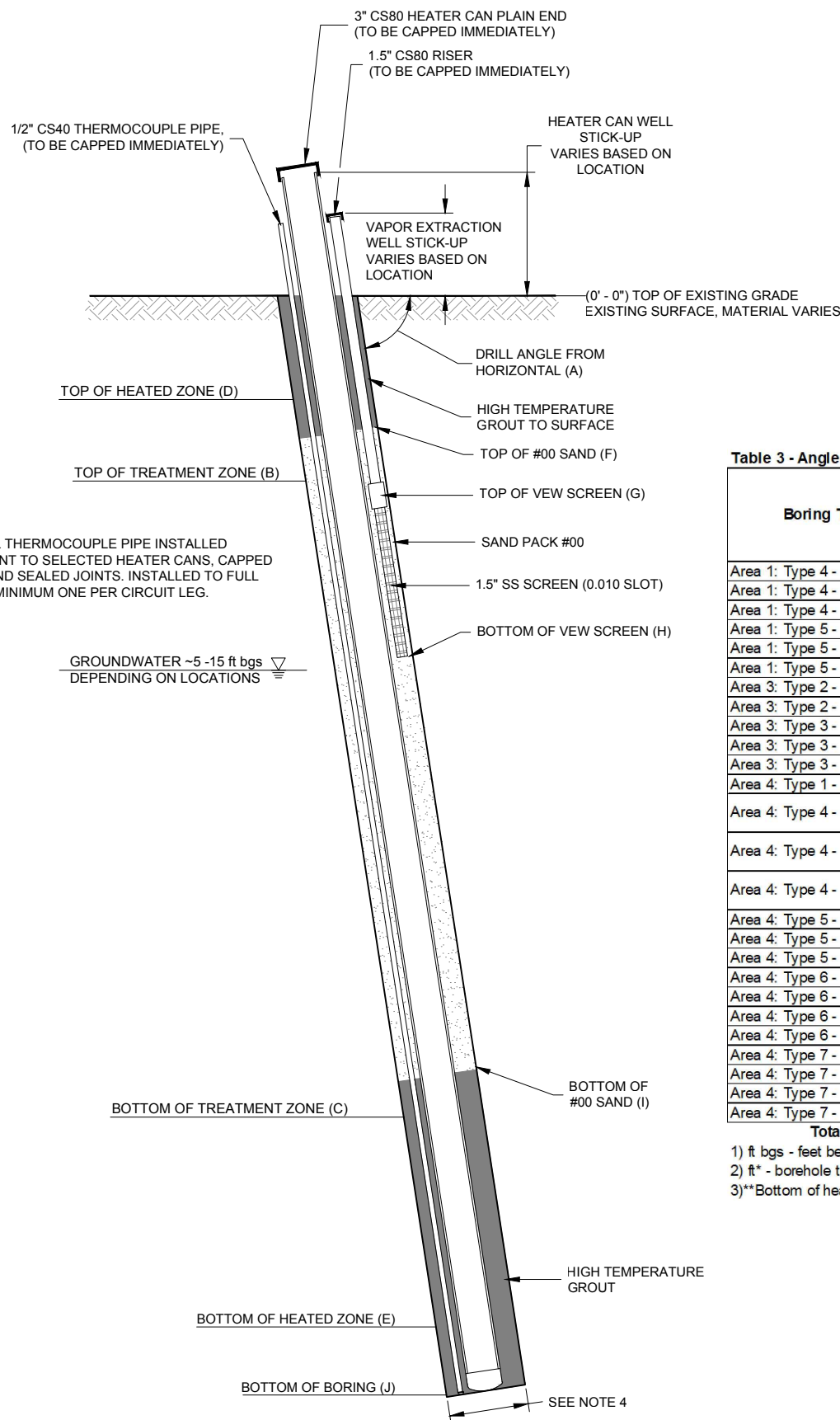
REV	DATE	BY	CHKD	DESCRIPTION	
A	1/18/2023	RH	SL	SG	FINAL EXTERIOR WELLFIELD DESIGN
B	1/5/2024	RH	EH	SG	WELLFIELD DESIGN AND INSTALLATION MEMO

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 a Cascade Company
 151 SUFFERD LANE
 GARDNER, MA 01440
 (978) 730-1200
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IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS
TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO:	R231.00
SHEET:	2 OF 8
DWG NO.:	C103

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 FILE: \PROJECTS\LAJACORS - VARIOUS (FORMER CEM) (MPTM) (JACOBS) - FORMER VARIAN FACILITY SITE - BEVERLY MA 01 DESIGN\01-DRAWINGS\01-IN-PROGRESS DWGS\C103 TYPICAL WELL DETL.DWG
 CTB FILE: T1-STD-DRG-CTB
 PLOT DATE: 1/5/2024



ANGLED HEATER CAN WITH CO-LOCATED VAPOR EXTRACTION TYPICAL DETAIL
 QTY (SEE TABLE 3) @ 3" CS80 PIPE
 (H-G) L X 1.5" SS WELL SCREEN, 0.010 SLOT, CS80 RISER

NOT TO SCALE

ANGLED HEATER BORING WITH CO-LOCATED VAPOR EXTRACTION WELL SCHEDULE

Table 3 - Angled Heater Boring with Co-located Vapor Extraction Well

Boring Type	Quantity	Well IDs	Drill Angle from Horizontal (A)	Top of Treatment Zone (B) ft bgs	Bottom of Treatment Zone (C) ft bgs	Top of Heated Zone (D) ft bgs	Bottom of Heated Zone** (E) ft bgs	Top of #00 Sand (F) ft bgs	ft*	Top of VEW Screen (G) ft bgs	ft*	Bottom of VEW Screen (H) ft bgs	ft*	Bottom of #00 Sand (I) ft bgs	ft*	Bottom of Boring (J) ft bgs	ft*
Area 1: Type 4 - A - VEW	1	HC-01A	22°	14.0	65.0	9.0	22.0	11.0	29.5	12.0	32.5	14.0	37.5	19.0	50.5	22.5	60.5
Area 1: Type 4 - C - VEW	1	HC-01C	50°	14.0	65.0	9.0	68.0	8.0	10.5	10.5	13.5	14.0	18.5	62.0	81.0	69.5	91.0
Area 1: Type 4 - E - VEW	1	HC-01E	71°	14.0	65.0	9.0	71.0	6.5	7.0	9.5	10.0	14.0	15.0	63.5	67.0	73.0	77.0
Area 1: Type 5 - A - VEW	1	HC-02A	22°	14.0	65.0	9.0	26.0	11.0	29.5	12.0	32.5	14.0	37.5	23.0	61.5	27.0	71.5
Area 1: Type 5 - C - VEW	1	HC-02C	45°	14.0	65.0	9.0	68.0	8.5	12.0	10.5	15.0	14.0	20.0	62.0	87.5	69.5	98.0
Area 1: Type 5 - E - VEW	1	HC-02E	66°	14.0	65.0	9.0	71.0	7.0	7.5	9.5	10.5	14.0	15.5	63.5	69.5	72.5	79.5
Area 3: Type 2 - A - VEW	1	HC-15A	25°	5.0	56.0	0.0	16.0	1.5	4.0	3.0	7.0	5.0	12.0	12.5	29.5	17.0	40.0
Area 3: Type 2 - C - VEW	1	HC-15C	60°	5.0	56.0	0.0	61.0	0.5	0.5	1.0	1.0	5.0	6.0	54.0	62.5	63.0	72.5
Area 3: Type 3 - A - VEW	2	HC-13A, HC-14A	22°	5.0	56.0	0.0	17.0	2.0	5.5	3.0	8.5	5.0	13.5	14.0	37.5	18.0	47.5
Area 3: Type 3 - C - VEW	2	HC-13C, HC-14C	53°	5.0	56.0	0.0	61.0	0.5	0.5	1.0	1.5	5.0	6.5	54.5	68.0	62.5	78.5
Area 3: Type 3 - E - VEW	2	HC-13E, HC-14E	76°	5.0	56.0	0.0	61.0	0.5	0.5	1.0	1.0	5.0	5.0	53.5	55.0	63.0	65.0
Area 4: Type 1 - A - VEW	1	HA-12	80°	15.0	66.0	10.0	71.0	8.0	8.0	10.0	10.0	15.0	15.0	63.0	64.0	73.0	74.0
Area 4: Type 4 - A - VEW	6	HC-03A, HC-04A, HC-05A, HC-06A, HC-07A, HC-11A	22°	15.0	66.0	10.0	22.0	8.0	21.5	11.0	29.5	13.0	34.5	19.0	50.5	22.5	60.5
Area 4: Type 4 - C - VEW	6	HC-03C, HC-04C, HC-05C, HC-06C, HC-07C, HC-11C	50°	15.0	66.0	10.0	68.0	8.0	10.5	11.0	14.5	15.0	19.5	62.0	81.0	69.5	91.0
Area 4: Type 4 - E - VEW	6	HC-03E, HC-04E, HC-05E, HC-06E, HC-07E, HC-11E	71°	15.0	66.0	10.0	71.0	8.0	8.5	10.0	10.5	14.5	15.5	63.5	67.0	73.0	77.0
Area 4: Type 5 - A - VEW	1	HC-08A	22°	15.0	66.0	10.0	26.0	8.0	21.5	11.0	29.5	13.0	34.5	23.0	61.5	27.0	71.5
Area 4: Type 5 - C - VEW	1	HC-08C	45°	15.0	66.0	10.0	68.0	8.0	11.5	11.0	15.5	14.5	20.5	62.0	87.5	69.5	98.0
Area 4: Type 5 - E - VEW	1	HC-08E	66°	15.0	66.0	10.0	71.0	8.0	9.0	10.0	11.0	14.5	16.0	63.5	69.5	72.5	79.5
Area 4: Type 6 - A - VEW	1	HC-09A	22°	15.0	66.0	10.0	36.0	8.0	21.5	11.0	29.5	13.0	34.5	33.0	88.0	36.5	98.0
Area 4: Type 6 - C - VEW	1	HC-09C	39°	15.0	66.0	10.0	71.0	8.0	12.5	11.0	17.5	14.0	22.5	66.0	105.0	72.5	115.0
Area 4: Type 6 - E - VEW	1	HC-09E	58°	15.0	66.0	10.0	71.0	8.0	9.5	10.0	12.0	14.5	17.0	64.0	75.5	72.5	85.5
Area 4: Type 6 - G - VEW	1	HC-09G	79°	15.0	66.0	10.0	71.0	8.0	8.0	10.0	10.0	14.5	15.0	63.5	64.5	73.0	74.5
Area 4: Type 7 - A - VEW	1	HC-10A	22°	15.0	66.0	10.0	42.0	8.0	21.5	11.0	29.5	13.0	34.5	39.0	104.0	42.5	114.0
Area 4: Type 7 - C - VEW	1	HC-10C	37°	15.0	66.0	10.0	71.0	8.0	13.5	11.0	18.5	14.0	23.5	66.0	109.5	72.0	120.0
Area 4: Type 7 - E - VEW	1	HC-10E	52°	15.0	66.0	10.0	71.0	8.0	10.0	11.0	14.0	15.0	19.0	64.5	82.0	72.5	92.0
Area 4: Type 7 - G - VEW	1	HC-10G	71°	15.0	66.0	10.0	71.0	8.0	8.5	10.0	10.5	14.5	15.5	63.5	67.0	73.0	77.0
Total	44																

1) ft bgs - feet below existing ground surface (prior to adding vapor cap)
 2) ft* - borehole travel length to reach target depth at drill angle (A)
 3)**Bottom of heated zone for heater clusters varies by angle

NOTES:

- EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
- A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 & 5 WILL NOT HAVE A VAPOR COVER INSTALLED.
- THE #00 SAND BACKFILL WILL CONSIST OF 90% #00 SAND AND 10% CRUSHED LIMESTONE TO NEUTRALIZE IN SITU GENERATED ACIDS.
- BORING WILL BE TELESCOPE DRILLED WITH A 7-8" BOREHOLE FROM THE SURFACE TO THE BOTTOM OF THE SCREEN AND A 6-7" BOREHOLE FROM THE BOTTOM OF THE SCREEN TO THE BOTTOM OF THE BOREHOLE.

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REVISION	DATE	BY	CHKD	APP'D	DESCRIPTION

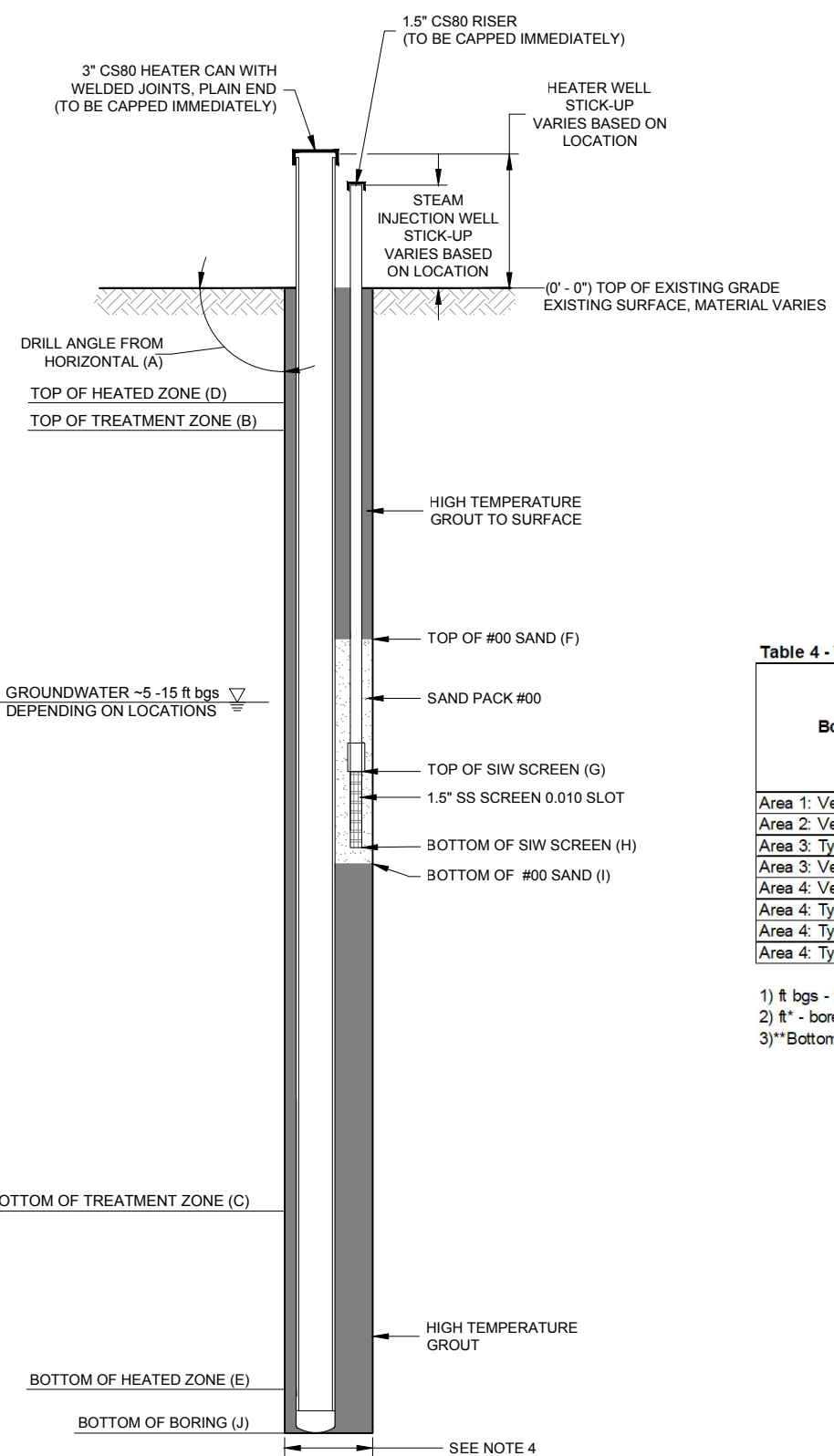
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IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS
 TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO.:	R231.00
SHEET:	3 OF 8
DWG NO.:	C103

FILE: \PROJECTS\JACOBS - VARIOUS (FORMER CEM) \MPTM (JACOBS) - FORMER VARIAN FACILITY SITE - BEVERLY MA\01-DESIGN\01-DRAWINGS\001-IN-PROGRESS DWGS\C103 TYPICAL WELL DETL.DWG
 CTB FILE: TT-STANDARD.CTB
 PLOT DATE: 1/5/2024
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VERTICAL AND ANGLED HEATER WELL WITH CO-LOCATED STEAM INJECTION WELL TYPICAL DETAIL (H)
 QTY (SEE TABLE 4) @ 3" CS80 RISER PIPE, "G-H" L X 1.5" SS WELL SCREEN WITH WELDED END CAP, 0.010 SLOT
 1" CS80 RISER PIPE

NOT TO SCALE

ANGLED BORING SHOWN VERTICAL FOR CLARITY

NOTES:

- EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
- A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 & 5 WILL NOT HAVE A VAPOR COVER INSTALLED.
- THE #00 SAND BACKFILL WILL CONSIST OF 90% #00 SAND AND 10% CRUSHED LIMESTONE TO NEUTRALIZE IN SITU GENERATED ACIDS.
- BORING WILL BE TELESCOPE DRILLED WITH A 7-8" BOREHOLE FROM THE SURFACE TO THE BOTTOM OF THE SCREEN AND A 6-7" BOREHOLE FROM THE BOTTOM OF THE SCREEN TO THE BOTTOM OF THE BOREHOLE.

VERTICAL AND ANGLED HEATER BORING WITH CO-LOCATED STEAM INJECTION WELL SCHEDULE

Table 4 - Vertical and Angled Heater Boring with Co-located Steam Injection Well

Boring Type	Quantity	Well IDs	Drill Angle from Horizontal (A)	Top of Treatment Zone (B)		Bottom of Treatment Zone (C)		Top of Heated Zone (D)		Bottom of Heated Zone** (E)		Top of #00 Sand (F)		Top of SIW Screen		Bottom of #00 Sand (I)		Bottom of Boring (J)	
				ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*
Area 1: Vertical - SIW	1	H-03	90°	14.0	65.0	9.0	70.0	19.0	19.0	27.0	27.0	29.0	29.0	31.0	31.0	72.0	72.0		
Area 2: Vertical - SIW	1	H-08	90°	9.0	60.0	4.0	65.0	14.0	14.0	22.0	22.0	24.0	24.0	26.0	26.0	67.0	67.0		
Area 3: Type 3 - D - SIW	1	HC-13D	64°	5.0	56.0	0.0	61.0	9.0	10.0	18.0	20.0	20.0	22.0	21.5	24.0	63.0	70.0		
Area 3: Vertical - SIW	1	H-13	90°	5.0	56.0	0.0	61.0	10.0	10.0	18.0	18.0	20.0	20.0	22.0	22.0	63.0	63.0		
Area 4: Vertical - SIW	2	H-21, H-26	90°	15.0	66.0	10.0	71.0	20.0	20.0	28.0	28.0	30.0	30.0	32.0	32.0	73.0	73.0		
Area 4: Type 4 - D - SIW	3	HC-03D, HC-05D, HC-11D	60°	15.0	66.0	10.0	71.0	20.0	23.0	28.0	32.5	30.0	34.5	31.5	36.5	72.5	84.0		
Area 4: Type 5 - D - SIW	1	HC-08D	55°	15.0	66.0	10.0	71.0	20.0	24.5	28.0	34.0	29.5	36.0	31.0	38.0	72.5	88.5		
Area 4: Type 7 - D - SIW	1	HC-10D	44°	15.0	66.0	10.0	71.0	20.0	29.0	28.0	40.5	29.5	42.5	31.0	44.5	72.0	104.0		
Total	11																		

1) ft bgs - feet below existing ground surface (prior to adding vapor cap)
 2) ft* - borehole travel length to reach target depth at drill angle (A)
 3)**Bottom of heated zone for heater clusters varies by angle

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REV	DATE	BY	CHKD	DESCRIPTION	
B	1/5/2024	RH	EH	SG	WELLFIELD DESIGN AND INSTALLATION MEMO
A	11/8/2023	RH	SL	SG	FINAL EXTERIOR WELLFIELD DESIGN

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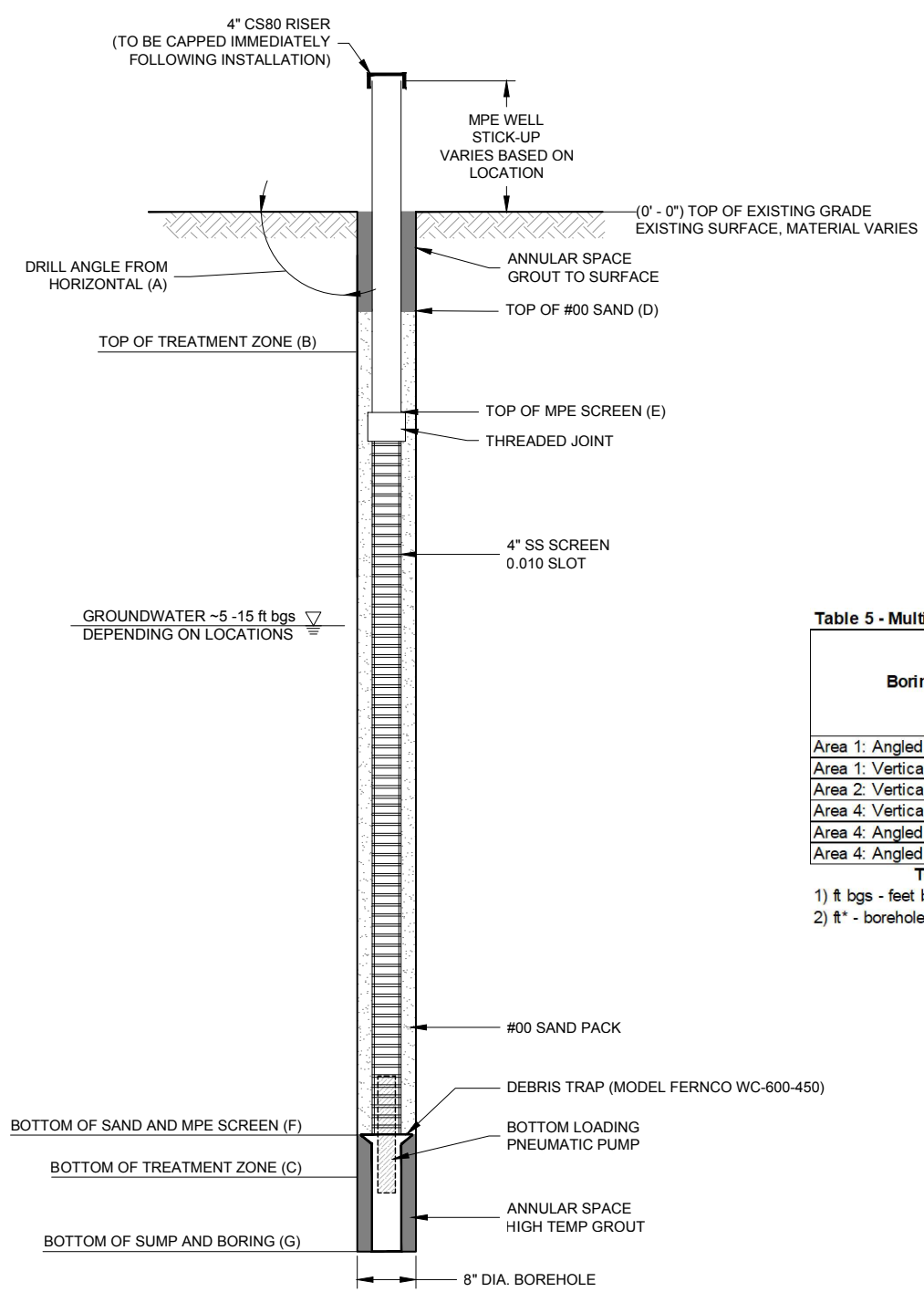
IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS

TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO.:	R231.00
SHEET:	4 OF 8
DWG NO.:	C103

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 CTB FILE: TT-STANDARD.CTB
 PLOT DATE: 1/5/2024



MULTIPHASE EXTRACTION WELL (M)
 QTY (SEE TABLE 5) "F-E" L X 4" SS WELL SCREEN, 0.010 SLOT
 4" CS80 RISER PIPE

NOT TO SCALE

ANGLED BORING SHOWN VERTICAL FOR CLARITY

NOTES:

- EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
- A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 & 5 WILL NOT HAVE A VAPOR COVER INSTALLED.

MULTI-PHASE EXTRACTION WELL SCHEDULE

Table 5 - Multiphase Extraction Well Detail

Boring Type	Quantity	Well ID(s)	Drill Angle from Horizontal (A)	Top of Treatment Zone (B)	Bottom of Treatment Zone (C)	Top of #00 Sand (D)		Top of MPE Screen (E)		Bottom of Sand and MPE Screen (F)		Bottom of Sump and Boring (G)	
				ft bgs	ft bgs	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*
Area 1: Angled MPE	1	M-01	56°	14.0	65.0	12.5	15.0	14.0	17.0	65.0	78.0	66.5	80.0
Area 1: Vertical MPE	1	M-02	90°	14.0	65.0	12.0	12.0	14.0	14.0	65.0	65.0	67.0	67.0
Area 2: Vertical MPE	1	M-03	90°	9.0	60.0	7.0	7.0	9.0	9.0	60.0	60.0	62.0	62.0
Area 4: Vertical MPE	1	M-08	90°	15.0	66.0	13.0	13.0	15.0	15.0	66.0	66.0	68.0	68.0
Area 4: Angled MPE Type 1	3	M-04, M-05, M-07	56°	15.0	66.0	13.5	16.0	15.0	18.0	66.0	80.0	68.0	82.0
Area 4: Angled MPE Type 2	1	M-06	46°	15.0	66.0	13.5	19.0	15.0	21.0	66.0	92.0	67.5	94.0
Total	8												

- 1) ft bgs - feet below existing ground surface (prior to adding vapor cap)
- 2) ft* - borehole travel length to reach target depth at drill angle (A)

DRAFT

REV.	DATE	BY	CHKD	DESCRIPTION	
B	1/5/2024	RH	EH	SG	WELLFIELD DESIGN AND INSTALLATION MEMO
A	11/8/2023	RH	SL	SG	FINAL EXTERIOR WELLFIELD DESIGN

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IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS

TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO.:	R231.00
SHEET:	5 OF 8
DWG NO.:	C103

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 CTB FILE: TT-STANDARD.CTB
 PLOT DATE: 1/5/2024

DRAFT

NOTES:

- EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
- A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 & 5 WILL NOT HAVE A VAPOR COVER INSTALLED.

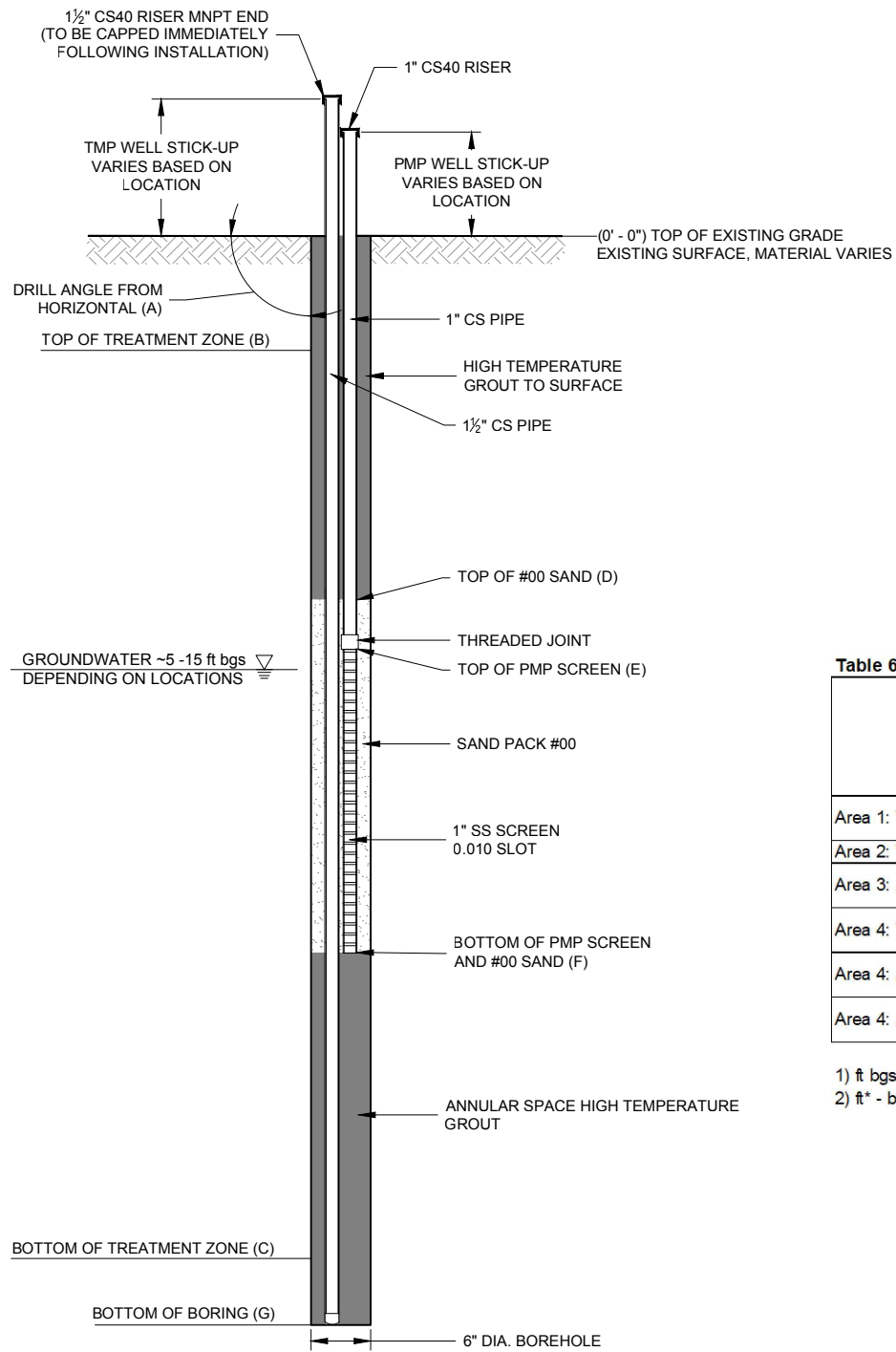
REV	DATE	BY	CHK	DESCRIPTION	
B	1/5/2024	RH	EH	SG	WELLFIELD DESIGN AND INSTALLATION MEMO
A	11/8/2023	RH	SL	SG	FINAL EXTERIOR WELLFIELD DESIGN

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IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS
TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO:	R231.00
SHEET:	6 OF 8
DWG NO.:	C103



TEMPERATURE AND PRESSURE MONITORING POINT (T)
 QTY (SEE TABLE 6) 1-1/2" CS40 PIPE FOR TEMPERATURE MONITORING AND
 "F-E" L X 1" SS WELL SCREEN, 0.010 SLOT WITH A CS40 RISER FOR PRESSURE
 MONITORING

TEMPERATURE MONITORING SENSOR DEPTHS (SEE TABLE 6)
 NOT TO SCALE

ANGLED BORING SHOWN VERTICAL FOR CLARITY

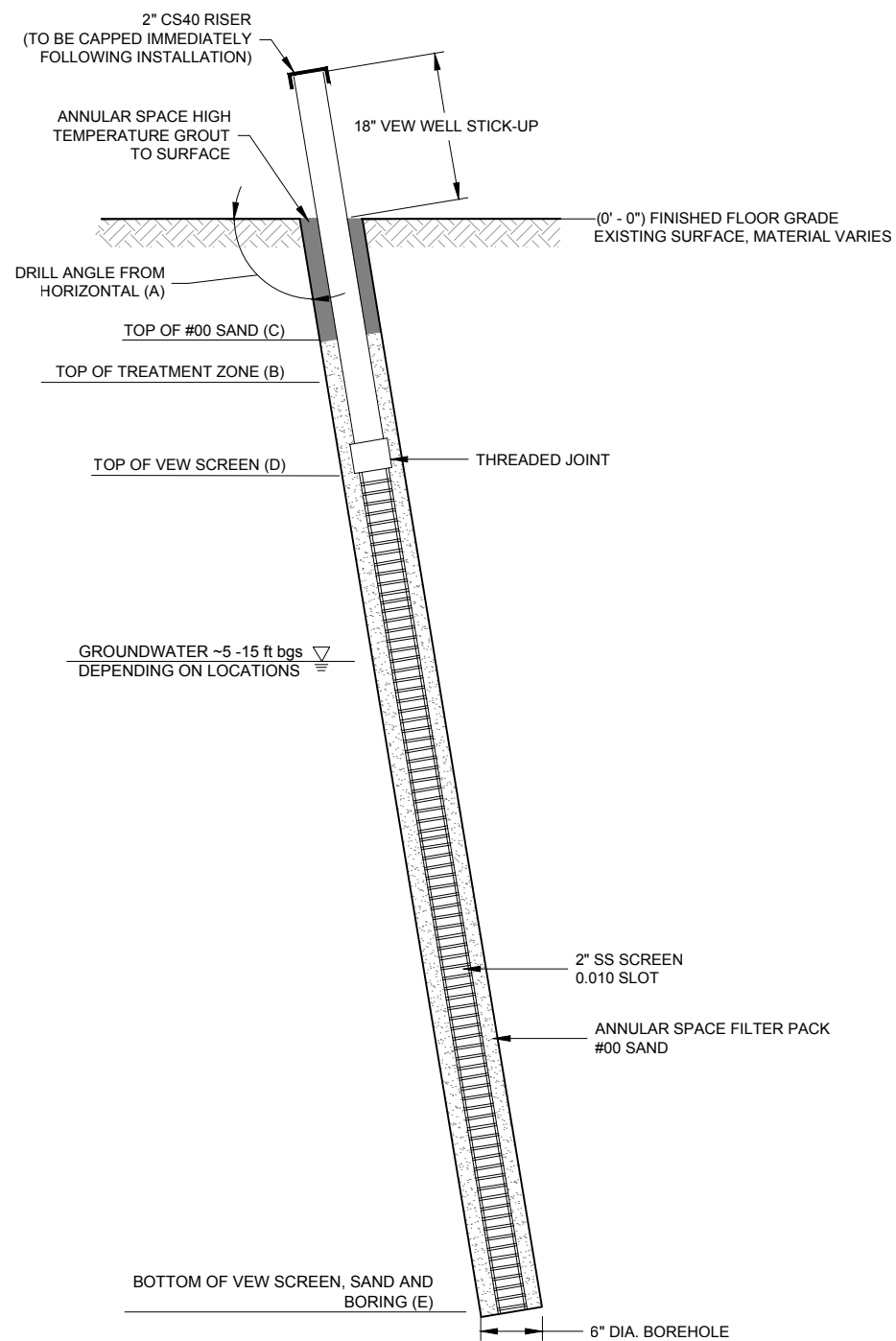
TEMPERATURE AND PRESSURE MONITORING POINT SCHEDULE

Table 6 - Co-Located Temperature and Pressure Monitoring Point Detail

Boring Type	Quantity	Well ID(s)	Drill Angle from Horizontal (A)	Top of Treatment Zone (B) ft bgs	Bottom of Treatment Zone (C) ft bgs	Top of #00 Sand (D)		Top of PMP Screen (E)		Bottom of PMP Screen and #00 Sand (F)		Bottom of Boring (G)		Temperature Sensor Locations ft*
						ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	
Area 1: Vertical TMP	1	TP-03	90	14.0	65.0	3.0	3.0	4.0	4.0	5.0	5.0	66.0	66.0	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65
Area 2: Vertical TMP	1	TP-01	90	9.0	60.0	3.0	3.0	4.0	4.0	5.0	5.0	61.0	61.0	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
Area 3: Angled TMP	1	TP-02	48	5.0	56.0	3.0	4.0	4.0	5.5	5.0	6.5	57.0	76.5	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75
Area 4: Vertical TMP	2	TP-06, TP-07	90	15.0	66.0	3.0	3.0	4.0	4.0	5.0	5.0	67.0	67.0	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65
Area 4: Angled TMP Type 1	1	TP-04	35	15.0	66.0	3.0	5.0	4.0	7.0	4.5	8.0	67.0	117.0	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100, 105, 110, 115
Area 4: Angled TMP Type 2	1	TP-05	55	15.0	66.0	3.0	3.5	4.0	5.0	5.0	6.0	67.0	82.0	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80
Total	7													

- 1) ft bgs - feet below existing ground surface (prior to adding vapor cap)
- 2) ft* - borehole travel length to reach target depth at drill angle (A)

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 CTB FILE: TT-STANDARD.CTB



ANGLED VAPOR EXTRACTION WELL (V)
 QTY (SEE TABLE 7) (SCREEN: F-E) L X 2" SS WELL SCREEN, 0.010 SLOT
 2" CS40 RISER PIPE

NOT TO SCALE

NOTES:

- EXISTING SURFACE VARIES FROM CONCRETE SLAB TO BARE SOIL DEPENDING ON BORING LOCATIONS.
- A VAPOR COVER WILL BE INSTALLED IN PORTIONS OF AREA 3, AFTER DRILLING OPERATIONS HAVE BEEN COMPLETED. AREAS 1, 2, 4 & 5 WILL NOT HAVE A VAPOR COVER INSTALLED.

VAPOR EXTRACTION WELL SCHEDULE

Table 7 - Vapor Extraction Well Detail

Boring Type	Quantity	Well ID(s)	Drill Angle from Horizontal (A)	Top of Treatment Zone (B)		Top of #00 Sand (C)		Top of VEW Screen (D)		Bottom of VEW Screen, Sand and Boring (E)	
				ft bgs	ft*	ft bgs	ft*	ft bgs	ft*	ft bgs	ft*
Angled VEW	1	V-3	22°	14.0		0.4	1.0	1.1	3.0	16.0	43.0
Total	1										

- ft bgs - feet below existing ground surface (prior to adding vapor cap)
- ft* - borehole travel length to reach target depth at drill angle (A)

DRAFT

REV	DATE	BY	CHK	ENG	EX	DESCRIPTION
B	1/6/2024	RH	EH	SG		WELLFIELD DESIGN AND INSTALLATION MEMO
A	11/8/2023	RH	SL	SG		FINAL EXTERIOR WELLFIELD DESIGN

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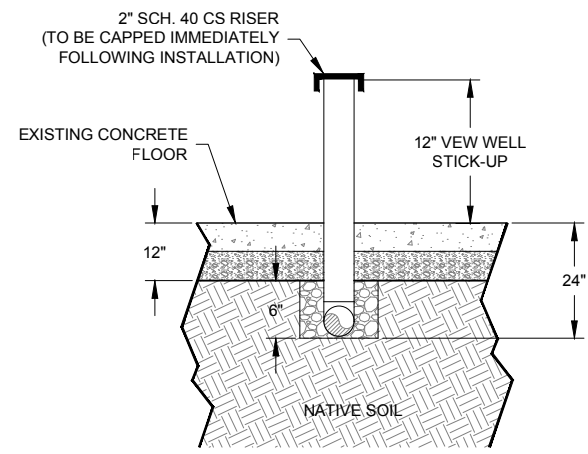
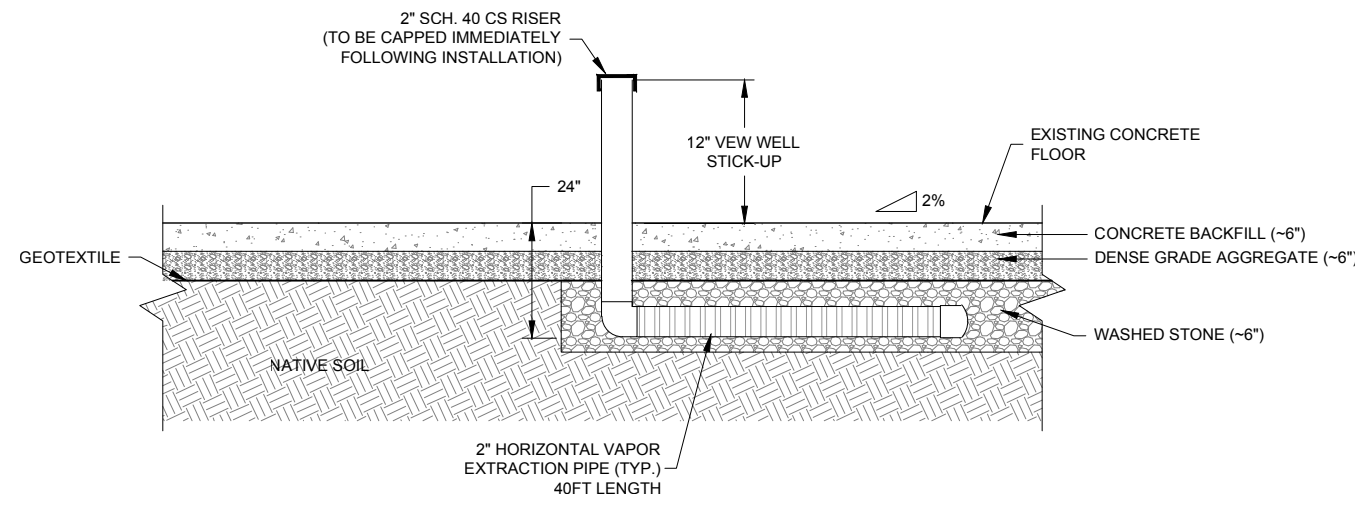


IN SITU THERMAL REMEDIATION DESIGN
 BEVERLY, MASSACHUSETTS
TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO:	R231.00
SHEET:	7 OF 8
DWG NO.:	C103

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FILE: \PROJECTS\LABORS - VARIOUS (FORMER CEM)\MPTM (ACOBIS) - FORMER VARIAN FACILITY SITE - BEVERLY MA\01-DESIGN\01-DRAWINGS\001-IN-PROGRESS DWGS\C103 TYPICAL WELL DETL.S.DWG
CTB FILE: TT-STANDARD.CTB



HORIZONTAL VAPOR EXTRACTION WELL DETAIL

2" SLOTTED WELL SCREEN, 0.010 SLOT

NOT TO SCALE

DRAFT

REV.	DATE	BY	CHKD	DESCRIPTION
A	11/8/2023	RH SL SG	EH SG	FINAL EXTERIOR WELLFIELD DESIGN
B	1/9/2024	RH EH SG	EH SG	WELLFIELD DESIGN AND INSTALLATION MEMO

TERRATHERM
a Cascade Company
151 SUFFERD LANE
GARDNER, MA 01440
(978) 730-1200
WWW.TERRATHERM.COM



IN SITU THERMAL REMEDIATION DESIGN
BEVERLY, MASSACHUSETTS

TYPICAL WELL CONSTRUCTION DETAILS

SCALE:	AS SHOWN
SHEET SIZE:	D B
REFERENCE NO.:	R231.00
SHEET:	8 OF 8
DWG NO.:	C103

Appendix F. Investigation Derived Waste





Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number M A R 0 0 0 0 6 7 3 4	2. Page 1 of 1	3. Emergency Response Phone (877) 818-0887	4. Manifest Tracking Number 002230437 VES		
5. Generator's Name and Mailing Address VARIAN MEDICAL SYSTEMS, INC 150 ROYALL STREET CANTON, MA 02021			Generator's Site Address (if different than mailing address) 150 SOHIER RD- TRTMENT FAC BEVERLY, MA 01915				
6. Transporter 1 Company Name VEOLIA ES TECHNICAL SOLUTIONS			U.S. EPA ID Number N J D 0 8 0 6 3 1 3 6 9				
7. Transporter 2 Company Name FREEHOLD CARTAGE INC			U.S. EPA ID Number N J D 0 5 4 1 2 6 1 6 4				
8. Designated Facility Name and Site Address VEOLIA ES TECHNICAL SOLUTIONS L.L.C. 1 EDEN LANE FLANDERS, NJ 07836			U.S. EPA ID Number N J D 9 8 0 5 3 6 5 9 3				
Facility's Phone: 973 347-7111							
GENERATOR	9a. HWM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	<input checked="" type="checkbox"/>	1. NA3082, HAZARDOUS WASTE, LIQUID, n.o.s., (TRICHLOROETHYLENE), 9, III	No.	Type			F002 D039
	<input checked="" type="checkbox"/>	2. NA3077, HAZARDOUS WASTE, SOLID, n.o.s., (TRICHLOROETHYLENE), 9, III	9	DM	3 2 0 0	P	F002
	<input checked="" type="checkbox"/>	3. NA3077, HAZARDOUS WASTE, SOLID, n.o.s., (TRICHLOROETHYLENE), 9, III	1	DM	8 0 0	P	F002
	4.						
14. Special Handling Instructions and Additional Information ER Service Contracted by VESTS + Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf. + 1) ERG:171 W:374499 A:TWID00D74499 2) ERG:171 W:373391 A:TWID00373391 3) ERG:171 W:1183898 A:VNIPTAVES024							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name Debra Egan		Signature 		Month	Day	Year	
				11	17	23	
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
	Transporter signature (for exports only):						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name Jeremy A. Nest	Signature 		Month	Day	Year	
				11	17	23	
	Transporter 2 Printed/Typed Name Paul Schillinger	Signature 		Month	Day	Year	
				11	29	23	
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	Manifest Reference Number						
	18b. Alternate Facility (or Generator): U.S. EPA ID Number						
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator):							
Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H141	2. H141	3. H141	4.				
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Peter Beran		Signature 		Month	Day	Year	
				11	29	23	



Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number MAR000006734	2. Page 1 of 1	3. Emergency Response Phone (877) 818-0087	4. Manifest Tracking Number 002239137 VES	
5. Generator's Name and Mailing Address VARIAN MEDICAL SYSTEMS, INC 150 ROYALL STREET CANTON, MA 02021			Generator's Site Address (if different than mailing address) 150 SOHIER RD- TRIMENT FAC BEVERLY, MA 01915			
Generator's Phone: 617 589-6012						
6. Transporter 1 Company Name VEOLIA ES TECHNICAL SOLUTIONS			U.S. EPA ID Number NJD080631369			
7. Transporter 2 Company Name FREEHOLD CARTAGE INC			U.S. EPA ID Number NJD054126164			
8. Designated Facility Name and Site Address VEOLIA ES TECHNICAL SOLUTIONS L.L.C. 1 EDEN LANE FLANDERS, NJ 07836			U.S. EPA ID Number NJD980536593			
Facility's Phone: 973 347-7111						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
X	1. NA3077, HAZARDOUS WASTE, SOLID, R.O.S., (TRICHLOROETHYLENE), 9, III	20	DM	11000	P	F002
	2.					
	3.					
	4.					
14. Special Handling Instructions and Additional Information ER Service Contracted by VESTS + Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf. + 1) ERG:171 W:373391 A:TWID00373391						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offeror's Printed/Typed Name Deirdre Kearney Jacobs				Signature 		Month Day Year 12 28 23
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name Jean Byron			Signature 		Month Day Year 12 28 23	
Transporter 2 Printed/Typed Name Dave Gony			Signature 		Month Day Year 1 3 24	
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number: _____						
18c. Signature of Alternate Facility (or Generator) Facility's Phone: _____ Month Day Year: _____						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. H141		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name Peter Beran				Signature 		Month Day Year 10 10 24

Appendix G. Plume Stability and Trend Analysis



Appendix G. Trend Evaluation

The Mann-Kendall test (Mann 1945; Kendall 1975; Gilbert 1987) was conducted to evaluate temporal trends in chemical of concern (COC) concentrations. The test is a nonparametric procedure used to assess if there is a monotonic upward or downward trend of the variable of interest over time. A monotonic upward (downward) trend means that the variable consistently increases (decreases) through time, but the trend may or may not be linear. Each data value is compared to all subsequent data values. Thus, the test can be viewed as a nonparametric test for zero slope of the linear regression of time-ordered data versus time, as illustrated by Hollander and Wolfe (1973).

The Mann-Kendall test statistic (S) is found by counting the number of "concordant observations," where the later-in-time observation has a larger value for the series, and subtracting the number of "discordant observations," where the later-in-time observation has a smaller value for the series. This is done for all pairs of observations in the data set. The total difference is denoted S . Positive values of S indicate an increase in COC concentrations over time, whereas negative values indicate a decrease in COC concentrations over time. The strength of the trend is proportional to the magnitude of the S (that is, the larger the absolute value of S , the stronger the evidence for a real increasing or decreasing trend). Data reported as nondetects were included in the test by assigning them a common value that was less than the smallest measured value in the data set (EPA 2009).

The null hypothesis in the Mann-Kendall test assumes that there is no trend (the data are independent and randomly ordered), and this is tested against the alternative hypothesis, which assumes that there is a trend. The calculated probability (p -value) of the test represents the probability that any observed trend would occur by chance (given the variability and sample size of the data set). A significance level of 0.05 (that is, 95% confidence) was used to test the null hypothesis that there is no trend in the data. Only p -values less than 0.05 indicate a statistically significant trend. The result could be a significantly increasing or decreasing trend or a nonsignificant result (no trend).

To gauge the magnitude of the trend, the Theil-Sen slope was calculated for wells exhibiting a statistically significant trend in COC concentrations. Although nonparametric, the Theil-Sen slope estimator does not use data ranks but rather the concentrations themselves. The method is nonparametric because the median pairwise slope is used, thus ignoring extreme values that might otherwise skew the slope estimate. Consequently, the Theil-Sen line estimates the change in median concentration over time and not the mean as in linear regression. The Theil-Sen method handles nondetects in the same manner as the Mann-Kendall test; it assigns each nondetect a common value less than any detected measurement (EPA 2009). Unlike the Mann-Kendall test, however, the actual concentration values are important in computing the slope estimate in the Theil-Sen procedure. Therefore, the approach is not appropriate when more than 50% of the concentration measurements are nondetects (ITRC 2013).

Summary statistics (mean, median, standard deviation, and CV) were calculated using the Kaplan-Meier (KM) product-limit estimator (Kaplan and Meier 1958) for nondetects, with the censoring limit set at the reporting limit. EPA (2009) recommends the use of the KM method when dealing with environmental data sets containing multiple censored observations. The KM method is a standard nonparametric method for

computing descriptive statistics for data sets containing a mixture of detects and nondetects. A percentile is assigned to each detected observation, starting at the largest detected value and working down the data set, based on the number of detects and nondetects above and below each observation. Percentiles are not assigned to nondetects, but nondetects affect the percentiles calculated for detected observations. The survival curve, a step function plot of the cumulative distribution function, gives the shape of the data set. Estimates of the mean and standard deviation are computed from the estimated cumulative distribution function.

Descriptive statistics were not calculated for those data sets containing greater than 50% nondetects. If a data set is a mixture of detects and nondetects, but the nondetect fraction is no more than 50%, a censored estimation method such as the KM product-limit can be used to compute adjusted estimates of the mean and standard deviation. Because parameter estimation can suffer for data sets with low detection frequencies, EPA (2009) recommends that these methods should not be used when more than 50% of the data are nondetects.

References

- Gilbert, R.O. 1987. *Statistical Methods for Environmental Pollution Monitoring*. Wiley, New York.
- Hollander, M. and D.A. Wolf. 1973. *Nonparametric Statistical Methods*. Wiley, New York.
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- Kendall, M.G. 1975. *Rank Correlation Techniques*. Fourth Edition. Charles Griffen. London.
- Mann, H.B. 1945. "Nonparametric Tests Against Trend." *Econometrica*. Volume 13. pp. 245–259.
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Appendix G: Trend Analysis Results

Temporary Solution and Phase IV Status Update
Former Varian Facility

Monitoring Location	Constituent	Total Samples	Detect Results	Detect Freq. (%)	Min Non-Detect (mg/L)	Min Detect (mg/L)	Max Non-Detect (mg/L)	Max Detect (mg/L)	Mean (mg/L)	Median (mg/L)	Std Dev. (mg/L)	CV	Last Result (mg/L)	Last Sample Date	MK Test Value (S)	MK p-value	Sen's Slope Estimator (mg/L/yr)	Mann-Kendall Result	Trend Analysis Result
AP-15-S	PCE	10	1	10.0	0.00200	0.00300	0.00200	0.00300	---	---	---	---	0.002 U	May-23	7	0.300	---	70% (+)	No Trend
CL02-BR	PCE	10	1	10.0	0.00200	0.00300	0.0100	0.00300	---	---	---	---	0.002 U	May-23	-7	0.300	---	70% (-)	No Trend
CL04-BR	PCE	10	1	10.0	0.00200	0.00200	0.00200	0.00200	---	---	---	---	0.002 U	May-23	3	0.431	---	56.9% (+)	No Trend
CL04-DO	PCE	10	2	20.0	0.00200	0.00300	0.00200	0.00400	---	---	---	---	0.00400	May-23	15	0.108	---	89.2% (+)	No Trend
CL10-BR	PCE	14	0	0	0.00200	---	0.00200	---	---	---	---	---	0.002 U	May-23	0	0.500	---	50% (+)	No Trend
CL10-DO	PCE	17	8	47.1	0.00200	0.110	0.00200	2.90	---	---	---	---	2.10	May-23	94	<0.001	---	100% (sig +)	Increasing
CL10-S	PCE	19	19	100	---	0.0180	---	1.80	0.354	0.220	0.475	1.34	0.310	May-23	-11	0.365	---	63.5% (-)	No Trend
CL11-DO	PCE	9	3	33.3	0.00200	0.00400	0.00200	0.00600	---	---	---	---	0.002 U	May-23	-18	0.038	---	96.2% (sig -)	Decreasing
CL11-S ⁽¹⁾	PCE	8	8	100	---	0.00600	---	0.0140	0.0104	0.0105	0.00266	0.256	0.00810	May-23	-12	0.089	---	91.1% (-)	No Trend
MW-2_32Tozer	PCE	19	15	79.0	0.00200	0.00200	0.0100	4.90	0.619	0.0100	1.49	2.41	0.00200	May-23	-48	0.051	---	95% (-)	No Trend
OB-04-DO	PCE	18	18	100	---	0.0220	---	0.240	0.117	0.130	0.0509	0.435	0.150	May-23	56	0.018	0.00785	98.2% (sig +)	Increasing
OB-05-BR	PCE	11	0	0	0.00200	---	0.0200	---	---	---	---	---	0.02 U	May-23	0	0.500	---	50% (+)	No Trend
OB-05-DO	PCE	18	15	83.3	0.00200	0.0250	0.0200	0.590	0.170	0.145	0.162	0.955	0.160	May-23	-55	0.020	-0.0318	98% (sig -)	Decreasing
OB-05-S ⁽¹⁾	PCE	8	3	37.5	0.00100	0.00200	0.00200	0.00400	---	---	---	---	0.001 U	May-23	-6	0.274	---	72.6% (-)	No Trend
OB-06-BR	PCE	10	9	90.0	0.00200	0.0120	0.00200	0.0420	0.0237	0.0225	0.0121	0.508	0.0140	May-23	-23	0.023	-0.00274	97.7% (sig -)	Decreasing
OB-06-DO	PCE	10	9	90.0	0.00200	0.00300	0.00200	0.0510	0.0137	0.00650	0.0154	1.13	0.00300	May-23	-36	0.001	-0.00369	99.9% (sig -)	Decreasing
OB-08-DO	PCE	10	10	100	---	0.200	---	0.480	0.314	0.320	0.0817	0.260	0.210	May-23	-18	0.066	---	93.4% (-)	No Trend
OB-08-S ⁽¹⁾	PCE	8	8	100	---	0.00280	---	0.0740	0.0467	0.0570	0.0288	0.615	0.00280	May-23	-10	0.138	---	86.2% (-)	No Trend
OB-09-BR	PCE	18	12	66.7	0.00200	0.0120	0.0500	1.90	0.445	0.195	0.544	1.22	0.280	May-23	24	0.195	---	80.6% (+)	No Trend
OB-09-DO	PCE	18	3	16.7	0.00200	0.00200	0.0400	0.0150	---	---	---	---	0.01 U	May-23	24	0.195	---	80.6% (+)	No Trend
OB-09-S	PCE	19	0	0	0.00200	---	0.00200	---	---	---	---	---	0.002 U	May-23	0	0.500	---	50% (+)	No Trend
OB-18-DO	PCE	10	0	0	0.00200	---	0.00200	---	---	---	---	---	0.002 U	May-23	0	0.500	---	50% (+)	No Trend
OB-18-S	PCE	15	0	0	0.00200	---	0.00200	---	---	---	---	---	0.002 U	May-23	0	0.500	---	50% (+)	No Trend
OB-20-BR	PCE	13	0	0	0.00200	---	0.0200	---	---	---	---	---	0.002 U	Apr-21	0	0.500	---	50% (+)	No Trend
OB-20-DO	PCE	19	1	5.26	0.00200	0.0280	0.00400	0.0280	---	---	---	---	0.002 U	May-23	16	0.302	---	69.8% (+)	No Trend
OB-23-BR	PCE	10	0	0	0.00200	---	0.00200	---	---	---	---	---	0.002 U	May-23	0	0.500	---	50% (+)	No Trend
OB-41-S	PCE	19	19	100	---	0.00600	---	0.0920	0.0469	0.0480	0.0255	0.543	0.0170	May-23	-82	0.002	-0.00645	99.8% (sig -)	Decreasing
OB-42-S	PCE	19	19	100	---	0.0370	---	0.110	0.0714	0.0660	0.0205	0.286	0.0560	May-23	-12	0.352	---	64.8% (-)	No Trend
P-19A	PCE	19	2	10.5	0.00200	0.00400	0.00200	0.00500	---	---	---	---	0.002 U	May-23	-35	0.119	---	88.1% (-)	No Trend
STRHA-07A	PCE	21	16	76.2	0.00200	0.00200	0.00200	0.00600	0.00314	0.00300	0.00139	0.442	0.002 U	May-23	-63	0.030	-0.000289	97% (sig -)	Decreasing
STRHA-07B	PCE	21	21	100	---	0.00300	---	0.0130	0.00829	0.00900	0.00228	0.276	0.00800	May-23	4	0.464	---	53.6% (+)	No Trend
STRM-A-SCDS	PCE	22	13	59.1	0.00200	0.00200	0.00200	0.00900	0.00377	0.00250	0.00233	0.619	0.002 U	May-23	-46	0.104	---	89.6% (-)	No Trend
AP-15-S	TCE	10	6	60.0	0.00200	0.00300	0.00200	0.0180	0.00640	0.00300	0.00592	0.925	0.002 U	May-23	4	0.398	---	60.2% (+)	No Trend
CL02-BR	TCE	10	7	70.0	0.00200	0.00300	0.00200	0.0230	0.00830	0.00450	0.00729	0.879	0.002 U	May-23	-14	0.127	---	87.3% (-)	No Trend
CL04-BR	TCE	10	3	30.0	0.00200	0.00200	0.00200	0.0200	---	---	---	---	0.002 U	May-23	-4	0.398	---	60.2% (-)	No Trend
CL04-DO	TCE	10	9	90.0	0.00200	0.0120	0.00200	0.0450	0.0209	0.0180	0.0114	0.547	0.0190	May-23	-24	0.019	-0.00256	98.2% (sig -)	Decreasing
CL10-BR	TCE	14	3	21.4	0.00200	0.00200	0.00200	0.00800	---	---	---	---	0.00800	May-23	32	0.045	---	95.5% (sig +)	Increasing
CL10-DO	TCE	17	7	41.2	0.00200	0.00300	0.00200	1.70	---	---	---	---	1.70	May-23	89	<0.001	---	100% (sig +)	Increasing
CL10-S	TCE	19	16	84.2	0.00200	0.00200	0.00200	0.480	0.0597	0.0110	0.111	1.86	0.0110	May-23	-44	0.067	---	93.3% (-)	No Trend
CL11-DO	TCE	9	8	88.9	0.00200	0.00300	0.00200	0.0420	0.0256	0.0300	0.0137	0.536	0.0300	May-23	-4	0.381	---	61.9% (-)	No Trend
CL11-S ⁽¹⁾	TCE	8	8	100	---	0.00300	---	0.00800	0.00550	0.00600	0.00151	0.275	0.00300	May-23	-4	0.360	---	64% (-)	No Trend
MW-2_32Tozer	TCE	19	15	79.0	0.00200	0.00200	0.0100	0.970	0.131	0.0130	0.281	2.14	0.002 U	May-23	-46	0.058	---	94.2% (-)	No Trend
OB-04-DO	TCE	18	18	100	---	0.0640	---	0.680	0.310	0.290	0.170	0.549	0.510	May-23	40	0.071	---	92.9% (+)	No Trend
OB-05-BR	TCE	11	3	27.3	0.00200	0.00400	0.0200	0.0590	---	---	---	---	0.02 U	May-23	-7	0.324	---	67.6% (-)	No Trend
OB-05-DO	TCE	18	15	83.3	0.00200	0.0280	0.0200	1.90	0.614	0.575	0.606	0.986	0.590	May-23	-54	0.022	-0.118	97.8% (sig -)	Decreasing
OB-05-S ⁽¹⁾	TCE	8	7	87.5	0.00200	0.000300	0.00200	0.0140	0.00395	0.00300	0.00413	1.05	0.0003 J	May-23	-12	0.089	---	91.1% (-)	No Trend
OB-06-BR	TCE	10	9	90.0	0.00200	0.0280	0.00200	0.110	0.0527	0.0490	0.0297	0.564	0.0280	May-23	-35	<0.001	-0.00761	100% (sig -)	Decreasing
OB-06-DO	TCE	10	10	100	---	0.0120	---	0.140	0.0372	0.0240	0.0388	1.04	0.0150	May-23	-31	0.002	-0.00598	99.8% (sig -)	Decreasing
OB-08-DO	TCE	10	10	100	---	1.40	---	2.70	2.22	2.30	0.399	0.180	1.40	May-23	-21	0.036	-0.0845	96.4% (sig -)	Decreasing
OB-08-S ⁽¹⁾	TCE	8	8	100	---	0.00970	---	0.390	0.233	0.275	0.155	0.665	0.00970	May-23	-16	0.031	-0.0265	96.9% (sig -)	Decreasing
OB-09-BR	TCE	18	11	61.1	0.00200	0.0400	0.0500	2.20	0.497	0.110	0.647	1.30	0.110	May-23	26	0.175	---	82.6% (+)	No Trend

Appendix G: Trend Analysis Results

Temporary Solution and Phase IV Status Update
Former Varian Facility

Monitoring Location	Constituent	Total Samples	Detect Results	Detect Freq. (%)	Min Non-Detect (mg/L)	Min Detect (mg/L)	Max Non-Detect (mg/L)	Max Detect (mg/L)	Mean (mg/L)	Median (mg/L)	Std Dev. (mg/L)	CV	Last Result (mg/L)	Last Sample Date	MK Test Value (S)	MK p-value	Sen's Slope Estimator (mg/L/yr)	Mann-Kendall Result	Trend Analysis Result
OB-09-DO	TCE	18	4	22.2	0.00200	0.00200	0.0400	0.0410	---	---	---	---	0.01 U	May-23	26	0.175	---	82.6% (+)	No Trend
OB-09-S	TCE	19	3	15.8	0.00200	0.00200	0.0100	0.00500	---	---	---	---	0.00500	May-23	20	0.256	---	74.4% (+)	No Trend
OB-18-DO	TCE	10	9	90.0	0.00200	0.00200	0.00200	0.0170	0.00740	0.00600	0.00522	0.705	0.00600	May-23	-10	0.216	---	78.4% (-)	No Trend
OB-18-S	TCE	15	1	6.67	0.00200	0.00200	0.00200	0.00200	---	---	---	---	0.002 U	May-23	-12	0.296	---	70.4% (-)	No Trend
OB-20-BR	TCE	13	5	38.5	0.00200	0.00300	0.00200	0.100	---	---	---	---	0.002 U	Apr-21	-40	0.007	---	99.3% (sig -)	Decreasing
OB-20-DO	TCE	19	6	31.6	0.00200	0.00200	0.00400	0.0100	---	---	---	---	0.002 U	May-23	-43	0.072	---	92.8% (-)	No Trend
OB-23-BR	TCE	10	2	20.0	0.00200	0.00200	0.00200	0.00400	---	---	---	---	0.002 U	May-23	1	0.500	---	50% (+)	No Trend
OB-41-S	TCE	19	19	100	---	0.0290	---	0.540	0.234	0.260	0.139	0.592	0.0870	May-23	-67	0.010	-0.0310	99% (sig -)	Decreasing
OB-42-S	TCE	19	19	100	---	0.740	---	4.00	2.14	2.20	0.800	0.373	1.80	May-23	-15	0.314	---	68.6% (-)	No Trend
P-19A	TCE	19	11	57.9	0.00200	0.00200	0.00200	0.0270	0.00511	0.00200	0.00676	1.32	0.002 U	May-23	-83	0.002	-0.000933	99.8% (sig -)	Decreasing
STRHA-07A	TCE	21	21	100	---	0.00500	---	0.0330	0.0148	0.0130	0.00774	0.524	0.00600	May-23	-65	0.026	-0.00142	97.4% (sig -)	Decreasing
STRHA-07B	TCE	21	21	100	---	0.0100	---	0.0440	0.0338	0.0350	0.00877	0.259	0.0320	May-23	5	0.453	---	54.8% (+)	No Trend
STRM-A-SCDS	TCE	22	19	86.4	0.00200	0.00300	0.00200	0.0230	0.00950	0.00650	0.00716	0.754	0.00300	May-23	-36	0.164	---	83.6% (-)	No Trend

Notes:

For data sets containing less than 50% non-detects, descriptive statistics were calculated using the Kaplan-Meier product-limit estimator to adjust for the presence of non-detects.

Descriptive statistics were not calculated for those data sets containing greater than 50% non-detects.

Trend analysis performed using Mann-Kendall single-tailed test at 0.05 significance level with non-detects assigned a common value less than the smallest measured value in the dataset.

⁽¹⁾ Locations that required using data prior to January 2014 to obtain 8 sample results.

"---" = not applicable

"<" = less than

% = percent

(-) = negative trend

(+) = positive trend

>50% ND = greater than 50 percent non-detects

CV = coefficient of variation

Freq. = frequency

J = estimated value

Max = maximum

mg/L = milligram(s) per liter

mg/L/yr = milligram(s) per liter per year

Min = minimum

MK = Mann-Kendall

ND = non-detect

p-value = probability value

PCE = tetrachloroethene

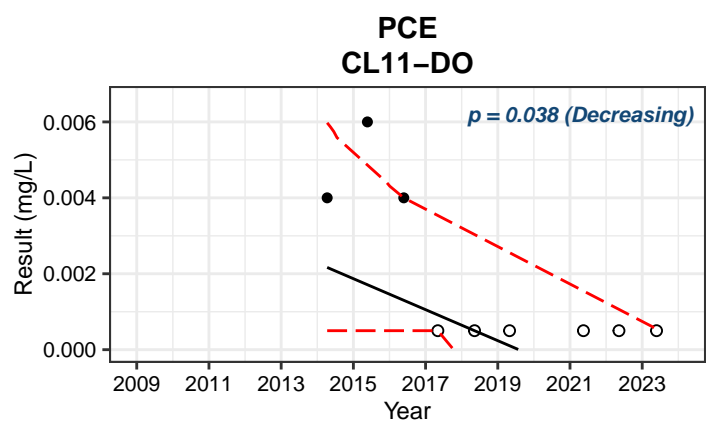
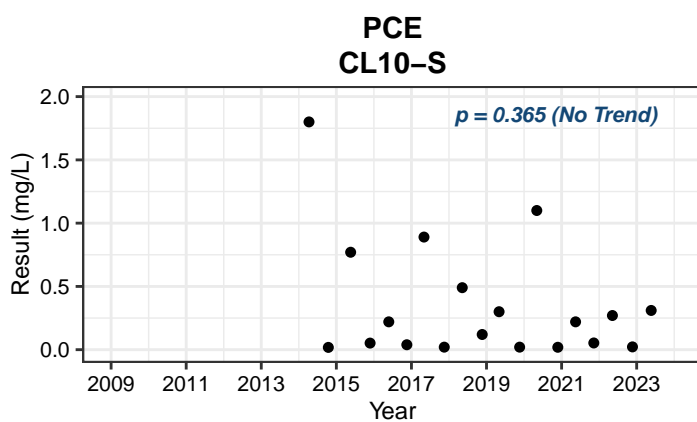
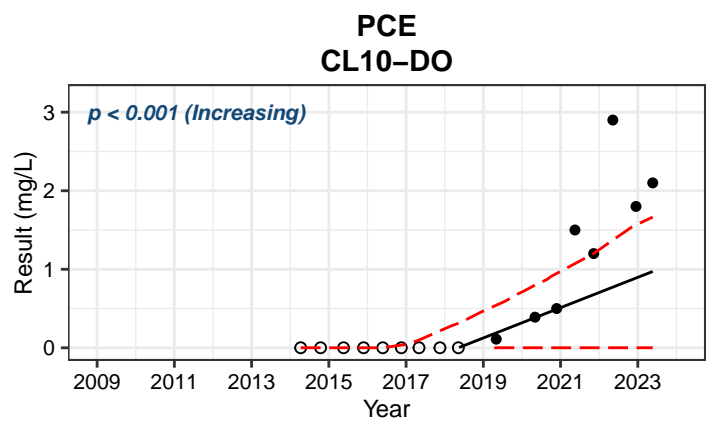
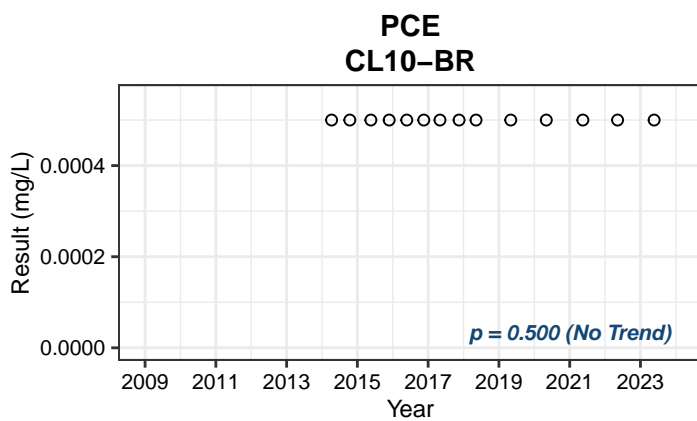
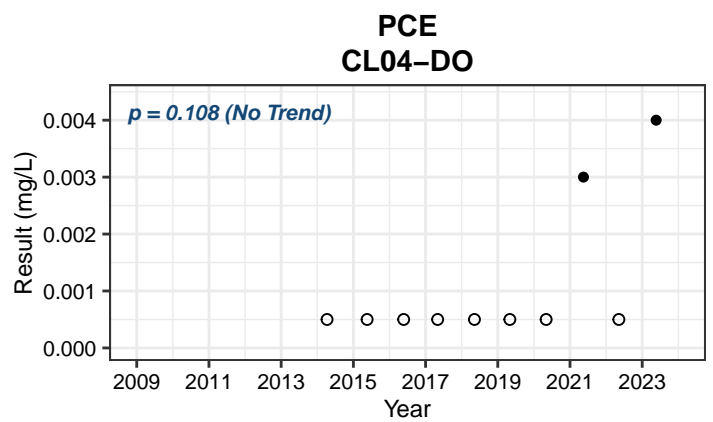
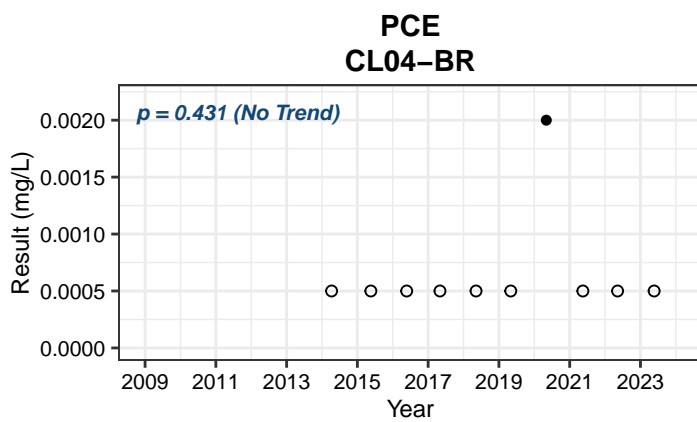
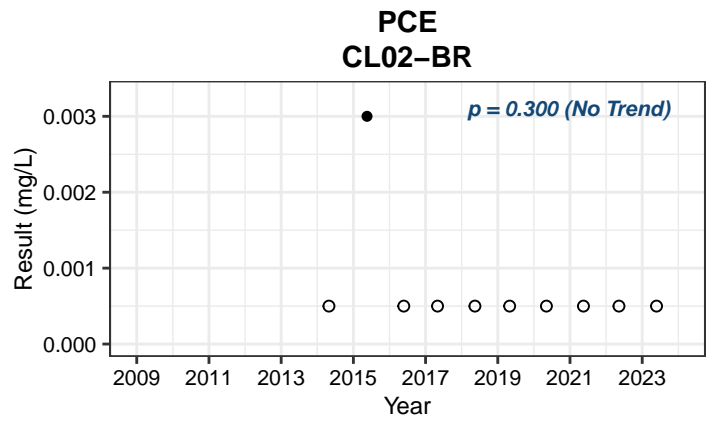
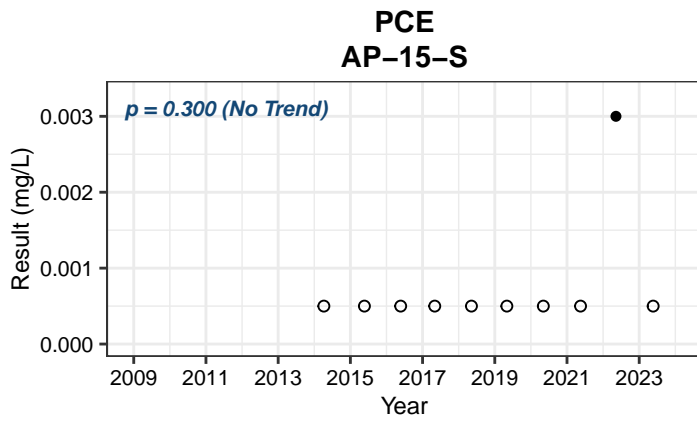
sig = (statistically) significant.

Std Dev. = standard deviation

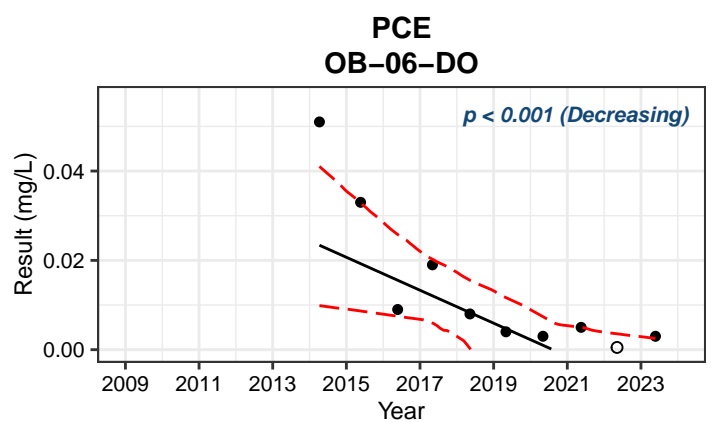
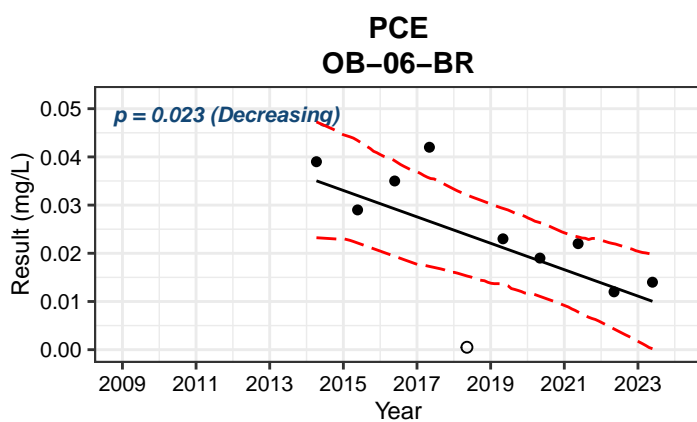
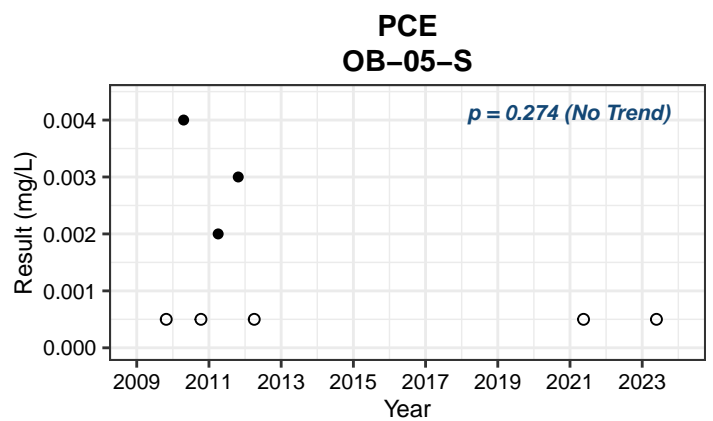
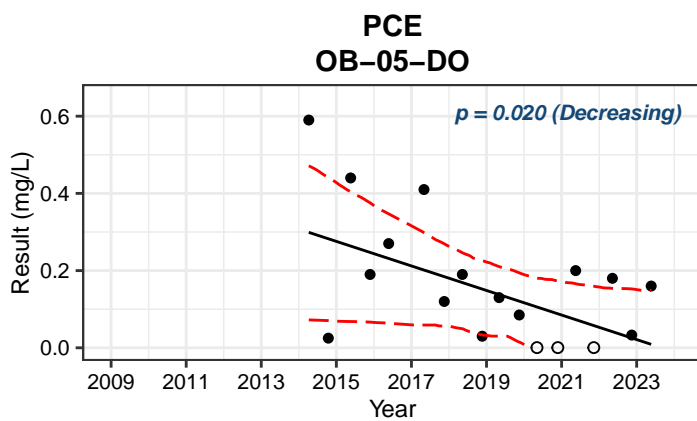
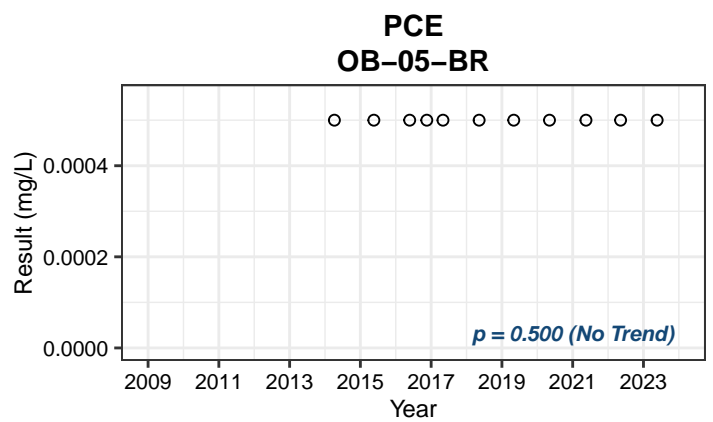
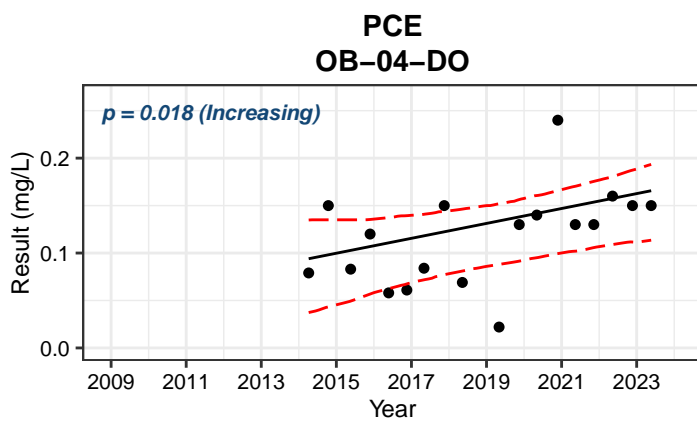
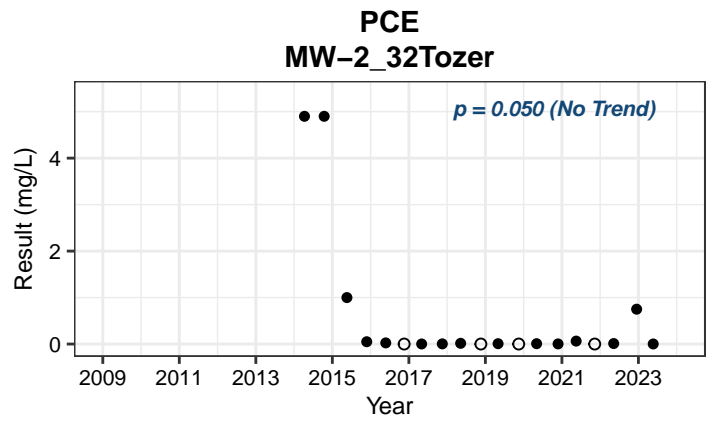
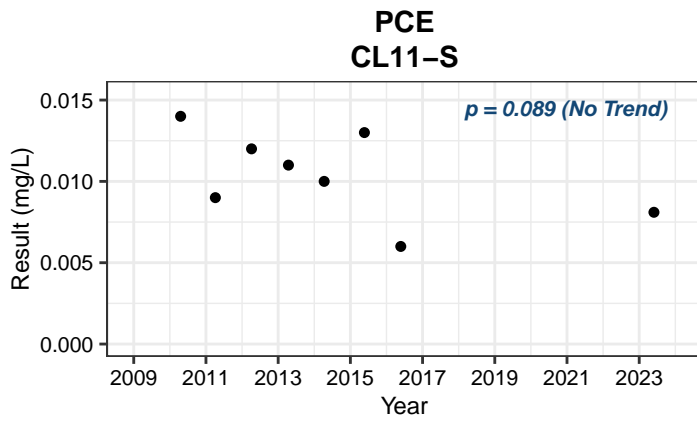
TCE = trichloroethene

U = non-detect at reporting limit

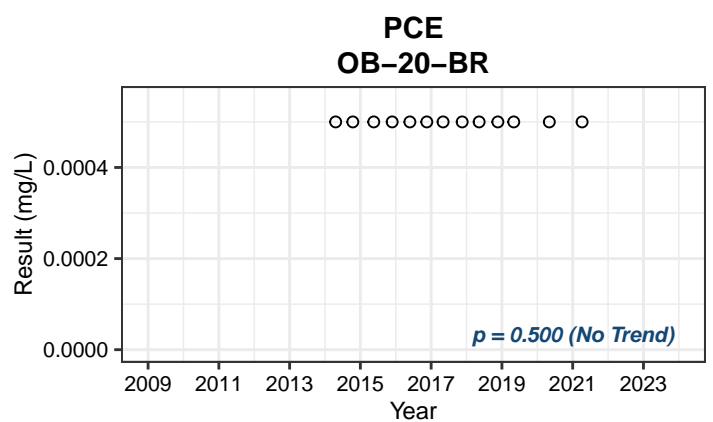
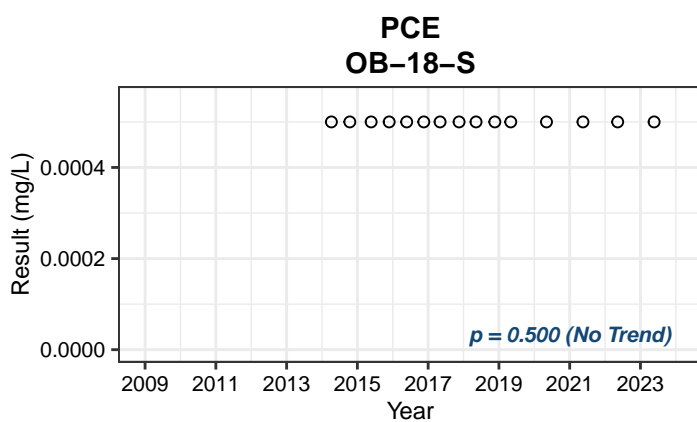
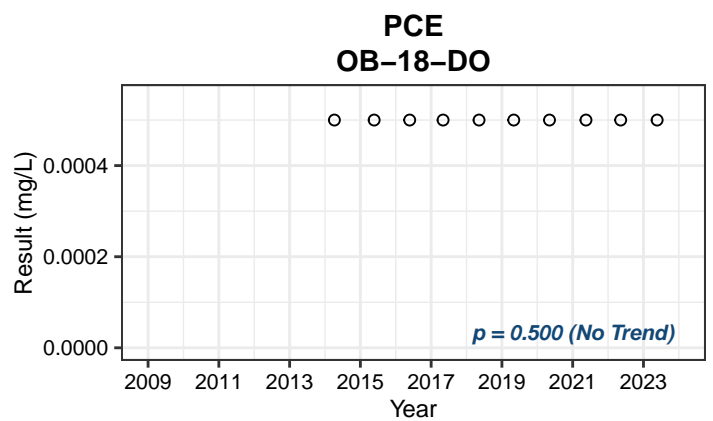
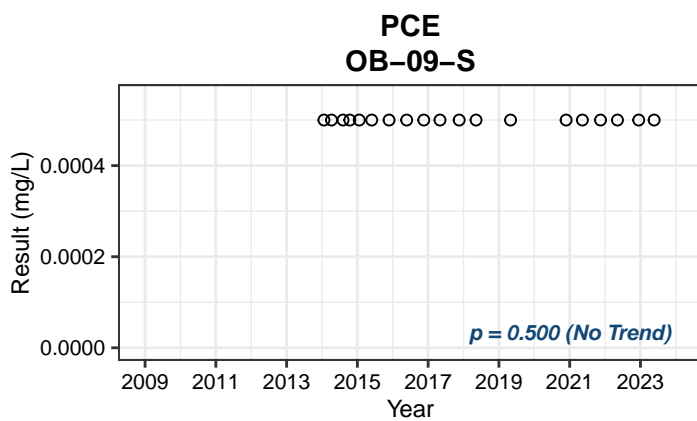
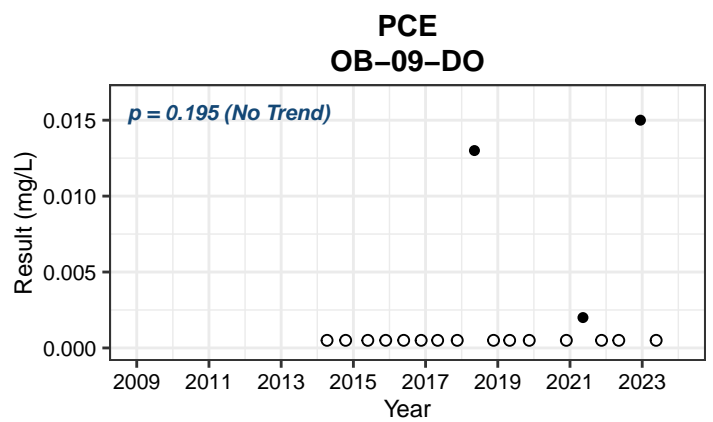
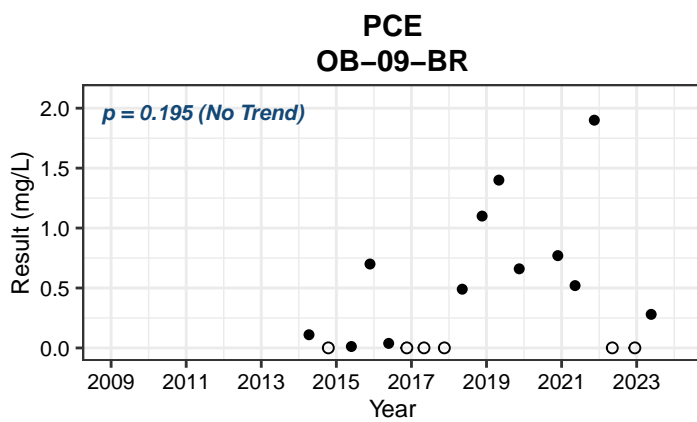
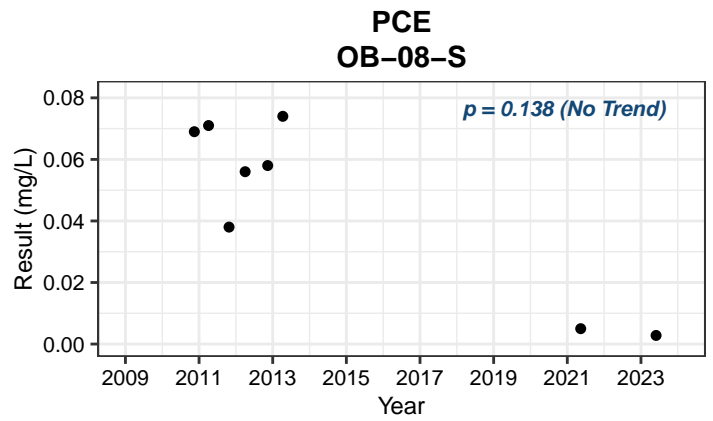
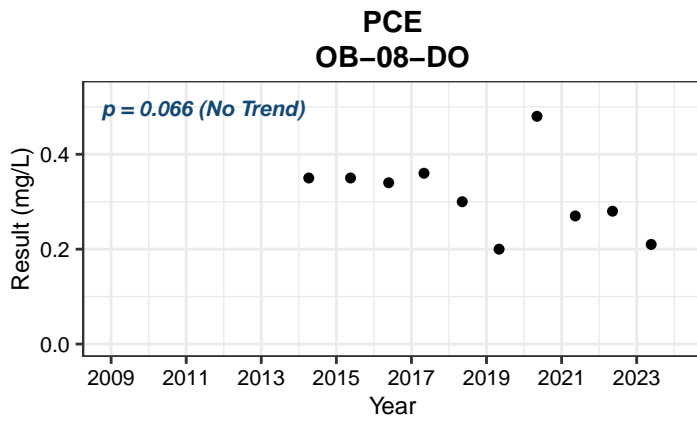
Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



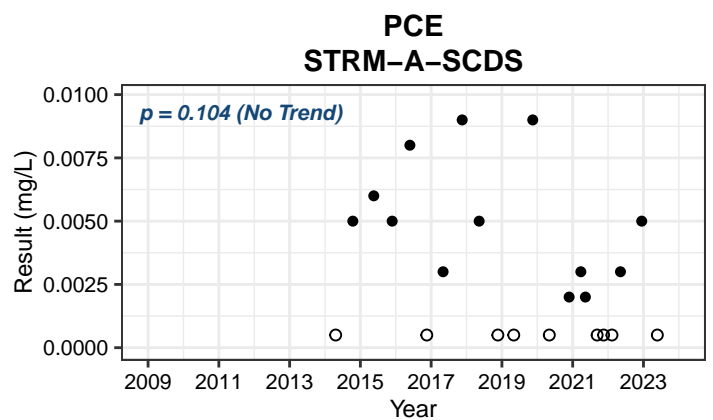
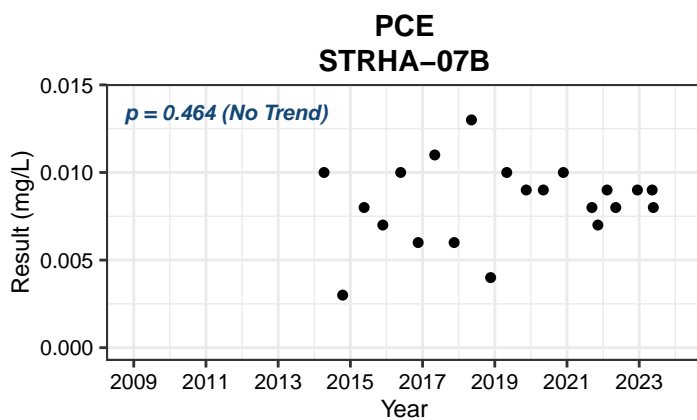
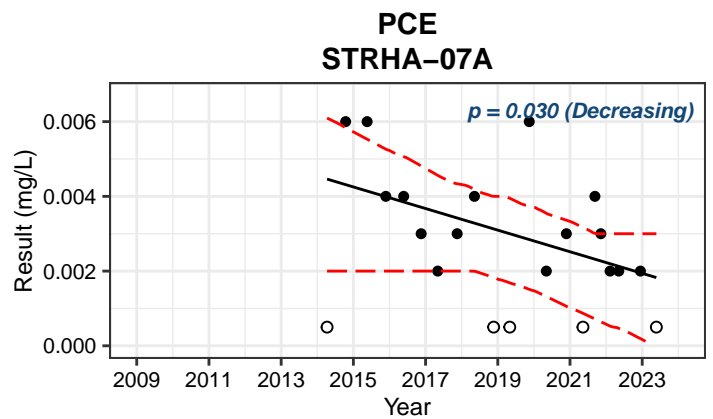
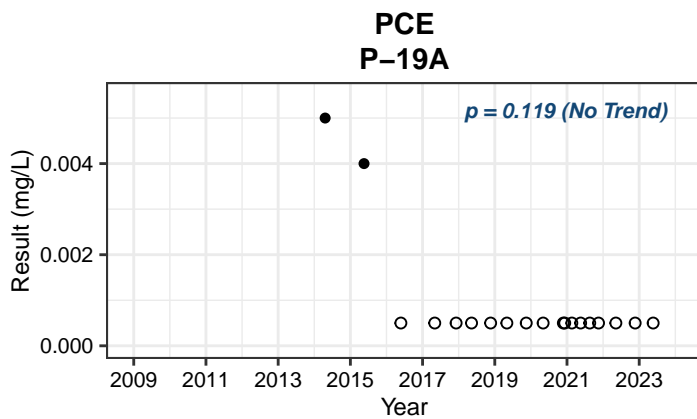
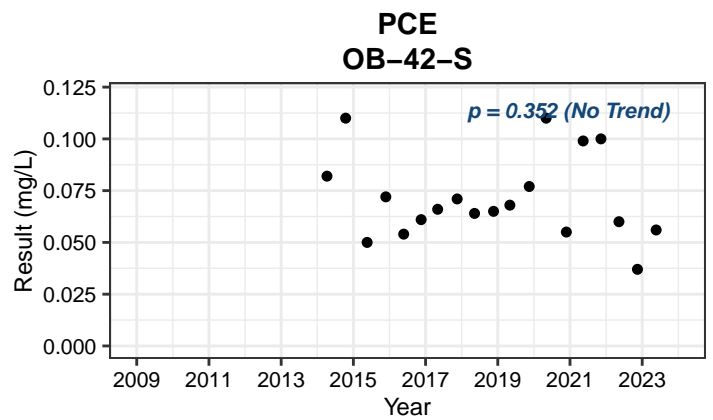
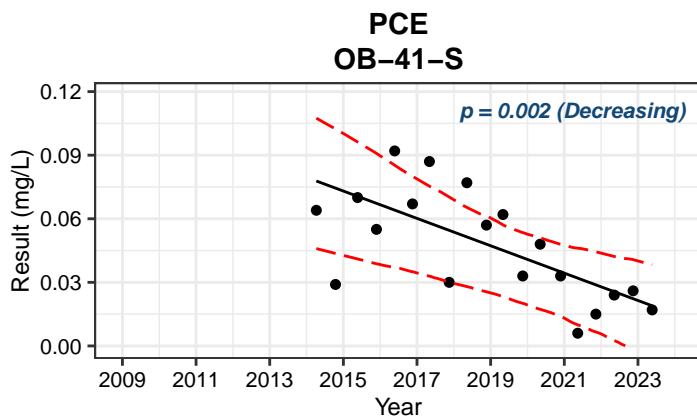
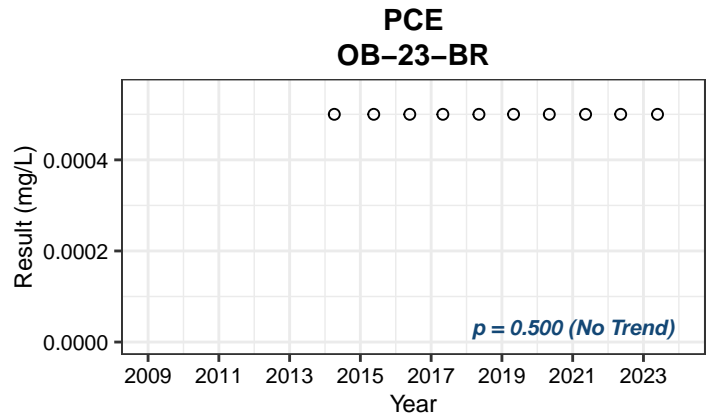
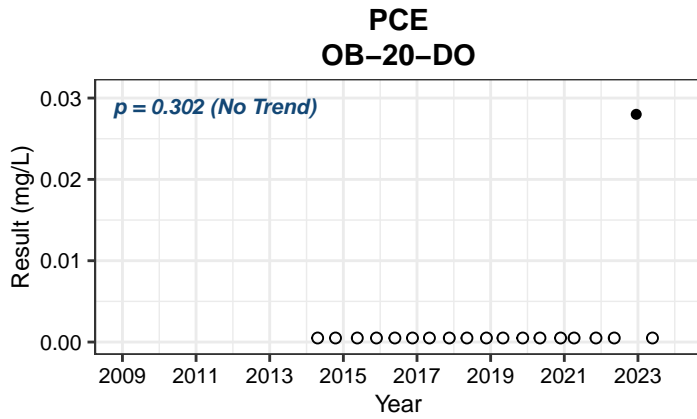
Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



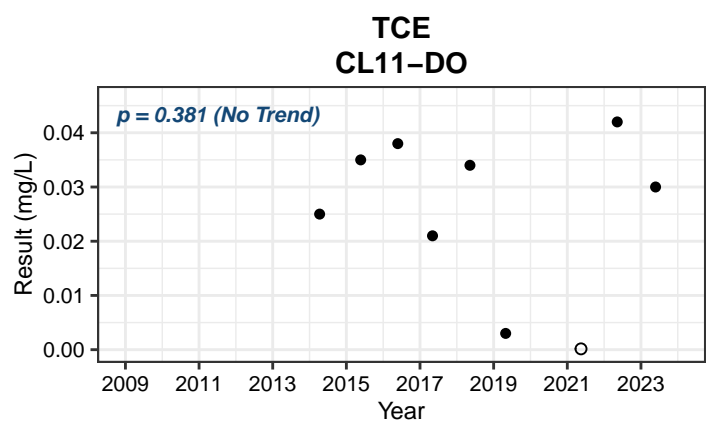
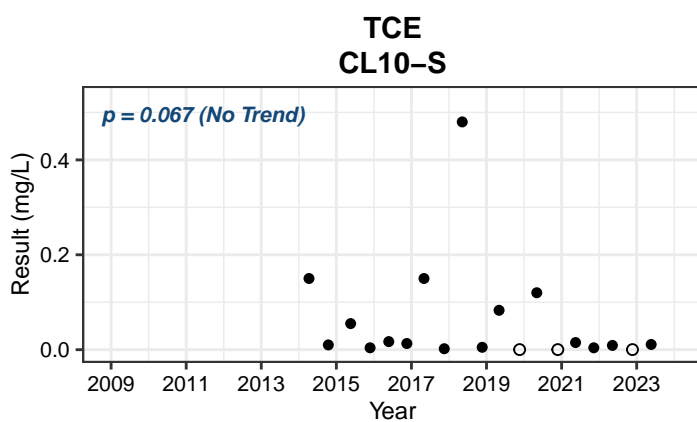
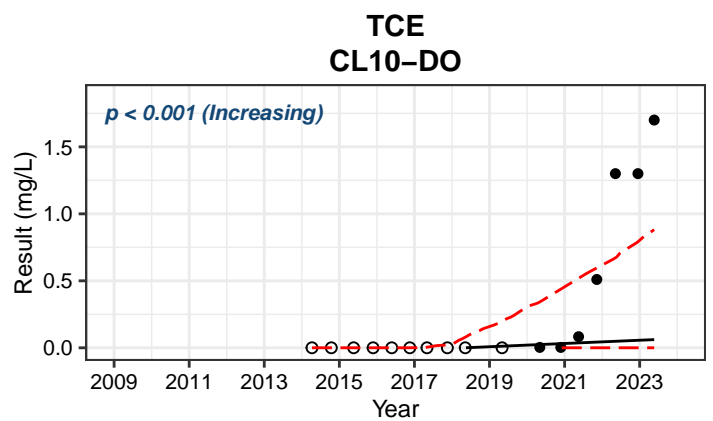
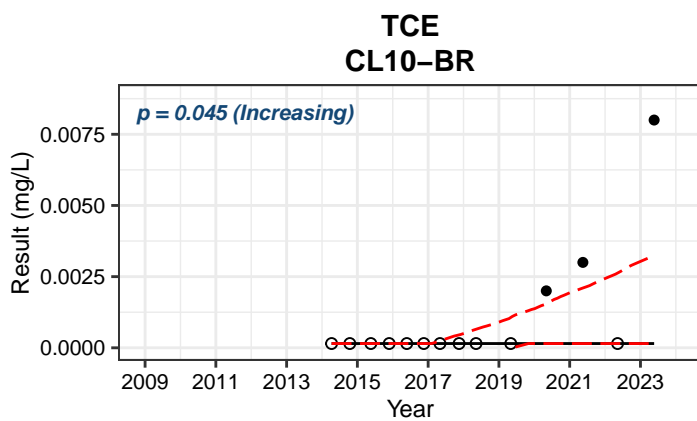
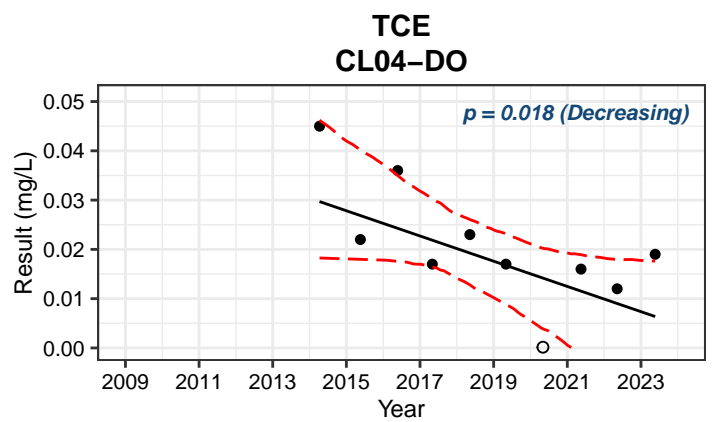
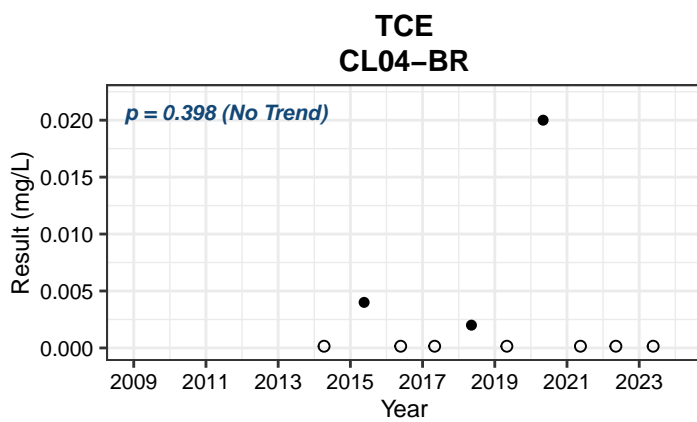
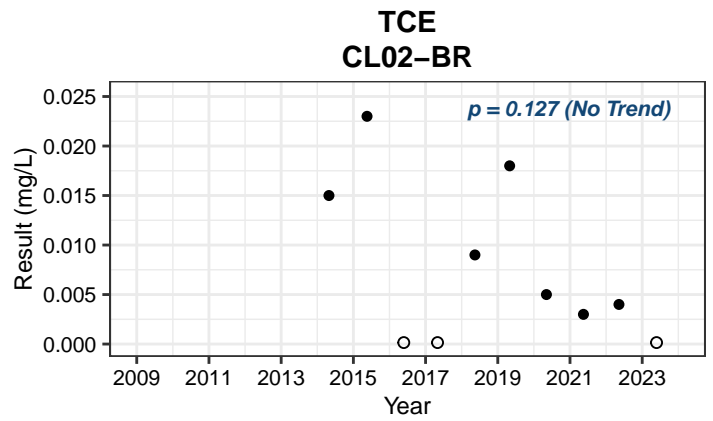
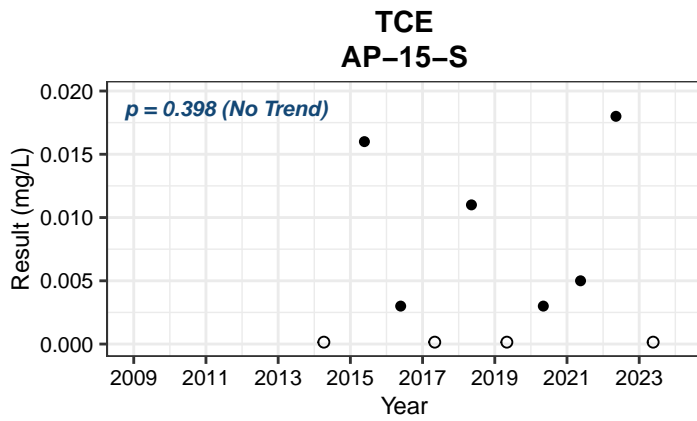
Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



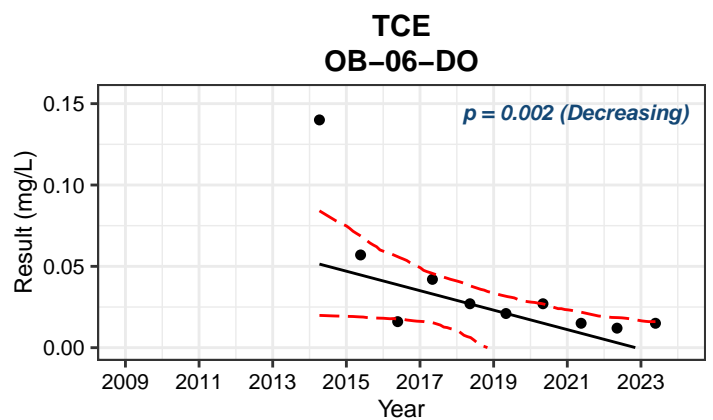
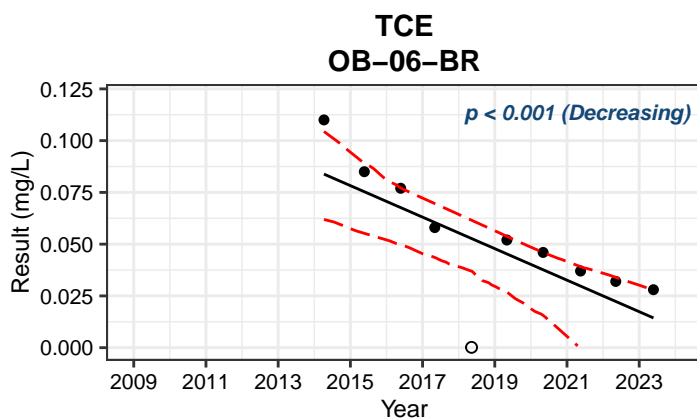
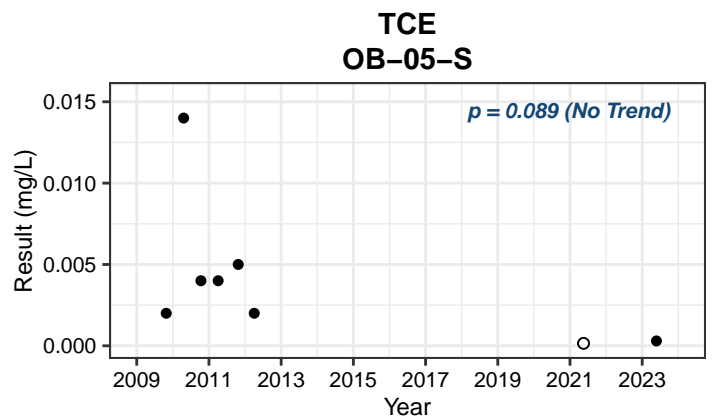
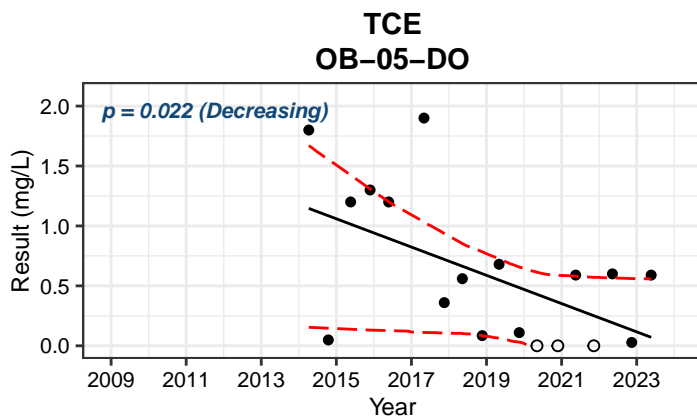
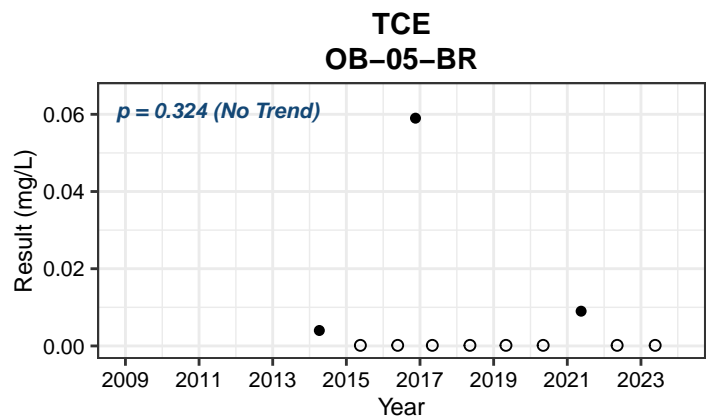
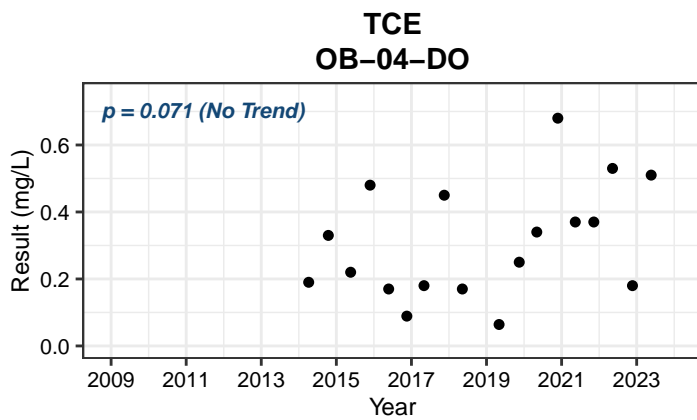
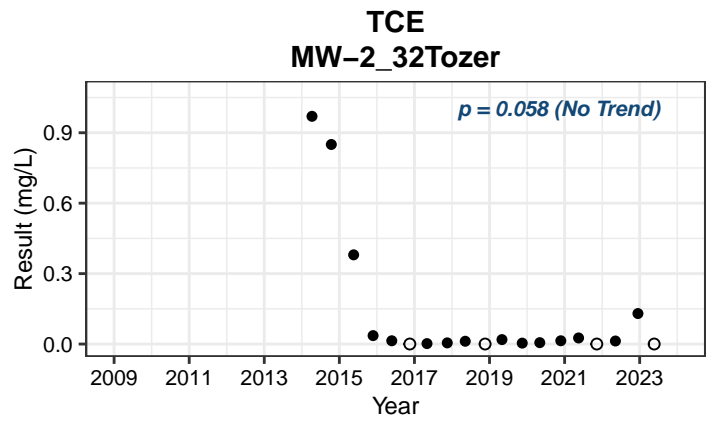
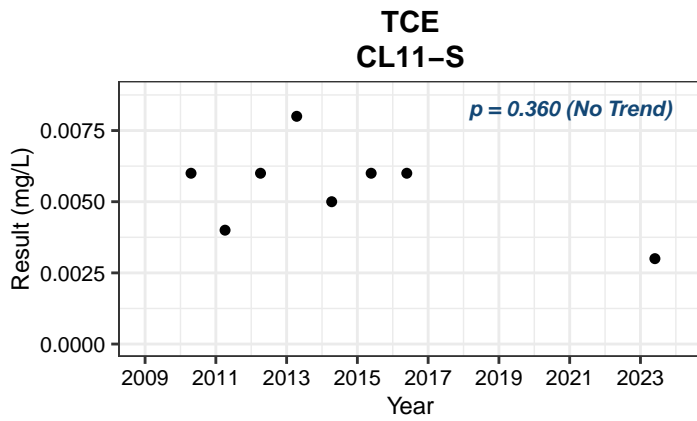
Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



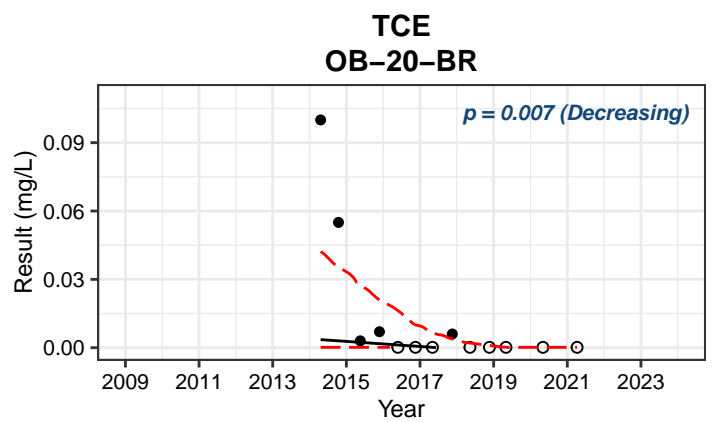
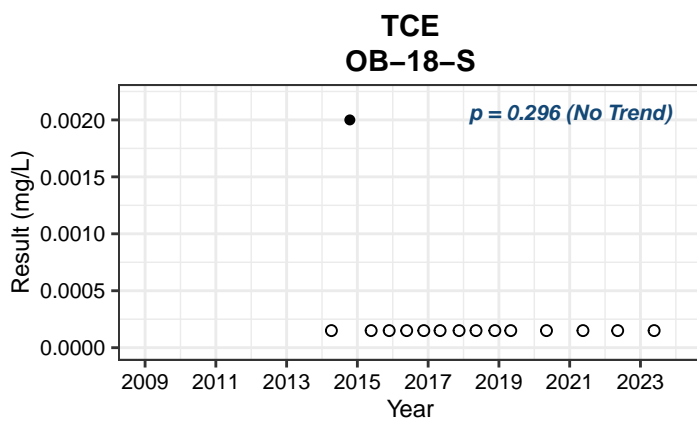
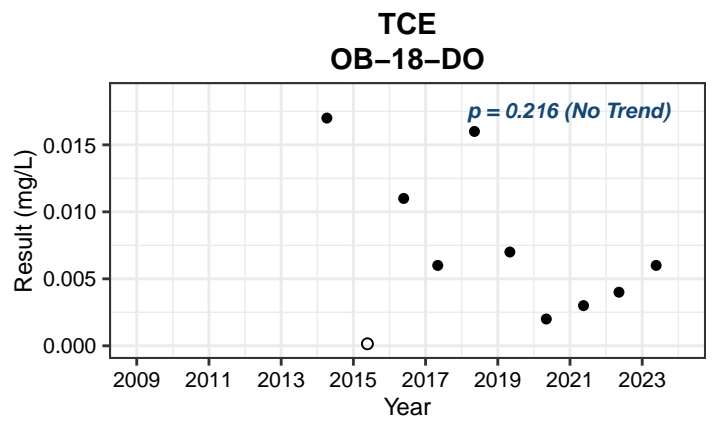
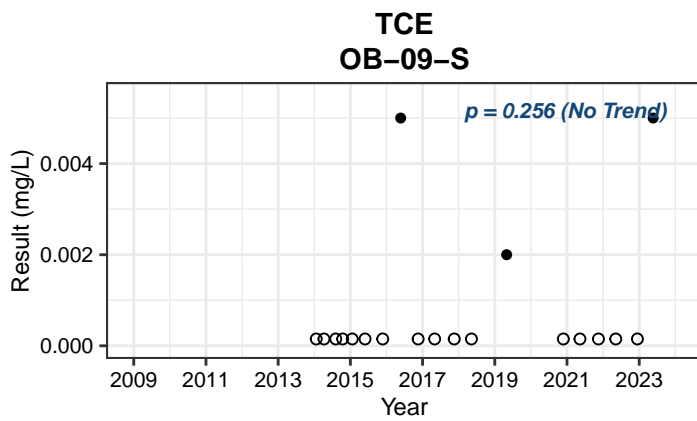
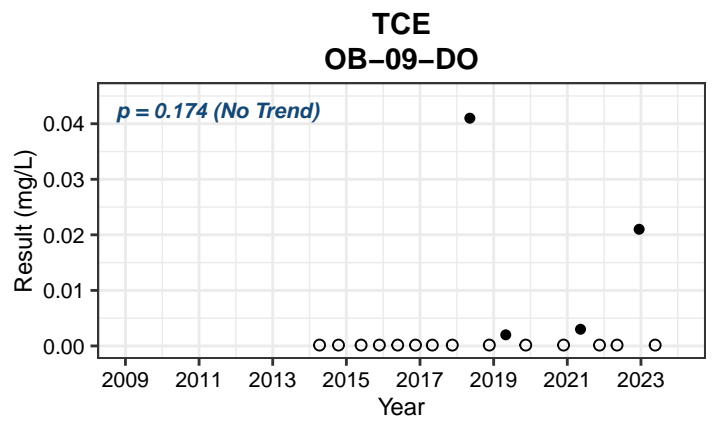
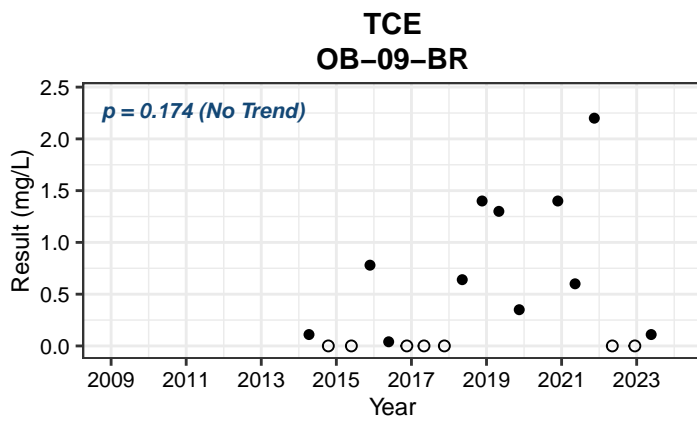
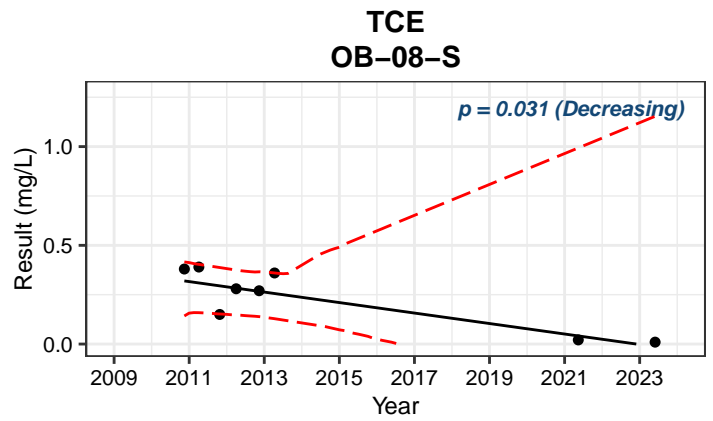
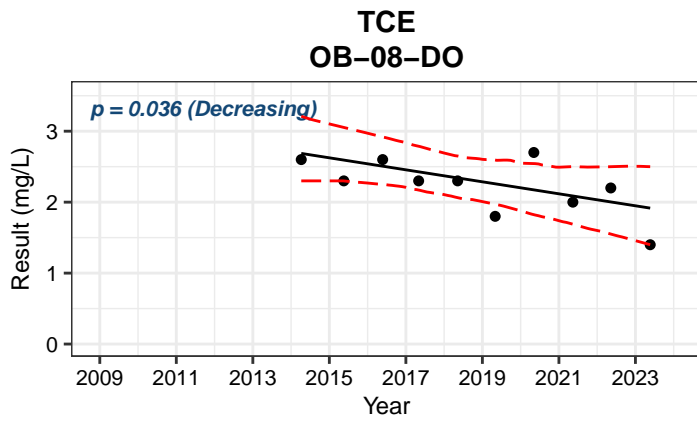
Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



Theil–Sen Trend Plots with Bootstrapped 95% Confidence Limits
 (nondetects plotted using open symbols at one–half the minimum detected value)



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 (nondetects plotted using open symbols at one–half the minimum detected value)

