

Project Name: Quantum Frederick
PSS Project No.: 23053018

May 31, 2023

Colleen McMullen
GTA - Baltimore
1414 Key Highway, Ste. 201P
Baltimore, MD 21230



Reference: PSS Project No: **23053018**
Project Name: Quantum Frederick
Project Location: Frederick, MD
Project ID.: 31222314

Dear Colleen McMullen:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **23053018**.

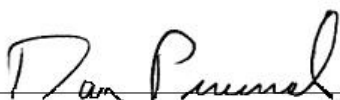
All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 4, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Quantum Frederick

PSS Project No.: 23053018

Project ID: 31222314

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/30/2023 at 03:52 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
23053018-001	GTA-TC-1	SURFACE WATER	05/30/23 10:30
23053018-002	GTA-TC-2	SURFACE WATER	05/30/23 12:15
23053018-003	GTA-TC-3	SURFACE WATER	05/30/23 13:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Quantum Frederick
PSS Project No.: 23053018

Sample ID: GTA-TC-1 **Date/Time Sampled: 05/30/2023 10:30** **PSS Sample ID: 23053018-001**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

Dissolved Priority Pollutant Metals Analytical Method: EPA 200.8 Dissolved Preparation Method: E200.8

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 203881 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	05/31/23	05/31/23 11:48	1059
Arsenic	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Beryllium	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Cadmium	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Chromium	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Copper	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Lead	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Mercury	ND	ug/L	0.20		1	05/31/23	05/31/23 11:48	1059
Nickel	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Selenium	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Silver	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Thallium	ND	ug/L	1.0		1	05/31/23	05/31/23 11:48	1059
Zinc	ND	ug/L	20		1	05/31/23	05/31/23 11:48	1059

Inorganic Anions Analytical Method: EPA 300.0 Preparation Method: E300.0P

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	ND	mg/L	0.25		1	05/31/23	05/31/23 11:37	1053

Total Cyanide Analytical Method: SM 4500-CN C,E -2016 Preparation Method: SM4500CN-C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	ND	mg/L	0.010		1	05/31/23	05/31/23 13:04	1053

Certificate of Analysis

Project Name: Quantum Frederick

PSS Project No.: 23053018

Sample ID: GTA-TC-1 **Date/Time Sampled: 05/30/2023 10:30** **PSS Sample ID: 23053018-001**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 203872 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	05/31/23	05/31/23 10:43	1011
Benzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Bromochloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Bromodichloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Bromoform	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Bromomethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	05/31/23	05/31/23 10:43	1011
Carbon Disulfide	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Carbon tetrachloride	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Chlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Chloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Chloroform	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Chloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Cyclohexane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Dibromochloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Ethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	05/31/23	05/31/23 10:43	1011
Isopropylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Methyl Acetate	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Methylcyclohexane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Methylene chloride	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053018

Sample ID: GTA-TC-1 **Date/Time Sampled: 05/30/2023 10:30** **PSS Sample ID: 23053018-001**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 203872 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	05/31/23	05/31/23 10:43	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Naphthalene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Styrene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Tetrachloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Toluene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Trichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,2,4-Trimethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
1,3,5-Trimethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
Vinyl chloride	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011
m&p-Xylene	ND	ug/L	2.0		1	05/31/23	05/31/23 10:43	1011
o-Xylene	ND	ug/L	1.0		1	05/31/23	05/31/23 10:43	1011

Surrogate(s)	Recovery	Limits				
4-Bromofluorobenzene	114 %	88-120	1	05/31/23	05/31/23 10:43	1011
Dibromofluoromethane	97 %	92-107	1	05/31/23	05/31/23 10:43	1011
Toluene-D8	98 %	95-106	1	05/31/23	05/31/23 10:43	1011

Certificate of Analysis

Project Name: Quantum Frederick
PSS Project No.: 23053018

Sample ID: GTA-TC-2 **Date/Time Sampled: 05/30/2023 12:15** **PSS Sample ID: 23053018-002**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

Dissolved Priority Pollutant Metals Analytical Method: EPA 200.8 Dissolved Preparation Method: E200.8

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 203881 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	05/31/23	05/31/23 12:04	1059
Arsenic	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Beryllium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Cadmium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Chromium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Copper	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Lead	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Mercury	ND	ug/L	0.20		1	05/31/23	05/31/23 12:04	1059
Nickel	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Selenium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Silver	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Thallium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:04	1059
Zinc	ND	ug/L	20		1	05/31/23	05/31/23 12:04	1059

Inorganic Anions Analytical Method: EPA 300.0 Preparation Method: E300.0P

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	ND	mg/L	0.25		1	05/31/23	05/31/23 12:00	1053

Total Cyanide Analytical Method: SM 4500-CN C,E -2016 Preparation Method: SM4500CN-C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	ND	mg/L	0.010		1	05/31/23	05/31/23 13:10	1053

Certificate of Analysis

Project Name: Quantum Frederick

PSS Project No.: 23053018

Sample ID: GTA-TC-2 **Date/Time Sampled: 05/30/2023 12:15** **PSS Sample ID: 23053018-002**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 203872 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	05/31/23	05/31/23 11:06	1011
Benzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Bromochloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Bromodichloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Bromoform	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Bromomethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	05/31/23	05/31/23 11:06	1011
Carbon Disulfide	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Carbon tetrachloride	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Chlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Chloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Chloroform	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Chloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Cyclohexane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Dibromochloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Ethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	05/31/23	05/31/23 11:06	1011
Isopropylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Methyl Acetate	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Methylcyclohexane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Methylene chloride	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053018

Sample ID: GTA-TC-2 **Date/Time Sampled: 05/30/2023 12:15** **PSS Sample ID: 23053018-002**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 203872 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	05/31/23	05/31/23 11:06	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Naphthalene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Styrene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Tetrachloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Toluene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Trichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,2,4-Trimethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
1,3,5-Trimethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
Vinyl chloride	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011
m&p-Xylene	ND	ug/L	2.0		1	05/31/23	05/31/23 11:06	1011
o-Xylene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:06	1011

Surrogate(s)	Recovery	Limits					
4-Bromofluorobenzene	114 %	88-120	1	05/31/23	05/31/23 11:06	1011	
Dibromofluoromethane	96 %	92-107	1	05/31/23	05/31/23 11:06	1011	
Toluene-D8	97 %	95-106	1	05/31/23	05/31/23 11:06	1011	

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053018

Sample ID: GTA-TC-3 **Date/Time Sampled: 05/30/2023 13:00** **PSS Sample ID: 23053018-003**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

Dissolved Priority Pollutant Metals Analytical Method: EPA 200.8 Dissolved Preparation Method: E200.8

Qualifier(s): See Sample Receipt section on Case Narrative. See Batch 203881 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	05/31/23	05/31/23 12:09	1059
Arsenic	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Beryllium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Cadmium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Chromium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Copper	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Lead	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Mercury	ND	ug/L	0.20		1	05/31/23	05/31/23 12:09	1059
Nickel	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Selenium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Silver	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Thallium	ND	ug/L	1.0		1	05/31/23	05/31/23 12:09	1059
Zinc	ND	ug/L	20		1	05/31/23	05/31/23 12:09	1059

Inorganic Anions Analytical Method: EPA 300.0 Preparation Method: E300.0P

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	0.71	mg/L	0.25		1	05/31/23	05/31/23 12:23	1053

Total Cyanide Analytical Method: SM 4500-CN C,E -2016 Preparation Method: SM4500CN-C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	ND	mg/L	0.010		1	05/31/23	05/31/23 13:12	1053

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053018

Sample ID: GTA-TC-3 **Date/Time Sampled: 05/30/2023 13:00** **PSS Sample ID: 23053018-003**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B
 Qualifier(s): See Batch 203872 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	5.0		1	05/31/23	05/31/23 11:28	1011
Benzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Bromochloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Bromodichloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Bromoform	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Bromomethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
2-Butanone (MEK)	ND	ug/L	5.0		1	05/31/23	05/31/23 11:28	1011
Carbon Disulfide	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Carbon tetrachloride	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Chlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Chloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Chloroform	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Chloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Cyclohexane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Dibromochloromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Ethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	05/31/23	05/31/23 11:28	1011
Isopropylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Methyl Acetate	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Methylcyclohexane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Methylene chloride	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053018

Sample ID: GTA-TC-3 **Date/Time Sampled: 05/30/2023 13:00** **PSS Sample ID: 23053018-003**
Matrix: SURFACE WATER **Date/Time Received: 05/30/2023 15:52**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030B

Qualifier(s): See Batch 203872 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	05/31/23	05/31/23 11:28	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Naphthalene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Styrene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Tetrachloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Toluene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Trichloroethene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Trichlorofluoromethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,2,4-Trimethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
1,3,5-Trimethylbenzene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
Vinyl chloride	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011
m&p-Xylene	ND	ug/L	2.0		1	05/31/23	05/31/23 11:28	1011
o-Xylene	ND	ug/L	1.0		1	05/31/23	05/31/23 11:28	1011

Surrogate(s)	Recovery	Limits					
4-Bromofluorobenzene	112 %	88-120	1	05/31/23	05/31/23 11:28	1011	
Dibromofluoromethane	98 %	92-107	1	05/31/23	05/31/23 11:28	1011	
Toluene-D8	99 %	95-106	1	05/31/23	05/31/23 11:28	1011	

Case Narrative

Project Name: Quantum Frederick

PSS Project No.: 23053018

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

Sample aliquots for dissolved metals were not field filtered and were received unpreserved; as such, associated sample results are not suitable for compliance under the Clean Water Act and/or Safe Drinking Water Act.

Analytical:

Dissolved Priority Pollutant Metals

Batch: 203881

Method exceedances:

- Initial calibration verification standard (ICV) exceedance identified; see QC summary.
- Recovery of the low-level initial calibration readback standard for mercury was 142%; limits are 80 - 120%. The recovery of the mid-level initial calibration readback standard met acceptance criteria. All samples were non-detect for these elements and all batch QC was also acceptable.

Analytical:

MDE TCL Volatile Organic Compounds

Batch: 203872

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Laboratory control sample (LCS) exceedances identified; see QC summary. Exceedances meet marginal exceedance criteria.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Lab Chronology

Project Name: Quantum Frederick

PSS Project No.: 23053018

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 200.8 Dissolved	GTA-TC-1	Initial	23053018-001	W	95637	203881	05/31/2023 10:11	05/31/2023 11:48
	GTA-TC-2	Initial	23053018-002	W	95637	203881	05/31/2023 10:11	05/31/2023 12:04
	GTA-TC-3	Initial	23053018-003	W	95637	203881	05/31/2023 10:11	05/31/2023 12:09
	95637-1-BKS	BKS	95637-1-BKS	W	95637	203881	05/31/2023 10:11	05/31/2023 11:43
	95637-1-BLK	BLK	95637-1-BLK	W	95637	203881	05/31/2023 10:11	05/31/2023 11:37
	GTA-TC-1 S	MS	23053018-001 S	W	95637	203881	05/31/2023 10:11	05/31/2023 11:53
	GTA-TC-1 SD	MSD	23053018-001 S	W	95637	203881	05/31/2023 10:11	05/31/2023 11:59
EPA 300.0	GTA-TC-1	Initial	23053018-001	W	95634	203893	05/31/2023 09:53	05/31/2023 11:37
	GTA-TC-2	Initial	23053018-002	W	95634	203893	05/31/2023 09:53	05/31/2023 12:00
	GTA-TC-3	Initial	23053018-003	W	95634	203893	05/31/2023 09:53	05/31/2023 12:23
	95634-1-BKS	BKS	95634-1-BKS	W	95634	203893	05/31/2023 09:42	05/31/2023 11:14
	95634-1-BLK	BLK	95634-1-BLK	W	95634	203893	05/31/2023 09:42	05/31/2023 10:51
SM 4500-CN C,E - 2016	GTA-TC-1	Initial	23053018-001	W	95639	203876	05/31/2023 11:27	05/31/2023 13:04
	GTA-TC-2	Initial	23053018-002	W	95639	203876	05/31/2023 11:27	05/31/2023 13:10
	GTA-TC-3	Initial	23053018-003	W	95639	203876	05/31/2023 11:27	05/31/2023 13:12
	95639-1-BKS	BKS	95639-1-BKS	W	95639	203876	05/31/2023 11:27	05/31/2023 12:58
	95639-1-BLK	BLK	95639-1-BLK	W	95639	203876	05/31/2023 11:27	05/31/2023 12:56
	95639-1-BSD	BSD	95639-1-BSD	W	95639	203876	05/31/2023 11:27	05/31/2023 13:00
	23053018-001 S	MS	23053018-001 S	W	95639	203876	05/31/2023 11:27	05/31/2023 13:06
	23053018-001 SD	MSD	23053018-001 S	W	95639	203876	05/31/2023 11:27	05/31/2023 13:08
SW-846 8260 D	GTA-TC-1	Initial	23053018-001	W	95644	203872	05/31/2023 09:03	05/31/2023 10:43
	GTA-TC-2	Initial	23053018-002	W	95644	203872	05/31/2023 09:03	05/31/2023 11:06
	GTA-TC-3	Initial	23053018-003	W	95644	203872	05/31/2023 09:03	05/31/2023 11:28
	95644-1-BKS	BKS	95644-1-BKS	W	95644	203872	05/31/2023 09:03	05/31/2023 09:03
	95644-1-BLK	BLK	95644-1-BLK	W	95644	203872	05/31/2023 09:03	05/31/2023 10:20
	GTA-TC-1 S	MS	23053018-001 S	W	95644	203872	05/31/2023 09:03	05/31/2023 12:36
	GTA-TC-1 SD	MSD	23053018-001 S	W	95644	203872	05/31/2023 09:03	05/31/2023 12:59

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 203876

Matrix: Water

Prep Method: SM4500CN-CPRE

Date Prep: 05/31/23

MB Sample Id: 95639-1-BLK

LCS Sample Id: 95639-1-BKS

LCSD Sample Id: 95639-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.01000	0.1000	0.09323	93	0.09966	100	83-117	7	20	mg/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 203876

Matrix: Surface Water

Prep Method: SM4500CN-CPRE

Date Prep: 05/31/23

Parent Sample Id: 23053018-001

MS Sample Id: 23053018-001 S

MSD Sample Id: 23053018-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.01000	0.1000	0.09619	96	0.1006	101	67-124	4	20	mg/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 203881

Matrix: Water

Prep Method: E200.8_PREP

Date Prep: 05/31/23

MB Sample Id: 95637-1-BLK

LCS Sample Id: 95637-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<5.000	25.00	24.24	97	85-115	ug/L	
Arsenic	<1.000	50.00	51.30	103	85-115	ug/L	
Beryllium	<1.000	50.00	46.15	92	85-115	ug/L	
Cadmium	<1.000	50.00	49.68	99	85-115	ug/L	
Chromium	<1.000	50.00	48.98	98	85-115	ug/L	
Copper	<1.000	50.00	49.54	99	85-115	ug/L	
Lead	<1.000	50.00	52.24	104	85-115	ug/L	
Mercury	<0.2000	1.000	1.114	111	85-115	ug/L	
Nickel	<1.000	50.00	49.14	98	85-115	ug/L	
Selenium	<1.000	50.00	52.36	105	85-115	ug/L	
Silver	<1.000	5.000	4.982	100	85-115	ug/L	
Thallium	<1.000	50.00	50.40	101	85-115	ug/L	
Zinc	<20.00	100	101.4	101	85-115	ug/L	

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: EPA 200.8 Dissolved

Seq Number: 203881

Parent Sample Id: 23053018-001

Matrix: Surface Water

MS Sample Id: 23053018-001 S

Prep Method: E200.8_PREP

Date Prep: 05/31/23

MSD Sample Id: 23053018-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Antimony	<5.000	25.00	25.01	100	25.24	101	70-130	1	25	ug/L	
Arsenic	<1.000	50.00	55.91	112	54.59	109	70-130	2	25	ug/L	
Beryllium	<1.000	50.00	49.01	98	50.75	102	70-130	3	25	ug/L	
Cadmium	<1.000	50.00	51.03	102	52.26	105	70-130	2	25	ug/L	
Chromium	<1.000	50.00	52.80	106	53.11	106	70-130	1	25	ug/L	
Copper	<1.000	50.00	51.04	102	50.70	101	70-130	1	25	ug/L	
Lead	<1.000	50.00	51.25	103	50.92	102	70-130	1	25	ug/L	
Mercury	<0.2000	1.000	1.098	110	1.110	111	70-130	1	25	ug/L	
Nickel	<1.000	50.00	51.71	103	50.13	100	70-130	3	25	ug/L	
Selenium	<1.000	50.00	56.71	113	56.14	112	70-130	1	25	ug/L	
Silver	<1.000	5.000	5.000	100	4.979	100	70-130	0	25	ug/L	
Thallium	<1.000	50.00	51.28	103	51.33	103	70-130	0	25	ug/L	
Zinc	<20.00	100	102.8	103	103.4	103	70-130	1	25	ug/L	

Analytical Method: EPA 300.0

Seq Number: 203893

MB Sample Id: 95634-1-BLK

Matrix: Water

LCS Sample Id: 95634-1-BKS

Prep Method: E300.0P

Date Prep: 05/31/23

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Fluoride	<0.2500	2.500	2.535	101	90-110	mg/L	

Project Name Quantum Frederick
PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203872

Matrix: Water

Prep Method: SW5030B

Date Prep: 05/31/23

MB Sample Id: 95644-1-BLK

LCS Sample Id: 95644-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<5.000	50.00	56.08	112	49-154	ug/L	
Benzene	<1.000	50.00	53.77	108	76-112	ug/L	
Bromochloromethane	<1.000	50.00	49.53	99	74-119	ug/L	
Bromodichloromethane	<1.000	50.00	56.59	113	78-117	ug/L	
Bromoform	<1.000	50.00	51.42	103	69-123	ug/L	
Bromomethane	<1.000	50.00	44.55	89	42-118	ug/L	
2-Butanone (MEK)	<5.000	50.00	56.81	114	55-136	ug/L	
Carbon Disulfide	<1.000	50.00	59.79	120	80-124	ug/L	
Carbon tetrachloride	<1.000	50.00	50.81	102	77-119	ug/L	
Chlorobenzene	<1.000	50.00	52.39	105	76-114	ug/L	
Chloroethane	<1.000	50.00	55.19	110	61-113	ug/L	
Chloroform	<1.000	50.00	53.27	107	75-113	ug/L	
Chloromethane	<1.000	50.00	52.55	105	41-148	ug/L	
Cyclohexane	<1.000	50.00	58.85	118	76-135	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	54.05	108	52-131	ug/L	
Dibromochloromethane	<1.000	50.00	52.13	104	79-121	ug/L	
1,2-Dibromoethane	<1.000	50.00	52.67	105	77-119	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.60	107	75-121	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	53.91	108	77-120	ug/L	
Dichlorodifluoromethane	<1.000	50.00	53.03	106	49-122	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	53.90	108	76-118	ug/L	
1,1-Dichloroethane	<1.000	50.00	57.23	114	75-118	ug/L	
1,2-Dichloroethane	<1.000	50.00	52.91	106	72-115	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	51.11	102	75-119	ug/L	
1,1-Dichloroethene	<1.000	50.00	47.73	95	74-119	ug/L	
1,2-Dichloropropane	<1.000	50.00	57.82	116	76-115	ug/L	H
cis-1,3-Dichloropropene	<1.000	50.00	55.26	111	83-122	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	48.87	98	76-118	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	51.35	103	73-121	ug/L	
Ethylbenzene	<1.000	50.00	55.02	110	78-118	ug/L	
2-Hexanone (MBK)	<5.000	50.00	62.95	126	55-136	ug/L	
Isopropylbenzene	<1.000	50.00	56.55	113	76-126	ug/L	
Methyl Acetate	<1.000	50.00	47.45	95	61-117	ug/L	
Methylcyclohexane	<1.000	50.00	52.31	105	82-126	ug/L	
Methylene chloride	<1.000	50.00	53.42	107	75-113	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	57.78	116	57-127	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	48.66	97	71-114	ug/L	
Naphthalene	<1.000	50.00	45.99	92	60-122	ug/L	
Styrene	<1.000	50.00	54.49	109	81-124	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	57.24	114	66-123	ug/L	
Tetrachloroethene	<1.000	50.00	48.59	97	76-123	ug/L	
Toluene	<1.000	50.00	51.73	103	77-112	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	47.25	95	73-129	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	47.65	95	73-130	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	49.72	99	79-118	ug/L	
Trichloroethene	<1.000	50.00	51.75	104	77-112	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.96	106	75-115	ug/L	
Trichlorofluoromethane	<1.000	50.00	47.67	95	74-125	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	48.33	97	77-123	ug/L	
1,2,4-Trimethylbenzene	<1.000	50.00	56.18	112	76-127	ug/L	
1,3,5-Trimethylbenzene	<1.000	50.00	55.80	112	76-126	ug/L	

Project Name: Quantum Frederick
PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203872

MB Sample Id: 95644-1-BLK

Matrix: Water

LCS Sample Id: 95644-1-BKS

Prep Method: SW5030B

Date Prep: 05/31/23

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Vinyl chloride	<1.000	50.00	60.96	122	53-151	ug/L	
m&p-Xylene	<2.000	100	107.2	107	79-121	ug/L	
o-Xylene	<1.000	50.00	52.78	106	78-122	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	114		106		88-120	%
Dibromofluoromethane	97		99		92-107	%
Toluene-D8	98		99		95-106	%

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203872

Parent Sample Id: 23053018-001

Matrix: Surface Water

MS Sample Id: 23053018-001 S

Prep Method: SW5030B

Date Prep: 05/31/23

MSD Sample Id: 23053018-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acetone	<5.000	50.00	27.93	56	26.35	53	32-96	6	25	ug/L	
Benzene	<1.000	50.00	52.96	106	48.39	97	73-114	9	25	ug/L	
Bromochloromethane	<1.000	50.00	47.67	95	44.30	89	70-114	7	25	ug/L	
Bromodichloromethane	<1.000	50.00	54.57	109	50.96	102	71-118	7	25	ug/L	
Bromoform	<1.000	50.00	47.35	95	45.21	90	59-127	5	25	ug/L	
Bromomethane	<1.000	50.00	40.53	81	38.81	78	26-131	4	25	ug/L	
2-Butanone (MEK)	<5.000	50.00	39.29	79	36.35	73	45-109	8	25	ug/L	
Carbon Disulfide	<1.000	50.00	58.42	117	52.30	105	71-130	11	25	ug/L	
Carbon tetrachloride	<1.000	50.00	48.90	98	44.95	90	74-119	8	25	ug/L	
Chlorobenzene	<1.000	50.00	50.23	100	46.05	92	73-115	9	25	ug/L	
Chloroethane	<1.000	50.00	54.77	110	49.09	98	60-124	11	25	ug/L	
Chloroform	<1.000	50.00	52.21	104	48.01	96	70-113	8	25	ug/L	
Chloromethane	<1.000	50.00	51.47	103	45.88	92	32-170	11	25	ug/L	
Cyclohexane	<1.000	50.00	58.35	117	52.15	104	64-144	11	25	ug/L	
1,2-Dibromo-3-chloropropane	<1.000	50.00	47.94	96	46.01	92	48-140	4	25	ug/L	
Dibromochloromethane	<1.000	50.00	48.90	98	46.41	93	73-120	5	25	ug/L	
1,2-Dibromoethane	<1.000	50.00	50.00	100	47.45	95	71-119	5	25	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	48.27	97	45.42	91	68-122	6	25	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	48.05	96	45.11	90	69-122	6	25	ug/L	
Dichlorodifluoromethane	<1.000	50.00	52.01	104	46.39	93	61-118	11	25	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.09	96	45.11	90	68-120	6	25	ug/L	
1,1-Dichloroethane	<1.000	50.00	56.11	112	51.53	103	68-122	9	25	ug/L	
1,2-Dichloroethane	<1.000	50.00	51.95	104	48.20	96	61-120	7	25	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	49.81	100	45.95	92	71-116	8	25	ug/L	
1,1-Dichloroethene	<1.000	50.00	46.59	93	42.45	85	69-120	9	25	ug/L	
1,2-Dichloropropane	<1.000	50.00	56.74	113	52.37	105	69-119	8	25	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	52.16	104	48.91	98	72-123	6	25	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	45.63	91	43.38	87	67-123	5	25	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	49.81	100	45.36	91	70-118	9	25	ug/L	
Ethylbenzene	<1.000	50.00	53.32	107	48.41	97	74-121	10	25	ug/L	
2-Hexanone (MBK)	<5.000	50.00	48.69	97	45.80	92	44-131	6	25	ug/L	
Isopropylbenzene	<1.000	50.00	51.88	104	47.98	96	68-131	8	25	ug/L	
Methyl Acetate	<1.000	50.00	43.75	88	42.78	86	55-117	2	25	ug/L	
Methylcyclohexane	<1.000	50.00	50.24	100	44.73	89	71-126	12	25	ug/L	
Methylene chloride	<1.000	50.00	51.85	104	48.06	96	72-114	8	25	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	53.78	108	51.31	103	49-133	5	25	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	45.91	92	44.00	88	67-112	4	25	ug/L	
Naphthalene	<1.000	50.00	41.51	83	39.98	80	53-128	4	25	ug/L	
Styrene	<1.000	50.00	52.24	104	48.17	96	75-126	8	25	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.61	105	49.89	100	61-125	5	25	ug/L	
Tetrachloroethene	<1.000	50.00	45.94	92	41.82	84	71-121	9	25	ug/L	
Toluene	<1.000	50.00	50.44	101	46.08	92	71-115	9	25	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	41.51	83	39.91	80	60-124	4	25	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	41.73	83	39.46	79	57-126	6	25	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	48.42	97	44.24	88	72-121	9	25	ug/L	
Trichloroethene	<1.000	50.00	50.18	100	45.54	91	72-115	10	25	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	51.63	103	48.20	96	70-114	7	25	ug/L	
Trichlorofluoromethane	<1.000	50.00	46.95	94	41.81	84	66-130	12	25	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	46.07	92	41.66	83	71-121	10	25	ug/L	
1,2,4-Trimethylbenzene	<1.000	50.00	50.95	102	47.10	94	66-133	8	25	ug/L	
1,3,5-Trimethylbenzene	<1.000	50.00	50.76	102	46.84	94	66-133	8	25	ug/L	

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203872

Parent Sample Id: 23053018-001

Matrix: Surface Water

MS Sample Id: 23053018-001 S

Prep Method: SW5030B

Date Prep: 05/31/23

MSD Sample Id: 23053018-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Vinyl chloride	<1.000	50.00	55.84	112	50.04	100	40-160	11	25	ug/L	
m&p-Xylene	<2.000	100	102.5	103	93.73	94	73-125	9	25	ug/L	
o-Xylene	<1.000	50.00	50.93	102	46.55	93	71-126	9	25	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	104		104		88-120	%
Dibromofluoromethane	99		100		92-107	%
Toluene-D8	100		100		95-106	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 203876

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 05/31/23 12:52

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	98.67	99	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 203876

Matrix: Water

CCV Sample Id: CCV-02

Analyzed Date: 05/31/23 13:16

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	92.83	93	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 203608

Matrix: Water

Parent Sample Id: ICV

ICV Sample Id: ICV

Analyzed Date: 05/18/23 15:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Cyanide, Total	100	100.5	101	90-110	ug/L	

Analytical Method: SM 4500-CN C,E -2016

Seq Number: 203876

Matrix: Water

Parent Sample Id: MRL

MRL Sample Id: MRL

Analyzed Date: 05/31/23 13:02

Parameter	Spike Amount	MRL Result	MRL %Rec	Limits	Units	Flag
Cyanide, Total	10.00	10.90	109	50-150	ug/L	

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: EPA 200.8 Dissolved

Seq Number: 203881

Matrix: Water

CCV Sample Id: CCV 1

Analyzed Date: 05/31/23 13:33

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	54.89	110	85-115	ug/L	
Arsenic	100	107.5	108	85-115	ug/L	
Beryllium	100	106.5	107	85-115	ug/L	
Cadmium	100	104.9	105	85-115	ug/L	
Chromium	100	105.9	106	85-115	ug/L	
Copper	100	102.8	103	85-115	ug/L	
Lead	100	107.5	108	85-115	ug/L	
Mercury	1.000	1.049	105	85-115	ug/L	
Nickel	100	102.5	103	85-115	ug/L	
Selenium	100	106.1	106	85-115	ug/L	
Silver	10.00	10.40	104	85-115	ug/L	
Thallium	100	103.2	103	85-115	ug/L	
Zinc	200	212.9	106	85-115	ug/L	

Analytical Method: EPA 200.8 Dissolved

Seq Number: 203881

Matrix: Water

Parent Sample Id: ICV 1

ICV Sample Id: ICV 1

Analyzed Date: 05/31/23 11:10

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	25.00	24.94	100	90-110	ug/L	
Arsenic	50.00	53.33	107	90-110	ug/L	
Beryllium	50.00	50.60	101	90-110	ug/L	
Cadmium	50.00	51.75	104	90-110	ug/L	
Chromium	50.00	51.63	103	90-110	ug/L	
Copper	50.00	51.46	103	90-110	ug/L	
Lead	50.00	53.78	108	90-110	ug/L	
Mercury	1.000	1.120	112	90-110	ug/L	X
Nickel	50.00	50.74	101	90-110	ug/L	
Selenium	50.00	52.96	106	90-110	ug/L	
Silver	5.000	5.261	105	90-110	ug/L	
Thallium	50.00	51.56	103	90-110	ug/L	
Zinc	100	105.5	106	90-110	ug/L	

Analytical Method: EPA 300.0

Seq Number: 203893

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 05/31/23 10:28

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.622	105	90-110	mg/L	

QC Summary

Project Name Quantum Frederick
 PSS Project No.: 23053018

Analytical Method: EPA 300.0

Seq Number: 203893

Matrix: Water

CCV Sample Id: CCV-02

Analyzed Date: 05/31/23 14:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.480	99	90-110	mg/L	

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203872

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 05/31/23 09:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	50.00	56.08	112	80-120	ug/L	
Benzene	50.00	53.77	108	80-120	ug/L	
Bromochloromethane	50.00	49.53	99	80-120	ug/L	
Bromodichloromethane	50.00	56.59	113	80-120	ug/L	
Bromoform	50.00	51.42	103	80-120	ug/L	
Bromomethane	50.00	44.55	89	80-120	ug/L	
2-Butanone (MEK)	50.00	56.81	114	80-120	ug/L	
Carbon Disulfide	50.00	59.79	120	80-120	ug/L	
Carbon tetrachloride	50.00	50.81	102	80-120	ug/L	
Chlorobenzene	50.00	52.39	105	80-120	ug/L	
Chloroethane	50.00	55.19	110	80-120	ug/L	
Chloroform	50.00	53.27	107	80-120	ug/L	
Chloromethane	50.00	52.55	105	80-120	ug/L	
Cyclohexane	50.00	58.85	118	80-120	ug/L	
1,2-Dibromo-3-chloropropane	50.00	54.05	108	80-120	ug/L	
Dibromochloromethane	50.00	52.13	104	80-120	ug/L	
1,2-Dibromoethane	50.00	52.67	105	80-120	ug/L	
1,2-Dichlorobenzene	50.00	53.60	107	80-120	ug/L	
1,3-Dichlorobenzene	50.00	53.91	108	80-120	ug/L	
Dichlorodifluoromethane	50.00	53.03	106	80-120	ug/L	
1,4-Dichlorobenzene	50.00	53.90	108	80-120	ug/L	
1,1-Dichloroethane	50.00	57.23	114	80-120	ug/L	
1,2-Dichloroethane	50.00	52.91	106	80-120	ug/L	
cis-1,2-Dichloroethene	50.00	51.11	102	80-120	ug/L	
1,1-Dichloroethene	50.00	47.73	95	80-120	ug/L	
1,2-Dichloropropane	50.00	57.82	116	80-120	ug/L	
cis-1,3-Dichloropropene	50.00	55.26	111	80-120	ug/L	
trans-1,3-Dichloropropene	50.00	48.87	98	80-120	ug/L	
trans-1,2-Dichloroethene	50.00	51.35	103	80-120	ug/L	
Ethylbenzene	50.00	55.02	110	80-120	ug/L	
2-Hexanone (MBK)	50.00	62.95	126	80-120	ug/L	X
Isopropylbenzene	50.00	56.55	113	80-120	ug/L	
Methyl Acetate	50.00	47.45	95	80-120	ug/L	
Methylcyclohexane	50.00	52.31	105	80-120	ug/L	
Methylene chloride	50.00	53.42	107	80-120	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	57.78	116	80-120	ug/L	
Methyl-t-Butyl Ether	50.00	48.66	97	80-120	ug/L	
Naphthalene	50.00	45.99	92	80-120	ug/L	
Styrene	50.00	54.49	109	80-120	ug/L	
1,1,2,2-Tetrachloroethane	50.00	57.24	114	80-120	ug/L	
Tetrachloroethene	50.00	48.59	97	80-120	ug/L	
Toluene	50.00	51.73	103	80-120	ug/L	
1,2,3-Trichlorobenzene	50.00	47.25	95	80-120	ug/L	
1,2,4-Trichlorobenzene	50.00	47.65	95	80-120	ug/L	
1,1,1-Trichloroethane	50.00	49.72	99	80-120	ug/L	
Trichloroethene	50.00	51.75	104	80-120	ug/L	
1,1,2-Trichloroethane	50.00	52.96	106	80-120	ug/L	
Trichlorofluoromethane	50.00	47.67	95	80-120	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	48.33	97	80-120	ug/L	
1,2,4-Trimethylbenzene	50.00	56.18	112	80-120	ug/L	
1,3,5-Trimethylbenzene	50.00	55.80	112	80-120	ug/L	

Project Name Quantum Frederick
PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203872

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 05/31/23 09:03

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	60.96	122	80-120	ug/L	X
m&p-Xylene	100	107.2	107	80-120	ug/L	
o-Xylene	50.00	52.78	106	80-120	ug/L	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	106	80-120	%	
Dibromofluoromethane	99	80-120	%	
Toluene-D8	99	80-120	%	

Project Name Quantum Frederick

PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203365

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 05/10/23 12:41

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	50.00	44.92	90	70-130	ug/L	
Benzene	50.00	47.90	96	70-130	ug/L	
Bromochloromethane	50.00	46.91	94	70-130	ug/L	
Bromodichloromethane	50.00	49.95	100	70-130	ug/L	
Bromoform	50.00	45.02	90	70-130	ug/L	
Bromomethane	50.00	46.46	93	70-130	ug/L	
2-Butanone (MEK)	50.00	45.39	91	70-130	ug/L	
Carbon Disulfide	50.00	49.58	99	70-130	ug/L	
Carbon tetrachloride	50.00	48.79	98	70-130	ug/L	
Chlorobenzene	50.00	47.96	96	70-130	ug/L	
Chloroethane	50.00	47.23	94	70-130	ug/L	
Chloroform	50.00	47.86	96	70-130	ug/L	
Chloromethane	50.00	47.85	96	70-130	ug/L	
Cyclohexane	50.00	48.54	97	70-130	ug/L	
1,2-Dibromo-3-chloropropane	50.00	44.59	89	70-130	ug/L	
Dibromochloromethane	50.00	46.12	92	70-130	ug/L	
1,2-Dibromoethane	50.00	47.99	96	70-130	ug/L	
1,2-Dichlorobenzene	50.00	47.36	95	70-130	ug/L	
1,3-Dichlorobenzene	50.00	47.53	95	70-130	ug/L	
Dichlorodifluoromethane	50.00	42.92	86	70-130	ug/L	
1,4-Dichlorobenzene	50.00	47.56	95	70-130	ug/L	
1,1-Dichloroethane	50.00	48.31	97	70-130	ug/L	
1,2-Dichloroethane	50.00	47.38	95	70-130	ug/L	
cis-1,2-Dichloroethene	50.00	47.15	94	70-130	ug/L	
1,1-Dichloroethene	50.00	47.17	94	70-130	ug/L	
1,2-Dichloropropane	50.00	48.24	96	70-130	ug/L	
cis-1,3-Dichloropropene	50.00	50.40	101	70-130	ug/L	
trans-1,3-Dichloropropene	50.00	46.31	93	70-130	ug/L	
trans-1,2-Dichloroethene	50.00	46.78	94	70-130	ug/L	
Ethylbenzene	50.00	49.23	98	70-130	ug/L	
2-Hexanone (MBK)	50.00	47.16	94	70-130	ug/L	
Isopropylbenzene	50.00	49.22	98	70-130	ug/L	
Methyl Acetate	50.00	44.65	89	70-130	ug/L	
Methylcyclohexane	50.00	49.09	98	70-130	ug/L	
Methylene chloride	50.00	46.97	94	70-130	ug/L	
4-Methyl-2-Pentanone (MIBK)	50.00	46.44	93	70-130	ug/L	
Methyl-t-Butyl Ether	50.00	46.61	93	70-130	ug/L	
Naphthalene	50.00	46.34	93	70-130	ug/L	
Styrene	50.00	50.11	100	70-130	ug/L	
1,1,2,2-Tetrachloroethane	50.00	46.51	93	70-130	ug/L	
Tetrachloroethene	50.00	47.08	94	70-130	ug/L	
Toluene	50.00	47.80	96	70-130	ug/L	
1,2,3-Trichlorobenzene	50.00	45.40	91	70-130	ug/L	
1,2,4-Trichlorobenzene	50.00	46.02	92	70-130	ug/L	
1,1,1-Trichloroethane	50.00	48.14	96	70-130	ug/L	
Trichloroethene	50.00	47.39	95	70-130	ug/L	
1,1,2-Trichloroethane	50.00	47.10	94	70-130	ug/L	
Trichlorofluoromethane	50.00	47.72	95	70-130	ug/L	
1,1,2-Trichlorotrifluoroethane	50.00	47.53	95	70-130	ug/L	
1,2,4-Trimethylbenzene	50.00	49.21	98	70-130	ug/L	
1,3,5-Trimethylbenzene	50.00	49.04	98	70-130	ug/L	

Project Name Quantum Frederick
PSS Project No.: 23053018

Analytical Method: SW-846 8260 D

Seq Number: 203365

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 05/10/23 12:41

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Vinyl chloride	50.00	39.90	80	70-130	ug/L	
m&p-Xylene	100	98.57	99	70-130	ug/L	
o-Xylene	50.00	48.32	97	70-130	ug/L	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	101	70-130	%	
Dibromofluoromethane	99	70-130	%	
Toluene-D8	100	70-130	%	

X = Recovery outside of QC Criteria

**PHASE
SEPARATION
SCIENCE**

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: GTA		OFFICE LOCATION: Baltimore			PSS Work Order #: 23053018				PAGE ____ OF ____										
BILL TO (if different):		PHONE #: 301-775-6596			Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe														
CONTACT: Colleen McMullen		EMAIL: cmcmullen@gtaeng.com			# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes								Preservative Codes				
PROJECT NAME: Quantum Frederick		PROJECT #: 31222314					Analysis/Method Required ③ <i>VOCs</i> <i>Total Cyanide</i> <i>Fluoride</i> <i>PP Metals - Discovered</i>												
SITE LOCATION: Frederick, MD		P.O. #: 31222314																	
SAMPLER(S): CMM		DW CERT #:																	
② PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes															
1	GTA-TC-1	5/30/23	10:30	SW	6	G	X	X	X	X									Filter for Metals
2	GTA-TC-2	5/30/23	12:15	SW	6	G	X	X	X	X									" "
3	GTA-TC-3	5/30/23	13:00	SW	6	G	X	X	X	X									" "
⑤ Relinquished By: (1)		Date	Time	Received By:	Requested TAT (One TAT per COC)				Ice Present:										
<i>Bumiller</i>		5/30/23	15:52	<i>Ru</i>	<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input type="checkbox"/> Other				Custody Seal: <i>Ass</i> # Coolers: <i>1</i> Temp: <i>8.5 - 7.1°C</i> Shipping Carrier: <i>Chert</i>										
Relinquished By: (2)		Date	Time	Received By:	STATE RESULTS REPORTED TO:														
					<input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER														
Relinquished By: (3)		Date	Time	Received By:	COMPLIANCE?		Special Instructions:												
					<input type="checkbox"/> DW <input type="checkbox"/> WW		<i>Tier II Pricing</i> <i>Send results to kplacek@gtaeng.com</i>												
Relinquished By: (4)		Date	Time	Received By:	EDD FORMAT TYPE														

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Quantum Frederick
 PSS Project No.: 23053018

Client Name GTA - Baltimore
Disposal Date 07/04/2023

Received By Tyler Enwright
Date Received 05/30/2023 03:52:00 PM
Delivered By Client
Tracking No Not Applicable
Logged In By Tyler Enwright

Shipping Container(s)

No. of Coolers 1

Custody Seal(s) Intact? N/A
 Seal(s) Signed / Dated? N/A

Ice Present
 Temp (deg C) 9.1
 Temp Blank Present No

Documentation

COC agrees with sample labels? Yes
 Chain of Custody Yes

Sampler Name Colleen McMullen
 MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes
 Intact? Yes
 Labeled and Labels Legible? Yes

Custody Seal(s) Intact? Not Applicable
 Seal(s) Signed / Dated Not Applicable

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 3
 Total No. of Containers Received 18

Preservation

Total Metals (pH<2) N/A
 Dissolved Metals, filtered within 15 minutes of collection (pH<2) No
 Orthophosphorus, filtered within 15 minutes of collection N/A
 Cyanides (pH>12) Yes
 Sulfide (pH>9) N/A
 TOC, DOC (field filtered), COD, Phenols (pH<2) N/A
 TOX, TKN, NH3, Total Phos (pH<2) N/A
 VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) Yes
 Do VOA vials have zero headspace? Yes
 624 VOC (Rcvd at least one unpreserved VOA vial) N/A
 524 VOC (Rcvd with trip blanks) (pH<2) N/A

Sample Receipt Checklist


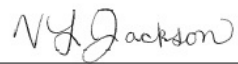
Project Name: Quantum Frederick
 PSS Project No.: 23053018

Client Name	GTA - Baltimore	Received By	Tyler Enwright
Disposal Date	07/04/2023	Date Received	05/30/2023 03:52:00 PM
		Delivered By	Client
		Tracking No	Not Applicable
		Logged In By	Tyler Enwright

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Sample aliquots for dissolved metals were not field filtered and were received unpreserved; as such, associated sample results are not suitable for compliance under the Clean Water Act and/or Safe Drinking Water Act.

Samples Inspected/Checklist Completed By:		Date:	05/30/2023
	_____ Tyler Enwright		_____
PM Review and Approval:		Date:	05/30/2023
	_____ Lynn Jackson		_____

Project Name: Quantum Frederick
PSS Project No.: 23053017

May 31, 2023

Colleen McMullen
GTA - Baltimore
1414 Key Highway, Ste. 201P
Baltimore, MD 21230



Reference: PSS Project No: **23053017**
Project Name: Quantum Frederick
Project Location: Frederick, MD
Project ID.: 31222314

Dear Colleen McMullen:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **23053017**.


All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on July 4, 2023, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,


Dan Prucnal

Laboratory Manager



Explanation of Qualifiers

Project Name: Quantum Frederick

PSS Project No.: 23053017

Project ID: 31222314

The following samples were received under chain of custody by Phase Separation Science (PSS) on 05/30/2023 at 03:52 pm

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
23053017-001	GTA-TC-1	SOIL	05/30/23 10:30
23053017-002	GTA-TC-2	SOIL	05/30/23 12:15
23053017-003	GTA-TC-3	SOIL	05/30/23 13:00

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminants, and part 141.3, for the secondary drinking water contaminants.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- C** Results Pending Final Confirmation.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- Fail** The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
- J** The target analyte was positively identified below the reporting limit but greater than the MDL.
- MDL** This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is the minimum result, which can be reliably discriminated from a blank with a predetermined confidence level. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
- ND** Not Detected at or above the reporting limit.
- RL** PSS Reporting Limit.
- U** Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053017

Sample ID: GTA-TC-1 **Date/Time Sampled: 05/30/2023 10:30** **PSS Sample ID: 23053017-001**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 74.8**

Inorganic Anions Analytical Method: EPA 300.0 Preparation Method: E300.OP

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	ND	mg/kg	3.4		1	05/31/23	05/31/23 13:32	1053

MDE PP Metals Analytical Method: SW-846 6020 B Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	3.2		1	05/31/23	05/31/23 14:03	1064
Arsenic	4.6	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Beryllium	0.87	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Cadmium	ND	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Chromium	34	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Copper	11	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Lead	17	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Mercury	ND	mg/kg	0.13		1	05/31/23	05/31/23 14:03	1064
Nickel	22	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Selenium	ND	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Silver	ND	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Thallium	ND	mg/kg	0.64		1	05/31/23	05/31/23 14:03	1064
Zinc	55	mg/kg	13		1	05/31/23	05/31/23 14:03	1064

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.027		1	05/31/23	05/31/23 12:22	1045
Benzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Bromochloromethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Bromodichloromethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Bromoform	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Bromomethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
2-Butanone (MEK)	ND	mg/kg	0.0068		1	05/31/23	05/31/23 12:22	1045
Carbon Disulfide	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Carbon tetrachloride	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053017

Sample ID: GTA-TC-1 **Date/Time Sampled: 05/30/2023 10:30** **PSS Sample ID: 23053017-001**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 74.8**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chlorobenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Chloroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Chloroform	ND	mg/kg	0.0068		1	05/31/23	05/31/23 12:22	1045
Chloromethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Cyclohexane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Dibromochloromethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2-Dibromoethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Dichlorodifluoromethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,1-Dichloroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2-Dichloroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,1-Dichloroethene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2-Dichloropropane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
trans-1,2-Dichloroethene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Ethylbenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
2-Hexanone (MBK)	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Isopropylbenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Methyl Acetate	ND	mg/kg	0.034		1	05/31/23	05/31/23 12:22	1045
Methylcyclohexane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Methylene chloride	ND	mg/kg	0.0068		1	05/31/23	05/31/23 12:22	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Naphthalene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Styrene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Tetrachloroethene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Toluene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045

Certificate of Analysis

Project Name: Quantum Frederick
PSS Project No.: 23053017

Sample ID: GTA-TC-1 **Date/Time Sampled: 05/30/2023 10:30** **PSS Sample ID: 23053017-001**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 74.8**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,1,1-Trichloroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Trichloroethene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Trichlorofluoromethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,2,4-Trimethylbenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Vinyl chloride	ND	mg/kg	0.0068		1	05/31/23	05/31/23 12:22	1045
m&p-Xylene	ND	mg/kg	0.0027		1	05/31/23	05/31/23 12:22	1045
o-Xylene	ND	mg/kg	0.0014		1	05/31/23	05/31/23 12:22	1045
Surrogate(s)	Recovery		Limits					
4-Bromofluorobenzene	106 %		89-111		1	05/31/23	05/31/23 12:22	1045
Dibromofluoromethane	93 %		91-108		1	05/31/23	05/31/23 12:22	1045
Toluene-D8	98 %		93-104		1	05/31/23	05/31/23 12:22	1045

Cyanide Analytical Method: SW-846 9014 Preparation Method: SW9010C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	0.10	mg/kg	0.076		1	05/31/23	05/31/23 13:26	1053

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053017

Sample ID: GTA-TC-2 **Date/Time Sampled: 05/30/2023 12:15** **PSS Sample ID: 23053017-002**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 80.6**

Inorganic Anions Analytical Method: EPA 300.0 Preparation Method: E300.OP

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	ND	mg/kg	3.1		1	05/31/23	05/31/23 13:55	1053

MDE PP Metals Analytical Method: SW-846 6020 B Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	2.5		1	05/31/23	05/31/23 14:43	1064
Arsenic	7.8	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Beryllium	1.0	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Cadmium	ND	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Chromium	30	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Copper	12	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Lead	13	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Mercury	ND	mg/kg	0.10		1	05/31/23	05/31/23 14:43	1064
Nickel	19	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Selenium	ND	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Silver	ND	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Thallium	ND	mg/kg	0.51		1	05/31/23	05/31/23 14:43	1064
Zinc	54	mg/kg	10		1	05/31/23	05/31/23 14:43	1064

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.025		1	05/31/23	05/31/23 12:44	1045
Benzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Bromochloromethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Bromodichloromethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Bromoform	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Bromomethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
2-Butanone (MEK)	ND	mg/kg	0.0061		1	05/31/23	05/31/23 12:44	1045
Carbon Disulfide	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Carbon tetrachloride	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045

Certificate of Analysis

Project Name: Quantum Frederick
PSS Project No.: 23053017

Sample ID: GTA-TC-2 **Date/Time Sampled: 05/30/2023 12:15** **PSS Sample ID: 23053017-002**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 80.6**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chlorobenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Chloroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Chloroform	ND	mg/kg	0.0061		1	05/31/23	05/31/23 12:44	1045
Chloromethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Cyclohexane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Dibromochloromethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2-Dibromoethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Dichlorodifluoromethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,1-Dichloroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2-Dichloroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,1-Dichloroethene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2-Dichloropropane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
trans-1,2-Dichloroethene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Ethylbenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
2-Hexanone (MBK)	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Isopropylbenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Methyl Acetate	ND	mg/kg	0.031		1	05/31/23	05/31/23 12:44	1045
Methylcyclohexane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Methylene chloride	ND	mg/kg	0.0061		1	05/31/23	05/31/23 12:44	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Naphthalene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Styrene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Tetrachloroethene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Toluene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045

Certificate of Analysis

Project Name: Quantum Frederick
PSS Project No.: 23053017

Sample ID: GTA-TC-2 **Date/Time Sampled: 05/30/2023 12:15** **PSS Sample ID: 23053017-002**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 80.6**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,1,1-Trichloroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Trichloroethene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Trichlorofluoromethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,2,4-Trimethylbenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Vinyl chloride	ND	mg/kg	0.0061		1	05/31/23	05/31/23 12:44	1045
m&p-Xylene	ND	mg/kg	0.0025		1	05/31/23	05/31/23 12:44	1045
o-Xylene	ND	mg/kg	0.0012		1	05/31/23	05/31/23 12:44	1045
Surrogate(s)	Recovery		Limits					
4-Bromofluorobenzene	107	%	89-111		1	05/31/23	05/31/23 12:44	1045
Dibromofluoromethane	94	%	91-108		1	05/31/23	05/31/23 12:44	1045
Toluene-D8	96	%	93-104		1	05/31/23	05/31/23 12:44	1045

Cyanide Analytical Method: SW-846 9014 Preparation Method: SW9010C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	0.10	mg/kg	0.078		1	05/31/23	05/31/23 13:32	1053

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053017

Sample ID: GTA-TC-3 **Date/Time Sampled: 05/30/2023 13:00** **PSS Sample ID: 23053017-003**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 74.7**
 Inorganic Anions Analytical Method: EPA 300.0 Preparation Method: E300.OP

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Fluoride	3.5	mg/kg	3.4		1	05/31/23	05/31/23 14:18	1053

MDE PP Metals Analytical Method: SW-846 6020 B Preparation Method: SW3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	3.1		1	05/31/23	05/31/23 14:48	1064
Arsenic	2.9	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Beryllium	ND	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Cadmium	ND	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Chromium	18	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Copper	6.2	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Lead	11	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Mercury	ND	mg/kg	0.13		1	05/31/23	05/31/23 14:48	1064
Nickel	12	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Selenium	ND	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Silver	ND	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Thallium	ND	mg/kg	0.63		1	05/31/23	05/31/23 14:48	1064
Zinc	33	mg/kg	13		1	05/31/23	05/31/23 14:48	1064

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	mg/kg	0.027		1	05/31/23	05/31/23 13:06	1045
Benzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Bromochloromethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Bromodichloromethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Bromoform	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Bromomethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
2-Butanone (MEK)	ND	mg/kg	0.0067		1	05/31/23	05/31/23 13:06	1045
Carbon Disulfide	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Carbon tetrachloride	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045

Certificate of Analysis

Project Name: Quantum Frederick
PSS Project No.: 23053017

Sample ID: GTA-TC-3 **Date/Time Sampled: 05/30/2023 13:00** **PSS Sample ID: 23053017-003**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 74.7**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chlorobenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Chloroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Chloroform	ND	mg/kg	0.0067		1	05/31/23	05/31/23 13:06	1045
Chloromethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Cyclohexane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Dibromochloromethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2-Dibromoethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2-Dichlorobenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,3-Dichlorobenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,4-Dichlorobenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Dichlorodifluoromethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,1-Dichloroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2-Dichloroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,1-Dichloroethene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2-Dichloropropane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
cis-1,2-Dichloroethene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
cis-1,3-Dichloropropene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
trans-1,2-Dichloroethene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
trans-1,3-Dichloropropene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Ethylbenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
2-Hexanone (MBK)	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Isopropylbenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Methyl Acetate	ND	mg/kg	0.034		1	05/31/23	05/31/23 13:06	1045
Methylcyclohexane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Methylene chloride	ND	mg/kg	0.0067		1	05/31/23	05/31/23 13:06	1045
4-Methyl-2-Pentanone (MIBK)	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Methyl-t-Butyl Ether	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Naphthalene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Styrene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Tetrachloroethene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Toluene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2,3-Trichlorobenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2,4-Trichlorobenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045

Certificate of Analysis

Project Name: Quantum Frederick
 PSS Project No.: 23053017

Sample ID: GTA-TC-3 **Date/Time Sampled: 05/30/2023 13:00** **PSS Sample ID: 23053017-003**
Matrix: SOIL **Date/Time Received: 05/30/2023 15:52** **% Solids SM2540G-11: 74.7**

MDE TCL Volatile Organic Compounds Analytical Method: SW-846 8260 D Preparation Method: SW5030

Qualifier(s): See Batch 203883 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,1,1-Trichloroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,1,2-Trichloroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Trichloroethene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Trichlorofluoromethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,1,2-Trichlorotrifluoroethane	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,2,4-Trimethylbenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
1,3,5-Trimethylbenzene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Vinyl chloride	ND	mg/kg	0.0067		1	05/31/23	05/31/23 13:06	1045
m&p-Xylene	ND	mg/kg	0.0027		1	05/31/23	05/31/23 13:06	1045
o-Xylene	ND	mg/kg	0.0013		1	05/31/23	05/31/23 13:06	1045
Surrogate(s)	Recovery		Limits					
4-Bromofluorobenzene	106	%	89-111		1	05/31/23	05/31/23 13:06	1045
Dibromofluoromethane	100	%	91-108		1	05/31/23	05/31/23 13:06	1045
Toluene-D8	103	%	93-104		1	05/31/23	05/31/23 13:06	1045

Cyanide Analytical Method: SW-846 9014 Preparation Method: SW9010C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	0.56	mg/kg	0.080		1	05/31/23	05/31/23 13:34	1053

Case Narrative

Project Name: Quantum Frederick

PSS Project No.: 23053017

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

MDE TCL Volatile Organic Compounds

Batch: 203883

Method exceedance: Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) exceedances identified; see QC summary.

Continuing calibration verification standard (CCV) meets method criteria in that more than 80% of analytes are within acceptance limits, see QC summary.

Matrix spike duplicate (MSD) not uploaded due to poor purge, LCSD provided for precision data; see QC summary.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

Prep Method(s): SW-846 5030

Lab Chronology

Project Name: Quantum Frederick
PSS Project No.: 23053017

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
EPA 300.0	GTA-TC-1	Initial	23053017-001	S	95635	203894	05/31/2023 10:03	05/31/2023 13:32
	GTA-TC-2	Initial	23053017-002	S	95635	203894	05/31/2023 10:03	05/31/2023 13:55
	GTA-TC-3	Initial	23053017-003	S	95635	203894	05/31/2023 10:03	05/31/2023 14:18
	95635-1-BKS	BKS	95635-1-BKS	S	95635	203894	05/31/2023 10:03	05/31/2023 13:09
	95635-1-BLK	BLK	95635-1-BLK	S	95635	203894	05/31/2023 10:03	05/31/2023 12:46
SM2540G	GTA-TC-1	Initial	23053017-001	S	203840	203840	05/30/2023 14:58	05/30/2023 14:58
	GTA-TC-2	Initial	23053017-002	S	203840	203840	05/30/2023 14:58	05/30/2023 14:58
	GTA-TC-3	Initial	23053017-003	S	203840	203840	05/30/2023 14:58	05/30/2023 14:58
	203840-1-BLK	BLK	203840-1-BLK	S	203840	203840	05/30/2023 14:58	05/30/2023 14:58
	WC-1 D	MD	23052417-002 D	S	203840	203840	05/30/2023 14:58	05/30/2023 14:58
	BW-B17-1-2 D	MD	23052513-005 D	S	203840	203840	05/30/2023 14:58	05/30/2023 14:58
SW-846 6020 B	GTA-TC-1	Initial	23053017-001	S	95629	203888	05/31/2023 09:10	05/31/2023 14:03
	GTA-TC-2	Initial	23053017-002	S	95629	203888	05/31/2023 09:10	05/31/2023 14:43
	GTA-TC-3	Initial	23053017-003	S	95629	203888	05/31/2023 09:10	05/31/2023 14:48
	95629-1-BKS	BKS	95629-1-BKS	S	95629	203888	05/31/2023 09:10	05/31/2023 13:58
	95629-1-BLK	BLK	95629-1-BLK	S	95629	203888	05/31/2023 09:10	05/31/2023 13:53
	GTA-TC-1 S	MS	23053017-001 S	S	95629	203888	05/31/2023 09:10	05/31/2023 14:08
	GTA-TC-1 SD	MSD	23053017-001 S	S	95629	203888	05/31/2023 09:10	05/31/2023 14:13
SW-846 8260 D	GTA-TC-1	Initial	23053017-001	S	95647	203883	05/31/2023 09:01	05/31/2023 12:22
	GTA-TC-2	Initial	23053017-002	S	95647	203883	05/31/2023 09:01	05/31/2023 12:44
	GTA-TC-3	Initial	23053017-003	S	95647	203883	05/31/2023 09:01	05/31/2023 13:06
	95647-1-BKS	BKS	95647-1-BKS	S	95647	203883	05/31/2023 09:01	05/31/2023 09:23
	95647-1-BLK	BLK	95647-1-BLK	S	95647	203883	05/31/2023 09:01	05/31/2023 11:59
	95647-1-BSD	BSD	95647-1-BSD	S	95647	203883	05/31/2023 09:01	05/31/2023 09:45
	GTA-TC-1 S	MS	23053017-001 S	S	95647	203883	05/31/2023 09:01	05/31/2023 10:30
SW-846 9014	GTA-TC-1	Initial	23053017-001	S	95640	203877	05/31/2023 11:27	05/31/2023 13:26
	GTA-TC-2	Initial	23053017-002	S	95640	203877	05/31/2023 11:27	05/31/2023 13:32
	GTA-TC-3	Initial	23053017-003	S	95640	203877	05/31/2023 11:27	05/31/2023 13:34
	95640-1-BKS	BKS	95640-1-BKS	S	95640	203877	05/31/2023 11:27	05/31/2023 13:22
	95640-1-BLK	BLK	95640-1-BLK	S	95640	203877	05/31/2023 11:27	05/31/2023 13:20
	95640-1-BSD	BSD	95640-1-BSD	S	95640	203877	05/31/2023 11:27	05/31/2023 13:24
	23053017-001 S	MS	23053017-001 S	S	95640	203877	05/31/2023 11:27	05/31/2023 13:28
	23053017-001 SD	MSD	23053017-001 S	S	95640	203877	05/31/2023 11:27	05/31/2023 13:30

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 9014

Seq Number: 203877 Matrix: Solid Prep Method: SW9010C
Date Prep: 05/31/23
MB Sample Id: 95640-1-BLK LCS Sample Id: 95640-1-BKS LCSD Sample Id: 95640-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	<0.06122	0.5660	0.5564	98	0.6402	103	87-115	14	25	mg/kg	

Analytical Method: SW-846 9014

Seq Number: 203877 Matrix: Soil Prep Method: SW9010C
Date Prep: 05/31/23
Parent Sample Id: 23053017-001 MS Sample Id: 23053017-001 S MSD Sample Id: 23053017-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Cyanide, Total	0.1020	0.8356	0.9307	99	0.9142	96	68-118	2	25	mg/kg	

Analytical Method: EPA 300.0

Seq Number: 203894 Matrix: Solid Prep Method: E300.0P
Date Prep: 05/31/23
MB Sample Id: 95635-1-BLK LCS Sample Id: 95635-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Fluoride	<2.604	25.64	26.77	104	90-110	mg/kg	

Analytical Method: SW-846 6020 B

Seq Number: 203888 Matrix: Solid Prep Method: SW3050B
Date Prep: 05/31/23
MB Sample Id: 95629-1-BLK LCS Sample Id: 95629-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<2.226	12.38	12.02	97	80-120	mg/kg	
Arsenic	<0.4453	24.76	24.19	98	80-120	mg/kg	
Beryllium	<0.4453	24.76	24.09	97	80-120	mg/kg	
Cadmium	<0.4453	24.76	23.81	96	80-120	mg/kg	
Chromium	<0.4453	24.76	24.12	97	80-120	mg/kg	
Copper	<0.4453	24.76	25.59	103	80-120	mg/kg	
Lead	<0.4453	24.76	24.80	100	80-120	mg/kg	
Mercury	<0.08906	0.4952	0.4799	97	80-120	mg/kg	
Nickel	<0.4453	24.76	23.82	96	80-120	mg/kg	
Selenium	<0.4453	24.76	24.87	100	80-120	mg/kg	
Silver	<0.4453	2.476	2.403	97	80-120	mg/kg	
Thallium	<0.4453	24.76	23.63	95	80-120	mg/kg	
Zinc	<8.906	49.52	46.52	94	80-120	mg/kg	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 6020 B

Seq Number: 203888

Parent Sample Id: 23053017-001

Matrix: Soil

MS Sample Id: 23053017-001 S

Prep Method: SW3050B

Date Prep: 05/31/23

MSD Sample Id: 23053017-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Antimony	<3.209	13.78	10.79	78	11.04	79	75-125	2	30	mg/kg	
Arsenic	4.569	27.56	30.82	95	32.23	99	75-125	4	30	mg/kg	
Beryllium	0.8683	27.56	27.02	95	28.06	97	75-125	4	30	mg/kg	
Cadmium	<0.6418	27.56	25.73	93	26.37	94	75-125	2	30	mg/kg	
Chromium	34.45	27.56	57.44	83	65.27	110	75-125	13	30	mg/kg	
Copper	11.15	27.56	43.84	119	42.22	111	75-125	4	30	mg/kg	
Lead	17.03	27.56	40.65	86	41.42	87	75-125	2	30	mg/kg	
Mercury	<0.1284	0.5513	0.5199	94	0.5320	95	75-125	2	30	mg/kg	
Nickel	21.87	27.56	52.70	112	54.03	115	75-125	2	30	mg/kg	
Selenium	<0.6418	27.56	26.35	96	27.02	96	75-125	3	30	mg/kg	
Silver	<0.6418	2.756	2.601	94	2.665	95	75-125	2	30	mg/kg	
Thallium	<0.6418	27.56	25.08	91	25.58	91	75-125	2	20	mg/kg	
Zinc	55.27	55.13	112.5	104	118.2	112	75-125	5	30	mg/kg	

Project Name Quantum Frederick

PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203883

Matrix: Solid

Prep Method: SW5030

Date Prep: 05/31/23

MB Sample Id: 95647-1-BLK

LCS Sample Id: 95647-1-BKS

LCSD Sample Id: 95647-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Acetone	<0.02000	0.06000	0.06233	104	0.06773	113	40-147	8	25	mg/kg	
Benzene	<0.001000	0.06000	0.05577	93	0.05775	96	85-118	3	25	mg/kg	
Bromochloromethane	<0.001000	0.06000	0.05165	86	0.05514	92	84-121	7	25	mg/kg	
Bromodichloromethane	<0.001000	0.06000	0.05218	87	0.05414	90	88-121	4	25	mg/kg	L
Bromoform	<0.001000	0.06000	0.04950	83	0.05335	89	78-129	7	25	mg/kg	
Bromomethane	<0.001000	0.06000	0.05535	92	0.05636	94	66-117	2	25	mg/kg	
2-Butanone (MEK)	<0.005000	0.06000	0.05770	96	0.06657	111	62-115	14	25	mg/kg	
Carbon Disulfide	<0.001000	0.06000	0.05391	90	0.05834	97	79-128	8	25	mg/kg	
Carbon tetrachloride	<0.001000	0.06000	0.04950	83	0.05189	86	87-121	5	25	mg/kg	L
Chlorobenzene	<0.001000	0.06000	0.05553	93	0.05747	96	85-119	3	25	mg/kg	
Chloroethane	<0.001000	0.06000	0.05712	95	0.05782	96	75-115	1	25	mg/kg	
Chloroform	<0.005000	0.06000	0.05077	85	0.05259	88	82-116	4	25	mg/kg	
Chloromethane	<0.001000	0.06000	0.05572	93	0.05511	92	69-124	1	25	mg/kg	
Cyclohexane	<0.001000	0.06000	0.06005	100	0.05984	100	72-132	0	25	mg/kg	
1,2-Dibromo-3-chloropropane	<0.001000	0.06000	0.05314	89	0.05912	99	64-141	11	25	mg/kg	
Dibromochloromethane	<0.001000	0.06000	0.05106	85	0.05587	93	87-122	9	25	mg/kg	L
1,2-Dibromoethane	<0.001000	0.06000	0.05387	90	0.05446	91	87-117	1	25	mg/kg	
1,2-Dichlorobenzene	<0.001000	0.06000	0.05513	92	0.06093	102	83-121	10	25	mg/kg	
1,3-Dichlorobenzene	<0.001000	0.06000	0.05469	91	0.05667	94	84-121	4	25	mg/kg	
1,4-Dichlorobenzene	<0.001000	0.06000	0.05475	91	0.05796	97	84-121	6	25	mg/kg	
Dichlorodifluoromethane	<0.001000	0.06000	0.04763	79	0.04892	82	56-134	3	25	mg/kg	
1,1-Dichloroethane	<0.001000	0.06000	0.05415	90	0.05728	95	83-120	6	25	mg/kg	
1,2-Dichloroethane	<0.001000	0.06000	0.04997	83	0.05310	89	85-118	6	25	mg/kg	L
1,1-Dichloroethene	<0.001000	0.06000	0.05371	90	0.05685	95	83-122	6	25	mg/kg	
1,2-Dichloropropane	<0.001000	0.06000	0.05532	92	0.05599	93	84-120	1	25	mg/kg	
cis-1,2-Dichloroethene	<0.001000	0.06000	0.05441	91	0.05780	96	84-120	6	25	mg/kg	
cis-1,3-Dichloropropene	<0.001000	0.06000	0.05919	99	0.05976	100	84-120	1	25	mg/kg	
trans-1,2-Dichloroethene	<0.001000	0.06000	0.05614	94	0.05809	97	84-121	3	25	mg/kg	
trans-1,3-Dichloropropene	<0.001000	0.06000	0.05562	93	0.05860	98	80-123	5	25	mg/kg	
Ethylbenzene	<0.001000	0.06000	0.05550	93	0.05891	98	87-121	6	25	mg/kg	
2-Hexanone (MBK)	<0.001000	0.06000	0.06245	104	0.06433	107	72-119	3	25	mg/kg	
Isopropylbenzene	<0.001000	0.06000	0.05682	95	0.06322	105	85-121	11	25	mg/kg	
Methyl Acetate	<0.02500	0.06000	0.05245	87	0.05680	95	75-123	8	25	mg/kg	
Methylcyclohexane	<0.001000	0.06000	0.05905	98	0.06025	100	84-123	2	25	mg/kg	
Methylene chloride	<0.005000	0.06000	0.05120	85	0.05440	91	81-117	6	25	mg/kg	
4-Methyl-2-Pentanone (MIBK)	<0.001000	0.06000	0.05716	95	0.06137	102	75-118	7	25	mg/kg	
Methyl-t-Butyl Ether	<0.001000	0.06000	0.06474	108	0.06879	115	74-122	6	25	mg/kg	
Naphthalene	<0.001000	0.06000	0.07084	118	0.08245	137	77-120	15	25	mg/kg	H
Styrene	<0.001000	0.06000	0.05882	98	0.06037	101	83-124	3	25	mg/kg	
1,1,2,2-Tetrachloroethane	<0.001000	0.06000	0.05377	90	0.05946	99	75-123	10	25	mg/kg	
Tetrachloroethene	<0.001000	0.06000	0.05518	92	0.05529	92	82-119	0	25	mg/kg	
Toluene	<0.001000	0.06000	0.05542	92	0.05767	96	84-118	4	25	mg/kg	
1,2,3-Trichlorobenzene	<0.001000	0.06000	0.07372	123	0.07514	125	76-127	2	25	mg/kg	
1,2,4-Trichlorobenzene	<0.001000	0.06000	0.06747	112	0.07158	119	82-131	6	25	mg/kg	
1,1,1-Trichloroethane	<0.001000	0.06000	0.05531	92	0.05596	93	84-121	1	25	mg/kg	
1,1,2-Trichloroethane	<0.001000	0.06000	0.05289	88	0.05623	94	83-118	6	25	mg/kg	
Trichloroethene	<0.001000	0.06000	0.05516	92	0.05665	94	85-118	3	25	mg/kg	
Trichlorofluoromethane	<0.001000	0.06000	0.05072	85	0.05093	85	81-121	0	25	mg/kg	
1,1,2-Trichlorotrifluoroethane	<0.001000	0.06000	0.05280	88	0.05457	91	83-122	3	25	mg/kg	
1,2,4-Trimethylbenzene	<0.001000	0.06000	0.06093	102	0.06419	107	87-121	5	25	mg/kg	
1,3,5-Trimethylbenzene	<0.001000	0.06000	0.05924	99	0.06369	106	85-120	7	25	mg/kg	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203883

MB Sample Id: 95647-1-BLK

Matrix: Solid

LCS Sample Id: 95647-1-BKS

Prep Method: SW5030

Date Prep: 05/31/23

LCSD Sample Id: 95647-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	RPD	RPD Limit	Units	Flag
Vinyl chloride	<0.005000	0.06000	0.05535	92	0.05505	92	69-129	1	25	mg/kg	
m&p-Xylene	<0.002000	0.1200	0.1121	93	0.1185	99	86-123	6	25	mg/kg	
o-Xylene	<0.001000	0.06000	0.05572	93	0.05840	97	84-121	5	25	mg/kg	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
4-Bromofluorobenzene	104		101		105		89-111	%
Dibromofluoromethane	92		91		92		91-108	%
Toluene-D8	98		97		96		93-104	%

Project Name Quantum Frederick

PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203883

Matrix: Soil

Prep Method: SW5030

Date Prep: 05/31/23

Parent Sample Id: 23053017-001

MS Sample Id: 23053017-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Flag
Acetone	<0.02740	0.07864	0.06903	88	8-198	mg/kg	
Benzene	<0.001370	0.07864	0.06705	85	53-120	mg/kg	
Bromochloromethane	<0.001370	0.07864	0.06373	81	56-121	mg/kg	
Bromodichloromethane	<0.001370	0.07864	0.06269	80	44-129	mg/kg	
Bromoform	<0.001370	0.07864	0.05878	75	36-123	mg/kg	
Bromomethane	<0.001370	0.07864	0.06610	84	38-116	mg/kg	
2-Butanone (MEK)	<0.006849	0.07864	0.06395	81	25-154	mg/kg	
Carbon Disulfide	<0.001370	0.07864	0.06037	77	39-130	mg/kg	
Carbon tetrachloride	<0.001370	0.07864	0.06012	76	39-129	mg/kg	
Chlorobenzene	<0.001370	0.07864	0.06664	85	42-126	mg/kg	
Chloroethane	<0.001370	0.07864	0.06964	89	42-116	mg/kg	
Chloroform	<0.006849	0.07864	0.06278	80	52-118	mg/kg	
Chloromethane	<0.001370	0.07864	0.06720	85	40-118	mg/kg	
Cyclohexane	<0.001370	0.07864	0.06379	81	31-129	mg/kg	
1,2-Dibromo-3-chloropropane	<0.001370	0.07864	0.06087	77	31-108	mg/kg	
Dibromochloromethane	<0.001370	0.07864	0.06416	82	41-128	mg/kg	
1,2-Dibromoethane	<0.001370	0.07864	0.06298	80	51-112	mg/kg	
1,2-Dichlorobenzene	<0.001370	0.07864	0.06080	77	37-129	mg/kg	
1,3-Dichlorobenzene	<0.001370	0.07864	0.06030	77	37-132	mg/kg	
1,4-Dichlorobenzene	<0.001370	0.07864	0.06096	78	38-131	mg/kg	
Dichlorodifluoromethane	<0.001370	0.07864	0.05747	73	29-125	mg/kg	
1,1-Dichloroethane	<0.001370	0.07864	0.06801	86	43-127	mg/kg	
1,2-Dichloroethane	<0.001370	0.07864	0.06050	77	54-117	mg/kg	
1,1-Dichloroethene	<0.001370	0.07864	0.06529	83	42-127	mg/kg	
1,2-Dichloropropane	<0.001370	0.07864	0.06690	85	44-126	mg/kg	
cis-1,2-Dichloroethene	<0.001370	0.07864	0.06910	88	44-128	mg/kg	
cis-1,3-Dichloropropene	<0.001370	0.07864	0.06982	89	42-126	mg/kg	
trans-1,2-Dichloroethene	<0.001370	0.07864	0.06846	87	43-129	mg/kg	
trans-1,3-Dichloropropene	<0.001370	0.07864	0.06702	85	40-124	mg/kg	
Ethylbenzene	<0.001370	0.07864	0.06501	83	41-128	mg/kg	
2-Hexanone (MBK)	<0.001370	0.07864	0.06548	83	29-132	mg/kg	
Isopropylbenzene	<0.001370	0.07864	0.06501	83	39-128	mg/kg	
Methyl Acetate	<0.03424	0.07864	0.06540	83	52-114	mg/kg	
Methylcyclohexane	<0.001370	0.07864	0.05438	69	28-130	mg/kg	
Methylene chloride	<0.006849	0.07864	0.06207	79	46-122	mg/kg	
4-Methyl-2-Pentanone (MIBK)	<0.001370	0.07864	0.06068	77	35-103	mg/kg	
Methyl-t-Butyl Ether	<0.001370	0.07864	0.07855	100	35-121	mg/kg	
Naphthalene	<0.001370	0.07864	0.07517	96	31-116	mg/kg	
Styrene	<0.001370	0.07864	0.06868	87	40-130	mg/kg	
1,1,2,2-Tetrachloroethane	<0.001370	0.07864	0.06530	83	40-111	mg/kg	
Tetrachloroethene	<0.001370	0.07864	0.06205	79	34-131	mg/kg	
Toluene	<0.001370	0.07864	0.06568	84	41-126	mg/kg	
1,2,3-Trichlorobenzene	<0.001370	0.07864	0.06565	83	30-133	mg/kg	
1,2,4-Trichlorobenzene	<0.001370	0.07864	0.05957	76	29-142	mg/kg	
1,1,1-Trichloroethane	<0.001370	0.07864	0.06690	85	40-128	mg/kg	
1,1,2-Trichloroethane	<0.001370	0.07864	0.06340	81	53-113	mg/kg	
Trichloroethene	<0.001370	0.07864	0.06484	82	34-132	mg/kg	
Trichlorofluoromethane	<0.001370	0.07864	0.06057	77	40-128	mg/kg	
1,1,2-Trichlorotrifluoroethane	<0.001370	0.07864	0.06291	80	39-131	mg/kg	
1,2,4-Trimethylbenzene	<0.001370	0.07864	0.06784	86	37-133	mg/kg	
1,3,5-Trimethylbenzene	<0.001370	0.07864	0.06662	85	37-130	mg/kg	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203883

Parent Sample Id: 23053017-001

Matrix: Soil

MS Sample Id: 23053017-001 S

Prep Method: SW5030

Date Prep: 05/31/23

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Flag
Vinyl chloride	<0.006849	0.07864	0.06569	84	29-146	mg/kg	
m&p-Xylene	<0.002740	0.1573	0.1283	82	39-132	mg/kg	
o-Xylene	<0.001370	0.07864	0.06363	81	40-129	mg/kg	

Surrogate	MS Result	MS Flag	Limits	Units
4-Bromofluorobenzene	101		89-111	%
Dibromofluoromethane	90		91-108	%
Toluene-D8	99		93-104	%

F = RPD exceeded the laboratory control limits
 X = Recovery of MS, MSD or both outside of QC Criteria
 H= Recovery of BS,BSD or both exceeded the laboratory control limits
 L = Recovery of BS,BSD or both below the laboratory control limits

Project Name Quantum Frederick

PSS Project No.: 23053017

Analytical Method: SW-846 9014

Seq Number: 203877

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 05/31/23 13:16

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	92.83	93	90-110	ug/L	

Analytical Method: SW-846 9014

Seq Number: 203877

Matrix: Water

CCV Sample Id: CCV-02

Analyzed Date: 05/31/23 13:36

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Cyanide, Total	100	98.92	99	90-110	ug/L	

Analytical Method: SW-846 9014

Seq Number: 203612

Matrix: Water

Parent Sample Id: ICV

ICV Sample Id: ICV

Analyzed Date: 05/18/23 15:39

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Cyanide, Total	100	100.5	101	85-115	ug/L	

Analytical Method: EPA 300.0

Seq Number: 203894

Matrix: Water

CCV Sample Id: CCV-01

Analyzed Date: 05/31/23 10:28

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.622	105	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 203894

Matrix: Water

CCV Sample Id: CCV-02

Analyzed Date: 05/31/23 14:41

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Fluoride	2.500	2.480	99	90-110	mg/L	

Analytical Method: EPA 300.0

Seq Number: 203321

Matrix: Water

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 05/08/23 16:22

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Fluoride	2.500	2.491	100	90-110	mg/L	

Project Name Quantum Frederick

PSS Project No.: 23053017

Analytical Method: SW-846 6020 B

Seq Number: 203888

Matrix: Solid

CCV Sample Id: CCV 1

Analyzed Date: 05/31/23 14:28

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	49.67	99	90-110	ug/kg	
Arsenic	100	102.2	102	90-110	ug/kg	
Beryllium	100	99.32	99	90-110	ug/kg	
Cadmium	100	99.98	100	90-110	ug/kg	
Chromium	100	100.8	101	90-110	ug/kg	
Copper	100	107.8	108	90-110	ug/kg	
Lead	100	106.3	106	90-110	ug/kg	
Mercury	1.000	0.9690	97	90-110	ug/kg	
Nickel	100	99.30	99	90-110	ug/kg	
Selenium	100	105.8	106	90-110	ug/kg	
Silver	10.00	9.973	100	90-110	ug/kg	
Thallium	100	105.3	105	90-110	ug/kg	
Zinc	200	197.7	99	90-110	ug/kg	

Analytical Method: SW-846 6020 B

Seq Number: 203888

Matrix: Solid

CCV Sample Id: CCV 2

Analyzed Date: 05/31/23 14:58

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Antimony	50.00	50.07	100	90-110	ug/kg	
Arsenic	100	103.1	103	90-110	ug/kg	
Beryllium	100	99.59	100	90-110	ug/kg	
Cadmium	100	100.4	100	90-110	ug/kg	
Chromium	100	102.1	102	90-110	ug/kg	
Copper	100	108.8	109	90-110	ug/kg	
Lead	100	105.8	106	90-110	ug/kg	
Mercury	1.000	0.9500	95	90-110	ug/kg	
Nickel	100	100.4	100	90-110	ug/kg	
Selenium	100	101.6	102	90-110	ug/kg	
Silver	10.00	10.06	101	90-110	ug/kg	
Thallium	100	105.6	106	90-110	ug/kg	
Zinc	200	201.1	101	90-110	ug/kg	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 6020 B

Seq Number: 203888

Matrix: Solid

Parent Sample Id: ICV 1

ICV Sample Id: ICV 1

Analyzed Date: 05/31/23 13:00

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Antimony	25.00	23.32	93	90-110	ug/kg	
Arsenic	50.00	48.84	98	90-110	ug/kg	
Beryllium	50.00	46.74	93	90-110	ug/kg	
Cadmium	50.00	46.65	93	90-110	ug/kg	
Chromium	50.00	47.45	95	90-110	ug/kg	
Copper	50.00	50.33	101	90-110	ug/kg	
Lead	50.00	49.02	98	90-110	ug/kg	
Mercury	1.000	0.9080	91	90-110	ug/kg	
Nickel	50.00	47.24	94	90-110	ug/kg	
Selenium	50.00	50.00	100	90-110	ug/kg	
Silver	5.000	4.652	93	90-110	ug/kg	
Thallium	50.00	45.86	92	90-110	ug/kg	
Zinc	100	94.78	95	90-110	ug/kg	

Project Name Quantum Frederick

PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203883

Matrix: Solid

CCV Sample Id: CCV, VOC-1

Analyzed Date: 05/31/23 09:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Acetone	0.06000	0.05829	97	80-120	mg/kg	
Benzene	0.06000	0.05666	94	80-120	mg/kg	
Bromochloromethane	0.06000	0.05143	86	80-120	mg/kg	
Bromodichloromethane	0.06000	0.05213	87	80-120	mg/kg	
Bromoform	0.06000	0.04665	78	80-120	mg/kg	X
Bromomethane	0.06000	0.06152	103	80-120	mg/kg	
2-Butanone (MEK)	0.06000	0.05520	92	80-120	mg/kg	
Carbon Disulfide	0.06000	0.05712	95	80-120	mg/kg	
Carbon tetrachloride	0.06000	0.05129	85	80-120	mg/kg	
Chlorobenzene	0.06000	0.05415	90	80-120	mg/kg	
Chloroethane	0.06000	0.05864	98	80-120	mg/kg	
Chloroform	0.06000	0.05018	84	80-120	mg/kg	
Chloromethane	0.06000	0.05527	92	80-120	mg/kg	
Cyclohexane	0.06000	0.05898	98	80-120	mg/kg	
1,2-Dibromo-3-chloropropane	0.06000	0.04995	83	80-120	mg/kg	
Dibromochloromethane	0.06000	0.05004	83	80-120	mg/kg	
1,2-Dibromoethane	0.06000	0.05161	86	80-120	mg/kg	
1,2-Dichlorobenzene	0.06000	0.05493	92	80-120	mg/kg	
1,3-Dichlorobenzene	0.06000	0.05411	90	80-120	mg/kg	
1,4-Dichlorobenzene	0.06000	0.05114	85	80-120	mg/kg	
Dichlorodifluoromethane	0.06000	0.05076	85	80-120	mg/kg	
1,1-Dichloroethane	0.06000	0.05506	92	80-120	mg/kg	
1,2-Dichloroethane	0.06000	0.04802	80	80-120	mg/kg	
1,1-Dichloroethene	0.06000	0.05747	96	80-120	mg/kg	
1,2-Dichloropropane	0.06000	0.05499	92	80-120	mg/kg	
cis-1,2-Dichloroethene	0.06000	0.05557	93	80-120	mg/kg	
cis-1,3-Dichloropropene	0.06000	0.05792	97	80-120	mg/kg	
trans-1,2-Dichloroethene	0.06000	0.05764	96	80-120	mg/kg	
trans-1,3-Dichloropropene	0.06000	0.05576	93	80-120	mg/kg	
Ethylbenzene	0.06000	0.05613	94	80-120	mg/kg	
2-Hexanone (MBK)	0.06000	0.05766	96	80-120	mg/kg	
Isopropylbenzene	0.06000	0.05799	97	80-120	mg/kg	
Methyl Acetate	0.06000	0.05211	87	80-120	mg/kg	
Methylcyclohexane	0.06000	0.06092	102	80-120	mg/kg	
Methylene chloride	0.06000	0.05135	86	80-120	mg/kg	
4-Methyl-2-Pentanone (MIBK)	0.06000	0.05569	93	80-120	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.06311	105	80-120	mg/kg	
Naphthalene	0.06000	0.06127	102	80-120	mg/kg	
Styrene	0.06000	0.05836	97	80-120	mg/kg	
1,1,2,2-Tetrachloroethane	0.06000	0.05108	85	80-120	mg/kg	
Tetrachloroethene	0.06000	0.05469	91	80-120	mg/kg	
Toluene	0.06000	0.05735	96	80-120	mg/kg	
1,2,3-Trichlorobenzene	0.06000	0.05807	97	80-120	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.06174	103	80-120	mg/kg	
1,1,1-Trichloroethane	0.06000	0.05337	89	80-120	mg/kg	
1,1,2-Trichloroethane	0.06000	0.05114	85	80-120	mg/kg	
Trichloroethene	0.06000	0.05546	92	80-120	mg/kg	
Trichlorofluoromethane	0.06000	0.05154	86	80-120	mg/kg	
1,1,2-Trichlorotrifluoroethane	0.06000	0.05490	92	80-120	mg/kg	
1,2,4-Trimethylbenzene	0.06000	0.06032	101	80-120	mg/kg	
1,3,5-Trimethylbenzene	0.06000	0.05919	99	80-120	mg/kg	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203883

Matrix: Solid

CCV Sample Id: CCV, VOC-1

Analyzed Date: 05/31/23 09:01

Parameter	Spike Amount	CCV Result	CCV %Rec	Limits	Units	Flag
Vinyl chloride	0.06000	0.05821	97	80-120	mg/kg	
m&p-Xylene	0.1200	0.1126	94	80-120	mg/kg	
o-Xylene	0.06000	0.05226	87	80-120	mg/kg	

Surrogate	CCV Result	Limits	Units	Flag
4-Bromofluorobenzene	99	80-120	%	
Dibromofluoromethane	91	80-120	%	
Toluene-D8	103	80-120	%	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203852

Matrix: Solid

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 05/30/23 15:40

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Acetone	0.06000	0.06517	109	70-130	mg/kg	
Benzene	0.06000	0.05282	88	70-130	mg/kg	
Bromochloromethane	0.06000	0.05594	93	70-130	mg/kg	
Bromodichloromethane	0.06000	0.05595	93	70-130	mg/kg	
Bromoform	0.06000	0.06117	102	70-130	mg/kg	
Bromomethane	0.06000	0.06458	108	70-130	mg/kg	
2-Butanone (MEK)	0.06000	0.06587	110	70-130	mg/kg	
Carbon Disulfide	0.06000	0.05436	91	70-130	mg/kg	
Carbon tetrachloride	0.06000	0.05395	90	70-130	mg/kg	
Chlorobenzene	0.06000	0.05691	95	70-130	mg/kg	
Chloroethane	0.06000	0.05668	94	70-130	mg/kg	
Chloroform	0.06000	0.05330	89	70-130	mg/kg	
Chloromethane	0.06000	0.05405	90	70-130	mg/kg	
Cyclohexane	0.06000	0.05301	88	70-130	mg/kg	
1,2-Dibromo-3-chloropropane	0.06000	0.06109	102	70-130	mg/kg	
Dibromochloromethane	0.06000	0.06066	101	70-130	mg/kg	
1,2-Dibromoethane	0.06000	0.06310	105	70-130	mg/kg	
1,2-Dichlorobenzene	0.06000	0.05619	94	70-130	mg/kg	
1,3-Dichlorobenzene	0.06000	0.05729	95	70-130	mg/kg	
1,4-Dichlorobenzene	0.06000	0.05827	97	70-130	mg/kg	
Dichlorodifluoromethane	0.06000	0.05405	90	70-130	mg/kg	
1,1-Dichloroethane	0.06000	0.05314	89	70-130	mg/kg	
1,2-Dichloroethane	0.06000	0.05615	94	70-130	mg/kg	
1,1-Dichloroethene	0.06000	0.05345	89	70-130	mg/kg	
1,2-Dichloropropane	0.06000	0.05312	89	70-130	mg/kg	
cis-1,2-Dichloroethene	0.06000	0.05290	88	70-130	mg/kg	
cis-1,3-Dichloropropene	0.06000	0.05850	98	70-130	mg/kg	
trans-1,2-Dichloroethene	0.06000	0.05447	91	70-130	mg/kg	
trans-1,3-Dichloropropene	0.06000	0.05983	100	70-130	mg/kg	
Ethylbenzene	0.06000	0.05757	96	70-130	mg/kg	
2-Hexanone (MBK)	0.06000	0.06537	109	70-130	mg/kg	
Isopropylbenzene	0.06000	0.05884	98	70-130	mg/kg	
Methyl Acetate	0.06000	0.05831	97	70-130	mg/kg	
Methylcyclohexane	0.06000	0.05678	95	70-130	mg/kg	
Methylene chloride	0.06000	0.05679	95	70-130	mg/kg	
4-Methyl-2-Pentanone (MIBK)	0.06000	0.06215	104	70-130	mg/kg	
Methyl-t-Butyl Ether	0.06000	0.05756	96	70-130	mg/kg	
Naphthalene	0.06000	0.05233	87	70-130	mg/kg	
Styrene	0.06000	0.06042	101	70-130	mg/kg	
1,1,1,2-Tetrachloroethane	0.06000	0.06205	103	70-130	mg/kg	
Tetrachloroethene	0.06000	0.05372	90	70-130	mg/kg	
Toluene	0.06000	0.05475	91	70-130	mg/kg	
1,2,3-Trichlorobenzene	0.06000	0.05386	90	70-130	mg/kg	
1,2,4-Trichlorobenzene	0.06000	0.05359	89	70-130	mg/kg	
1,1,1-Trichloroethane	0.06000	0.05515	92	70-130	mg/kg	
1,1,2-Trichloroethane	0.06000	0.05741	96	70-130	mg/kg	
Trichloroethene	0.06000	0.05396	90	70-130	mg/kg	
Trichlorofluoromethane	0.06000	0.05477	91	70-130	mg/kg	
1,1,2-Trichlorotrifluoroethane	0.06000	0.05367	89	70-130	mg/kg	
1,2,4-Trimethylbenzene	0.06000	0.05905	98	70-130	mg/kg	
1,3,5-Trimethylbenzene	0.06000	0.05975	100	70-130	mg/kg	

Project Name Quantum Frederick
PSS Project No.: 23053017

Analytical Method: SW-846 8260 D

Seq Number: 203852

Matrix: Solid

Parent Sample Id: ICV-01

ICV Sample Id: ICV-01

Analyzed Date: 05/30/23 15:40

Parameter	Spike Amount	ICV Result	ICV %Rec	Limits	Units	Flag
Vinyl chloride	0.06000	0.05806	97	70-130	mg/kg	
m&p-Xylene	0.1200	0.1135	95	70-130	mg/kg	
o-Xylene	0.06000	0.05492	92	70-130	mg/kg	

Surrogate	ICV Result	Limits	Units	Flag
4-Bromofluorobenzene	101	70-130	%	
Dibromofluoromethane	99	70-130	%	
Toluene-D8	97	70-130	%	

X = Recovery outside of QC Criteria

PHASE SEPARATION SCIENCE

CHAIN OF CUSTODY FORM

All fields must be completed accurately. Shaded sections for lab use only.

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① PSS CLIENT: <u>GTA</u>		OFFICE LOCATION: <u>Baltimore</u>		PSS Work Order #: <u>23053017</u>				PAGE ____ OF ____												
BILL TO (if different):		PHONE #: <u>301-275-6596</u>		Matrix Codes: SW=Surface Water DW=Drinking Water GW=Ground Water WW=Waste Water O=Oil S=Soil SOL=Solid A=Air WI=Wipe																
CONTACT: <u>Colleen McMullen</u>		EMAIL: <u>cmcmullen@gteng.com</u>		# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB	Preservatives Use Codes								Preservative Codes						
PROJECT NAME: <u>Quantum Frederick</u>		PROJECT #: <u>31222314</u>				Analysis/Method Required														
SITE LOCATION: <u>Frederick, MD</u>		P.O. #: <u>31222314</u>				<div style="display: flex; justify-content: space-between;"> VOCS Total Cyanide PP Metals Fluoride </div>														
SAMPLER(S): <u>CMM</u>		DW CERT #:																		
②																				
PSS ID	SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX Use Codes	# OF CONTAINERS	SAMPLE TYPE: C=COMPOSITE G=GRAB														
1	GTA-TC-1	5/30/23	10:30	S	2	G	X	X	X	X										
2	GTA-TC-2	5/30/23	12:15	S	2	G	X	X	X	X										
3	GTA-TC-3	5/30/23	13:00	S	2	G	X	X	X	X										
④																				
Relinquished By: (1) <u>[Signature]</u>		Date	Time	Received By:		Requested TAT (One TAT per COC)				Ice Present: <u>Pres</u>										
		<u>5/30/23</u>	<u>15:52</u>	<u>[Signature]</u>		<input type="checkbox"/> 5-Day <input type="checkbox"/> 3-Day <input type="checkbox"/> 2-Day <input type="checkbox"/> Next Day <input type="checkbox"/> Emergency <input type="checkbox"/> Other				Custody Seal: <u>Atx</u>										
Relinquished By: (2)		Date	Time	Received By:		STATE RESULTS REPORTED TO:				# Coolers: <u>1</u> Temp: <u>8.5 - 9.1°C</u>										
						<input type="checkbox"/> MD <input type="checkbox"/> DE <input type="checkbox"/> PA <input type="checkbox"/> VA <input type="checkbox"/> WV <input type="checkbox"/> OTHER				Shipping Carrier: <u>Client</u>										
Relinquished By: (3)		Date	Time	Received By:		COMPLIANCE?		Special Instructions:												
						<input type="checkbox"/> DW <input type="checkbox"/> WW		<u>Tier II Pricing</u> <u>Results to kplacek@gteng.com</u>												
Relinquished By: (4)		Date	Time	Received By:		EDD FORMAT TYPE														

This chain of custody is a legal document. The client (PSS Client), by signing, or having client's agent sign, this "Chain of Custody Form", agrees to pay for the above requested services per the latest version of the Service Brochure or PSS-provided quotation including any and all attorney's or other reasonable fees if collection becomes necessary.

Sample Receipt Checklist

Project Name: Quantum Frederick

PSS Project No.: 23053017

Client Name GTA - Baltimore

Received By Tyler Enwright

Disposal Date 07/04/2023

Date Received 05/30/2023 03:52:00 PM

Delivered By Client

Tracking No Not Applicable

Logged In By Tyler Enwright

Shipping Container(s)

No. of Coolers 1

Ice Present

Custody Seal(s) Intact? N/A

Temp (deg C) 9.1

Seal(s) Signed / Dated? N/A

Temp Blank Present No

Documentation

COC agrees with sample labels? Yes

Sampler Name Colleen McMullen

Chain of Custody Yes

MD DW Cert. No. N/A

Sample Container

Appropriate for Specified Analysis? Yes

Custody Seal(s) Intact? Not Applicable

Intact? Yes

Seal(s) Signed / Dated Not Applicable

Labeled and Labels Legible? Yes

Holding Time

All Samples Received Within Holding Time(s)? Yes

Total No. of Samples Received 3

Total No. of Containers Received 6

Preservation

Total Metals (pH<2) N/A

Dissolved Metals, filtered within 15 minutes of collection (pH<2) N/A

Orthophosphorus, filtered within 15 minutes of collection N/A

Cyanides (pH>12) N/A

Sulfide (pH>9) N/A

TOC, DOC (field filtered), COD, Phenols (pH<2) N/A

TOX, TKN, NH3, Total Phos (pH<2) N/A

VOC, BTEX (VOA Vials Rcvd Preserved) (pH<2) N/A

Do VOA vials have zero headspace? N/A

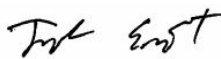
624 VOC (Rcvd at least one unpreserved VOA vial) N/A

524 VOC (Rcvd with trip blanks) (pH<2) N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.


Samples Inspected/Checklist Completed By:



Date: 05/30/2023

Tyler Enwright

PM Review and Approval:



Date: 05/30/2023

Lynn Jackson