Martha's Vineyard Commission
The Olde Stone Building
Oak Bluffs, Massachusetts 02557

Synthetic Turf Laboratory Testing and Analysis Summary Report

Martha's Vineyard Regional High School Athletic Fields Project (DRI 352-M4)
Oak Bluffs, Massachusetts



TETRA TECH

February 26, 2021

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Martha's Vineyard Commission
c/o Alex Elvin, General Planner
The Olde Stone Building
Oak Bluffs, Massachusetts 02557

Re: Synthetic Turf Laboratory Testing and Analysis Summary Report
Martha's Vineyard Regional High School Athletic Fields Project (DRI 352-M4)
Oak Bluffs, Massachusetts

Dear Mr. Elvin:

Tetra Tech, Inc. is pleased to submit this report to the Martha's Vineyard Commission (MVC) for testing and risk characterization of building materials related to proposed synthetic turf for the referenced project at the Martha's Vineyard Regional High School (the Project). This report was prepared per our proposal and contract submitted per your Scope of Work dated October 14, 2020 that was provided to Tetra Tech by the MVC.

We appreciate the opportunity to provide these analysis and risk characterization services to the MVC. If you have any questions about this report, please contact us.

Very truly yours,

Karl D. Seibert
Project Geologist/Risk Assessor

Ian S. Cannan, CHMM
Project Manager

Ronald E. Myrick, Jr., P.E., L.S.P., CHMM
Vice President

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1.0 INTRODUCTION

On behalf of the Martha's Vineyard Commission (MVC), Tetra Tech has prepared this report to summarize the sampling, laboratory analysis and risk characterization of select proposed synthetic turf field system components for the Martha's Vineyard Regional High School Athletic Fields Project (DRI 352-M4). This report has been prepared pursuant to Task 4 of our October 29, 2020 scope of services, which was based on a proposed scope developed by the Horsley Witten Group for MVC.

On November 25, 2020, Tetra Tech submitted a report detailing the proposed approach to sampling, laboratory analysis and risk characterization of the materials proposed as components of the synthetic turf field based on the Horsley Witten Group *Proposed Scope of Work for Laboratory Testing and Analysis* dated October 14, 2020.

Since there are limited regulatory standards and standardized testing methods for an environmental evaluation of the components of synthetic turf systems, the implemented approach utilized available soil-based regulatory standards and laboratory analysis methods. However, these materials are not soils, and limitations therefore exist in this evaluation as described herein. Nevertheless, it is our opinion that the evaluation has value and provides a reasonable assessment of potential human health and environmental impacts associated with the proposed synthetic turf field system.

2.0 DESCRIPTION OF TESTED MATERIALS

The proposed synthetic turf field system would be comprised of a synthetic turf carpet material, an infill, padding and a drainage layer. A cross section of a general representation of the proposed synthetic turf system is provided in Appendix A. Samples of the three specified products as well as the two adhesive products (Reynold 775 Glue and Mapei Ultrabond) were obtained from the manufacturer via the MVC's designer. Tetra Tech took direct custody from the designer on November 22, 2020 with an accompanying transmittal document. A copy of the chain of custody (COC) is included with the laboratory certificate of analysis in Appendix B. The following briefly describes each of the media that were analyzed during this study:

- **Greenfields USA Iron Turf Ultra Green:** This is the turf carpet that will make up the playing surface of the field and is where most of the direct contact to human receptors may occur. There was no specific manufacturer data on the Greenfields USA Iron Turf Ultra Green woven synthetic turf carpet. However, per Greenfields USA (Greenfields USA n.d.), the turf grass blades are primarily comprised of polyethylene, polypropylene and polyester.

- **BrockUSA BrockFILL:** This material is the infill layer within the Greenfields USA Iron Turf Ultra Green carpet. It is likely that human receptors would come into direct contact with the infill material during use and maintenance of the synthetic turf system. According to the manufacturer (BrockUSA n.d.), this infill material is an engineered wood particle infill with reportedly no coatings or plastic additives.

- **BrockUSA YSR Shockpad:** This product is the padding layer and would be installed beneath the turf. Based on the cross section of the proposed synthetic turf system (Appendix A), the shockpad is not accessible for direct contact by human receptors during normal use of the field. There was no information on the composition of the shockpad available on the manufacturer's website (BrockUSA n.d.). However, BrockUSA indicates that polypropylene is the core raw material.

- Two adhesive products were received from the designer with different purposes associated with the turf field construction:

    - MAPEI Ultrabond is identified by the manufacturer (MAPEI n.d.) as a fast-set urethane adhesive designed for the high-performance seaming and direct bonding of synthetic turf used in athletic and landscape applications. Based on our understanding of the installation procedures for MAPEI Ultrabond as part of the synthetic turf field, it is unlikely that human receptors would come into direct contact with this material during normal use of the field.

    - Reynolds 775 is reportedly a pellet glue product for logos. Limited information was identified about this product. Considering the application of this product as a part of the synthetic turf field, it is unlikely that human receptors would come into direct contact with this material during normal use of the field.

These products were received directly by Ron Myrick of Tetra Tech from Chris Huntress of Huntress Associates on November 22, 2020 and prepared for submission to the laboratory by minor manual processing including particle size reduction to fit the material into sample containers that were provided by Alpha Analytical of Westborough, Massachusetts (Alpha). Also, the MAPEI Ultrabond two-part system was mixed and placed into the sample containers which hardened in the containers and the mixing bucket. Following this processing, the materials were submitted to Alpha Analytical under a COC for analysis on November 24, 2020. Excess materials that were not submitted to Alpha were stored in a locked storage facility near Tetra Tech's office. Additional Greenfields Turf, Brockfill and Shockpad materials were subsequently provided to Alpha on December 8, 2020 and December 10, 2020 to facilitate leaching testing since additional material mass was requested by Alpha due to the low density of these materials. We note that subsequent transfer of materials to Alpha were identified as 2 of 2 and 3 of 3 although preceding COC documents did not anticipate the subsequent transfer. On January 7, 2021, additional materials were prepared and submitted per request of Alpha for analysis of additional analytical parameters as requested by MVC. COCs that document these transfers are included in Appendix B.

3.0 LABORATORY ANALYSIS SUMMARY

Alpha performed laboratory analysis as described below. In some cases, the sample media had a particle size that was too large or in a form that was difficult to analyze without manipulation (e.g. the MAPEI Ultrabond). In these cases, Alpha used particle size reduction procedures to reduce the particle sizes sufficiently to allow the media to be processed for analysis (i.e., sample media was crushed or ground into smaller particles so they could be analyzed using methods designed for soil analysis).

The laboratory analytical methods used are designed for the analysis of typical environmental media (e.g. soil, sediment, and water); however, the materials analyzed are different from these media, and therefore limitations in the analysis were identified. These limitations are described in detail in the laboratory certificate of analysis, provided as Appendix B. The following briefly describes the laboratory quality control and quality assurance issues identified in the sampling and analysis of the synthetic turf components:

- The MAPEI Ultra Bond is a two-part epoxy and, as proposed for use in the synthetic turf field, would be mixed, applied and cured. This material was provided pre-mixed and cured to the laboratory; therefore, this material was difficult to extract from the container provided and required further processing by the laboratory to obtain an aliquot for analysis;

- The density of some materials (e.g. the BrockUSA YSR Shockpad) was low which resulted in a low mass of material that could be physically placed within the extraction vessels which elevated detection limits in some cases;

- Sample holding times are established within analytical methods for the intended matrix per the methods (e.g. soil or groundwater) to mitigate the potential excessive reduction of the analyte in the environmental sample over time and are not applicable for the testing of stable synthetic materials; and

- The sample matrixes were comprised of synthetic materials rather than soil samples. Therefore, interferences occurred during the laboratory analysis that in some cases increased the laboratory reporting limits achieved (required sample dilution) and/or resulted in poor control sample and/or surrogate recoveries.

In their analysis of the data, the laboratory reports the laboratory reporting limit (RL) and the analytical method detection limit (MDL). The various regulatory programs require a laboratory to be able to demonstrate that their instruments can detect target analytes down to the RL within a defined degree of certainty (e.g. 95% or 99%). The RLs are based on the lowest point on a calibration curve. Due to co-eluting compounds, dilutions or other issues that may arise during analysis, the RL is adjusted accordingly to maintain the desired degree of certainty. The MDL is a statistical calculation representing the lowest concentration that an instrument can reliably detect. The MDL is lower than the RL. Therefore, when a laboratory detects an analyte above the MDL but below the RL, the results are flagged as an estimated value. It should also be noted that the concentrations detected above the MDL but below the RL have more uncertainty and may or may not actually be present at the reported concentration in the sample.

Total Metals Analysis: Samples were prepared by U.S. Environmental Protection Agency (EPA) Method 3050B for analysis for total metals except for mercury. The samples were digested with repeated applications of nitric acid and hydrogen peroxide followed by dilution and/or filtration. Laboratory analysis for metals other than mercury was via EPA Method 6010D using inductively coupled plasma – optical emission spectrometry (ICP-OES). Mercury was prepared and analyzed via EPA Method 7471B. This method reduces mercury to its elemental state and analysis is performed via cold-vapor atomic absorption.

Total Semivolatile Organic Compounds (SVOCs) Analysis: The sample media was manually crushed to reduce particle size to facilitate analysis in laboratory vessels. A sample aliquot was extracted per EPA Method 3540C which involves mixing the sample media with anhydrous sodium sulfate and extracting an aliquot with a solvent (e.g., acetone/hexane, methylene chloride/acetone, methylene chloride or toluene/methanol). The extract is then dried and placed within an exchange solvent (e.g., hexane, 2-propanol, cyclohexane or acetonitrile). Laboratory analysis was performed via EPA Method 8270D by gas chromatography/mass spectrometry.

Synthetic Precipitation Leaching Procedure (SPLP) Process: The SPLP process by EPA Method 1312 reduces the particle size of the sample media by crushing, cutting or grinding until the material passes a 9.5 mm standard sieve. The material is then placed into an extraction vessel with an extraction fluid and gently rotated for 18 ± 2 hours at ambient temperature. The extraction fluid is a 60/40 weight percent mixture of sulfuric and nitric acids to reagent water to achieve a pH of about 4.2 standard units. Following extraction, the recovered fluid is filtered and then analyzed as described below.

SPLP Metals Analysis: The SPLP extract, except for mercury, was prepared via EPA Method 3005A for metals analysis. The entire extract sample was acidified with nitric acid, heated and reduced in volume.

The resulting digestate was filtered and diluted to an appropriate volume for analysis. Metals except for mercury were analyzed via EPA Method 6010D, as described above. Mercury was prepared and analyzed via EPA Method 7470A which involves digesting the liquid sample in a reagent of sulfuric acid and nitric acid, reducing mercury to its elemental state and analyzing via cold-vapor atomic absorption.

SPLP SVOCs Analysis: The sample media were processed per EPA Method 1312, as described above. The samples were extracted per EPA Method 3510C which involves serial extraction with methylene chloride using a separatory funnel. The extract was then dried, concentrated and placed into an exchange solvent (e.g., methylene chloride, hexane, 2-propanol, cyclohexane, or acetonitrile). Laboratory analysis was performed via EPA Method 8270D by gas chromatography/mass spectrometry.

Total and SPLP PFAS Analysis: A total of six specific PFAS compounds are regulated in soil and groundwater by the MassDEP under the Massachusetts Contingency Plan (MCP) and are herein referred to as the PFAS6 compounds. Laboratory analytical methods have only been developed for a subset of the entire universe of PFAS. The isotope dilution method was selected since it is currently the preferred method for analyzing environmental media for PFAS. The method can report a total of 24 PFAS compounds, and the isotope dilution procedure can correct for various matrix interference issues or errors that occur in various media other than drinking water resulting in lower detection limit capabilities. Because the EPA Method for PFAS (500 series) are not permitted to be modified for non-drinking water media, the samples were extracted per Alpha's proprietary method (23528). The extract was analyzed via liquid chromatography tandem mass spectrometry method (LCMSMS). Prior to analysis, the SPLP PFAS samples were processed per EPA Method 1312, as described above.

Total Oxidizable Precursor PFAS Analysis: The total oxidizable precursor analysis (TOPA) of PFAS assesses the potential for PFAS formation/transformation over time from the sample under oxidative conditions. This method can provide information on the potential presence of precursor compounds that may transform into potentially more toxic PFAS compounds under specific degradation or compound altering conditions. The propriety laboratory test involves the treatment of the sample in the lab using heat and a strong oxidizing agent to simulate oxidizing degradation conditions. The resulting treated sample is then analyzed for total PFAS as described above. There are some limitations in the TOPA PFAS analysis that should be noted when interpreting these data including: no specific identification of the PFAS precursors; the results do not report precursors that are resistant to the oxidation conditions utilized; the method does not detect precursors that are oxidized to PFAS that are not reported by the analytical method used; the transformations that occur under this method may not replicate biotransformation processes; and the TOPA represents specific oxidation conditions that may not occur in the natural environment.

Total Organic Fluorine Analysis: The total organic fluorine analysis was performed using standard operating procedures developed by Galbraith Laboratories, Inc. (GLI). The samples were analyzed for total fluorine, a procedure that involves converting fluorine to fluoride via combustion in an oxygen flask with ionic strength buffer as an absorbing media. The sample was analyzed via an ion-selective electrode to determine the fluoride concentration. This procedure provides analysis of the total fluorine in the sample, and it should be noted that the values reported may include both organic and inorganic fluorine compounds. Subsequently analysis was performed for total fluoride (F-) ions, representing the potential inorganic fraction of the total fluorine analysis. In this procedure, the sample is dissolved or extracted in an ionic strength adjustment buffer solution. The concentration of fluoride ion is then measured using an ion meter. The difference between the total fluorine and total fluoride concentrations represents the total organic fluorine in the sample.

3.1 ANALYTICAL DATA SUMMARY

The results of laboratory analysis for total concentrations of target constituents are summarized in Table 1, and the SPLP data are summarized in Table 2. The laboratory certificates of analysis from Alpha and GLI are provided in Appendix B. The following summarizes the findings of laboratory analysis of these products.

Total and SPLP Metals Results:

Basic metal elements are naturally occurring in soil and groundwater and are found in many manmade materials. The following summarizes the laboratory analytical results for analysis of the 14 metal elements included in the list of the MCP, from 310 CMR 40.0000, which are considered hazardous materials.

- Traces of antimony were detected in the sample of the Brock Shock Pad at an estimated concentration of 0.384 mg/kg, which was below the RL and is considered an estimated concentration. This reported concentration of total antimony is below its MassDEP background concentration in natural soil. Antimony was also detected in the SPLP analysis of samples of the Greenfields Turf (9 µg/L) and Brock Shockpad (8 µg/L).

- Arsenic was detected at a concentration of 0.307 mg/kg in the sample of the MAPEI Ultrabond, which is below the RL, but above the MDL. Total arsenic was not detected in samples of the other turf products and was not detected via the SPLP analysis. The maximum concentration of total arsenic detected is well below the MassDEP background concentration in natural soil of 20 mg/kg.

- Barium was reported in three of the five samples analyzed at concentrations above the RLs including the BrockFill, Reynolds 775 Glue, and MAPEI Ultra Bond samples. Also, estimated concentrations of barium were reported above the MDL but below the RL in the samples of the Greenfield Turf and Brock Shock Pad. The detected concentrations of barium ranged from 0.11 mg/kg in the Greenfield Turf to 36.2 mg/kg in the Reynolds 775 Glue sample. Barium is a naturally occurring metal and is sometimes found in drinking water and food. The maximum reported concentration of barium is below the MassDEP background concentration in natural soil of 50 mg/kg. The SPLP analysis found barium was detectable in the sample of the BrockFill and was detected at estimated concentrations above the MDL but below the RL in the other four samples of the synthetic turf components analyzed. The maximum detected concentration of barium via SPLP analysis of the BrockFill was 112 µg/L.

- Cadmium was detected at a concentration of 0.042 mg/kg in the sample of the BrockFill, which is below the RL, but above the MDL. The detected concentration of cadmium is below the MassDEP background concentration in natural soil of 2 mg/kg. This metal was not detected in other samples of the synthetic turf components analyzed. Cadmium was not detected via SPLP analysis.

- Chromium was only detected above the RL in the sample of the MAPEI Ultra Bond at a concentration of 1.17 mg/kg. Chromium was estimated to be present above the MDL but below the RL in the samples of the Greenfield Turf and the Brock Shock Pad. Hexavalent chromium was not detected above the MDL or the RL in the samples of the Greenfield Turf or the Brock Shock Pad. Laboratory analysis for hexavalent chromium in the MAPEI Ultra Bond was not feasible based on the nature of this media (hardened epoxy); therefore, it is unknown what form of chromium is present in this product. Laboratory analysis of the other synthetic turf components

did not report total chromium or total hexavalent chromium at concentrations above the MDLs. Chromium is a naturally occurring metal and is found in natural soils and in various foods. The MassDEP background concentration of chromium in natural soil is 30 mg/kg, which is higher than the concentration detected in the MAPEI Ultra Bond of 1.17 mg/kg. SPLP analysis for chromium was performed on the five synthetic turf components, and chromium was not detected above the RL of 10 µg/L in any of these samples and was also not detected above the MDLs.

- Lead was detected in the MAPEI Ultra Bond (0.142 mg/kg) and the Brock Shock Pad (0.199 mg/kg); however, these concentrations were below the RL, but above the MDL. The maximum detected concentration of lead is below the MassDEP background concentration in natural soil of 100 mg/kg. Leachable lead was detected in the SPLP analysis at concentrations ranging from 4 µg/L to 7 µg/L.

- Nickel was detected in the Greenfield Turf and MAPEI Ultrabond at concentrations of 0.118 mg/kg and 0.330 mg/kg, respectively. These reported concentrations are below the RL, but above the MDL. The maximum detected concentration of nickel is below the MassDEP background concentration in natural soil of 20 mg/kg. Nickel was also detected via SPLP analysis of the Brock Shock Pad at a concentration of 6 µg/L.

- Selenium was detected at concentrations of 0.656 mg/kg (BrockFill) and 0.315 mg/kg (MAPEI Ultra Bond), which are concentrations below the RL, but above the MDL. These concentrations are below the MassDEP background concentration in natural soil of 1 mg/kg. Selenium was not detected via SPLP analysis of any of the synthetic turf components.

- Vanadium was detected at a concentration of 0.176 mg/kg in the MAPEI Ultra Bond, which is below the RL, but above the MDL. The vanadium detected in the MAPEI Ultra Bond is well below the MassDEP background concentration in natural soil of 30 mg/kg. Vanadium was not detected via SPLP analysis of any of the synthetic turf components.

- Zinc was reported in four of the five samples of the synthetic turf components at concentrations ranging from 5.71 mg/kg to 12.7 mg/kg, with the highest concentration reported in the MAPEI Ultra Bond. The only sample where zinc was not detected was the Reynolds 775 Glue sample. Zinc is a ubiquitous element and is found in soil, water and air, as well as in foods. The MassDEP background concentration of zinc in natural soil is 100 mg/kg, which is higher than the maximum concentration of zinc (12.7 mg/kg) detected in the sample of the MAPEI Ultra Bond. The SPLP analysis for zinc reported detectable concentrations in the Brock Shock Pad (374 µg/L) and at estimated concentrations of 85 µg/L and 105 µg/L in the BrockFill and MAPEI Ultra Bond samples, respectively.

Total and SPLP SVOCS Results:

- Bis(2-ethylhexyl)phthalate (DEHP) was detected in the sample of the Greenfield Turf at a concentration of 0.37 mg/kg, which is below the RL, but above the MDL. Leachable DEHP was detected via SPLP analysis of the Greenfield Turf at a concentration of 1.5 µg/L. DEHP is not naturally occurring and is a common phthalate compound that is used as an industrial plasticizer, mainly in polyvinyl chloride (PVC) but also in other plastic products. Therefore, this compound is common in plastic consumer products and building materials.

- Phenol and phenol-related compounds were detected in the sample from the BrockFill. It is known that phenols are present in the wood and bark of certain trees, including conifer species, and the BrockFill is reportedly made from softwood trees.

    - Phenol was detected in the sample from the BrockFill at a concentration of 6.9 mg/kg and in the Greenfield Turf at a concentration of 0.16 mg/kg but was not detected in the other three samples of the synthetic turf products analyzed. Phenol is both naturally occurring and a manufactured chemical that is commonly detected in the environment. It is known that phenols are present in the wood and bark of certain trees, including conifer species. The BrockFill is reportedly made from softwood trees, and conifer are a softwood species. Therefore, the phenol reported in the sample of the BrockFill may be naturally occurring. Analysis for phenol via SPLP was performed on each of the synthetic turf components, and SPLP phenol was detected in the sample of the BrockFill at a concentration of 16 µg/L and in the Greenfield Turf at a concentration of 2 µg/L. SPLP analysis for phenol did not report detectable concentrations in the other synthetic turf components.

    - 2-methylphenol (o-cresol) and 3-methylphenol (m-cresol) were detected in the SPLP analysis for the BrockFill at concentrations of 8.8 µg/L and 16 µg/L, respectively. However, these SVOCs were not detected in the total SVOCs analysis for 2-methylphenol and 3-methylphenol above the RLs of 1.7 mg/kg and 2.4 mg/kg, respectively. However, based on discussion with the laboratory, 2-methylphenol and 3-methylphenol were detected above the MDL, at concentrations of 0.31 mg/kg and 0.63 mg/kg, respectively. Like phenol, these cresol compounds are naturally occurring, and may be present in the source wood that is used to make the BrockFill product. However, it appears that the concentrations of these SVOCs are below the laboratory detection limits for total SVOCs analysis (parts per million range) but above the SPLP detection limits for these compounds (parts per billion range). We note that the laboratory detection limits for SVOCs in the BrockFill sample were elevated due to the limited sample volume used for analysis due to the low density of this material.

    - 2,4-dimethylphenol is another phenolic compound and was detected in the SPLP analysis of the BrockFill at a concentration of 1.8 µg/L. However, this compound was not detected in the total SVOCs analysis above the MDL. Similar to the phenol and cresol compounds that were also detected in the BrockFill, it is likely that 2,4-dimethylphenol is related to naturally occurring phenols in the softwood that comprises the BrockFill product. However, since this compound was not detected in the total SVOCs analysis, it is unclear whether 2,4-dimethylphenol was the results of the SPLP extraction process or is naturally present in the BrockFill.

    - Benzyl alcohol was detected at a concentration of 15 µg/L in the SPLP SVOCs analysis of the BrockFill. This compound was also detected in the total SVOCs analysis at a concentration of 4.4 mg/kg. This suggests that low concentrations are present as total SVOCs in the BrockFill as well as in the leachable fraction. Like the phenols and cresols, benzyl alcohol may be found naturally in plants and their oils. This compound is common and is used in a variety of cosmetics and skincare products.

PFAS, TOPA and Total Organic Fluorine Results:

Laboratory analysis of the five synthetic turf components for total PFAS by isotope dilution method did not report detectable concentrations of PFAS in these materials above the RLs. However, perfluoropentanoic acid (PFPeA) and 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2FTS) were detected at low

concentrations above the MDL but below the RL and are considered estimated values. PFPeA was detected in the Greenfield Turf (0.148 nanograms per gram (ng/g)) and the BrockFill (0.455 ng/g). 6:2FTS was detected at a concentration of 0.848 ng/g in the MAPEI Ultra Bond. In the SPLP analysis for PFAS, perfluoroheptanoic acid (PFHpA), perfluorooctanoic acid (PFOA), Perfluorobutanoic Acid (PFBA) perfluoropentanoic Acid (PFPeA) and Perfluorodecanesulfonic Acid (PFDS) and Perfluorohexanoic Acid (PFHxA) were detected in one or more of the synthetic turf components. The following findings are made regarding the PFAS analysis of the synthetic turf components:

- The PFAS6 compounds were detected in the SPLP analysis of the Greenfield Turf (1.02 ng/L), Brock Shock Pad (1.40 nanograms per liter(ng/L)), the BrockFill (5.01 ng/L) and the MAPEI Ultra Bond (0.395 ng/L). However, these PFAS6 compounds were not detected in the total PFAS analysis at concentrations above the RL or the MDL.

- Select PFAS compounds were detected in the SPLP analysis that were not detected in the total PFAS analysis. PFAS may be present in the synthetic turf components, but at concentrations below the MDLs achieved by the laboratory. The detection limits achieved by the laboratory were elevated because of the limited sample weight utilized during extraction and the dilutions required by the low density sample matrix.

- The detection of PFAS compounds in the samples of the synthetic turf components via SPLP PFAS analysis but not via total PFAS analysis may suggest that these products contain PFAS compounds that were not extractable via the analytical method utilized for total PFAS analysis (isotope dilution method), but were extractable by the more rigorous SPLP extraction process. There are many PFAS compounds, and laboratory analysis can only be performed on a small subset of PFAS compounds.

- The detection of PFBA in the Brock Shock Pad may be due to high bias in the analysis of this compound.

The samples were also analyzed for PFAS via total oxidizable precursor analysis (TOPA) to assess the formation and/or transformation of PFAS compounds under harsh oxidizing conditions that may represent degradation of the materials over time. The TOPA results are summarized in Table 3. The following findings were made regarding to PFAS TOPA data:

- Like the original analysis of total PFAS compounds, total PFAS were not detected in any of the synthetic turf components at concentrations above the RLs or MDLs (as part of the TOPA procedure, total PFAS were analyzed for a second time). We note that the detection limits achieved by the laboratory were slightly different compared to the original total PFAS analysis.

- The oxidized samples of each of the synthetic turf components contained detectable concentrations of perfluorobutanoic acid (PFBA) at concentrations ranging from 2.11 ng/g to 28.7 ng/g. However, the detected concentrations were below the RL and above the MDL, so these results are considered estimated values.

- Perfluoroheptanoic acid (PFHpA) was detected in the oxidized sample of the BrockFill at a concentration of 20.4 ng/g.

- Perfluoropentanoic acid (PFPeA) was detected in the oxidized sample of the MAPEI Ultra Bond at a concentration of 6.08 ng/g. The detected concentration of PFPeA was below the RL and above the MDL, and this result is considered an estimated value.

There are thousands of PFAS compounds, and laboratory analysis is currently able to quantify a limited number of the entire universe of PFAS compounds; therefore, to provide an additional line of evidence in the assessment for the presence of unknown PFAS compounds, the samples were analyzed for total organic fluorine.

Although there are limitations in the analysis of total organic fluorine, these data do provide some insight into whether there may be additional fluorine containing compounds in the materials. The fluorine data are summarized in Table 1. Total organic fluorine was detected in the Greenfield Turf at a calculated concentration of 70 parts per million (ppm), the Brock Shock Pad (26 ppm), the Reynolds 775 Glue (10 ppm), and the MAPEI Ultra Bond (11 ppm). Fluoride ions were not detectable above the RL of 10 ppm, suggesting that the total fluorine detected in these samples likely represents primarily organic fluorine. However, because the RL in some cases is close to the detected concentration of total fluorine, it is possible that the portion organic fluorine could be lower. Total fluorine was not detected in the sample of the Brock Fill above the RL of 10 ppm.

4.0 RISK CHARACTERIZATION

Tetra Tech reviewed applicable guideline values for use in evaluating risks posed by the target analytes in the synthetic turf products. However, the analyzed products are not soil or groundwater; therefore, guideline values promulgated or reviewed by regulatory authorities are limited. In consideration of these limiting factors, a risk characterization was performed using guidelines provided by the United States Consumer Product Safety Commission (CPSC), MassDEP and/or the EPA. Where soil guideline values are referenced, the following limitations should be considered:

- Materials are not soils. The materials do not exist as, or break down into, smaller particles like soil, although some degradation of components may occur with use;
- Some underlying components of the synthetic turf field including the glue/adhesives and Brock Shock Pad will not be accessible to direct contact by typical users of the field;
- The total concentrations of the selected target constituents were evaluated based on laboratory analysis using various material reduction methods and chemical extraction procedures. These material reduction methods and chemical extraction procedures likely overestimate concentrations available for dermal contact, incidental ingestion and/or inhalation of particulate from the synthetic turf surface. Actual doses are likely to be much lower; and
- Solid synthetic turf products likely react with precipitation differently than soil would. The SPLP testing that was performed assessed the products in a manner that likely results in significantly more aggressive degradation (mechanical reduction of particle size and extraction via acidic solution) than the anticipated conditions during the life of the synthetic turf field.

4.1 SELECTED GUIDELINE VALUES FOR RISK CHARACTERIZATION

Considering the proposed use of the products, the selected guideline values are related to exposure of humans to soil and drinking water. However, these guidelines are considered in the context of the products being evaluated, as detailed above. The following briefly describes the selected guideline values:

- The assessment of risk involves evaluating the level of excess risk posed by the media upon a specific receptor. All humans are exposed to various chemicals in the natural environment because of natural and/or ubiquitous anthropogenic sources. Further, the alternative to a

synthetic turf field would be a field of turf that includes natural or man-made topsoil. Therefore, we first identified background concentrations that could be reviewed to compare the chemicals identified in the selected synthetic turf components to concentrations that may be present in natural soil.

  - We selected the background values from the published MassDEP Technical Update *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil*, May 23, 2002 (Massachusetts Department of Environmental Protection 2002). There were no identified published background concentrations for SVOCs other than the select polycyclic aromatic hydrocarbons (PAHs) in the referenced 2002 MassDEP Technical Update. These values are considered suitable in lieu of a site-specific background data set.

  - A background data set for PFAS in Massachusetts has not been published by MassDEP. A background data set from a study in nearby Vermont (Zhu 2019) identified Upper Tolerance Limits (UTLs) which were generally the 95th upper percentile of the PFAS concentrations detected during a state-wide sampling effort. The data were published by the University of Vermont and the Vermont Department of Environmental Conservation (VTDEC). The Vermont background data are considered suitable considering the rural nature of Vermont and regional proximity to Martha's Vineyard. These values are considered suitable in lieu of a site-specific background data set.

- Massachusetts Drinking Water Quality Standards are promulgated in 310 CMR 22.00: *Drinking Water.* Massachusetts Maximum Contaminant Levels (MMCLs) listed in the drinking water regulations consist of promulgated EPA MCLs, plus a few MCLs set specifically by Massachusetts. The standards are enforced by the MassDEP Drinking Water Program. MMCLs apply to water that is delivered to any user of a public water system. Private residential wells are not subject to the requirements of 310 CMR 22.00. However, these drinking water standards are recommended by MassDEP for the evaluation of private drinking water and are often used to evaluate private residential contamination.

- MCP Method 1 standards are promulgated by MassDEP (310 CMR 40.0000) for soil and groundwater to provide direct and conservative standards to assess risks associated with releases of oil and hazardous materials to the environment. We note that these construction materials are not soils, and comparison to soil standards is not directly applicable. Also, some field materials including the shock pad and adhesives are not accessible for dermal contact, so dermal exposure is not a complete pathway. As such, the dermal component of the MCP Method 1 standards overestimates the potential risk characterized by the MCP Method 1 standards. Lastly, we note that SPLP leaching testing results are likely biased high (conservative) since the analysis method involves a very low pH liquid in contact with an increased surface area per unit volume since the material particle size was reduced to accommodate the analysis. Although limitations exist, this evaluation still provides some comparative values to evaluate the potential risks associated with dermal contact, incidental ingestion, inhalation, and potential leaching of the analytes given the limited industry standards or standardized material testing methods for synthetic turf fields.

  - The S-1 soil standards represent exposures to the most sensitive receptors (children) in the most accessible soils and consider risk-based concentrations (cancer and non-cancer), leaching-based concentration, the practical quantitation limit, and background levels. The S-1 standards consider risks accumulated over a lifetime of exposure to the receptor, and therefore, likely over-estimate the potential human health risks from the synthetic turf field in the scenario being evaluated. There are three categories of S-1 standards and the S-1/GW-3 standard was selected because in this assessment we are focused primarily on human exposure to soil and not on leaching to groundwater that is

used for drinking water (S-1/GW-1) or has the potential to volatize to a building (S-1/GW-2). The MCP Method 1 S-1/GW-3 would be appropriate for dermal contact and incidental ingestion/inhalation exposures to soil by adults and children over a lifetime. The S-1/GW-3 standards referenced in Table 1 of this report are equivalent to the MCP Method 2 direct contact exposure based soil concentrations for soil category S-1, with the exception of phenol where the S-1/GW-3 standard of 20 mg/kg is lower than the Method 2 direct-contact based value of 500 mg/kg. However, we have included the S-1/GW-1 standards in our tables for reference, but many of these are lower than the S-1/GW-3 due to theoretical leaching models from soil to groundwater. In this evaluation, we have used SPLP data as a direct representation of the potential for the synthetic turf products to leach chemicals from the product to water via precipitation.

  - The GW-1 groundwater standards apply to groundwater that is either a current or potential future drinking water source. These values were selected since the groundwater on Martha's Vineyard is within an EPA designated Sole Source Aquifer. The proposed field is located within a designated Zone II Wellhead Protection Area, and nearby drinking water wells could be a receptor of groundwater that migrates from the site of the proposed synthetic turf field. The GW-1 standards consider ingestion, inhalation and dermal absorption of water. GW-1 standards are set equal to MMCLs for constituents where MMCLs have been promulgated. A direct comparison of SPLP leachate concentrations to MMCLs or GW-1 standards overstates potential leachate impacts to drinking water because leachate would be diluted in groundwater during migration from the turf field discharge to drinking water wells.

- MCP Reportable Quantities (RQs) are masses of oil and hazardous materials (OHM) which the release of requires notification of MassDEP, in accordance with the MCP. RQs are promulgated by MassDEP in MCP. Although RQs are not a direct measure of risk, comparison of the mass of hazardous materials discharged over time to RQs provides another line of evidence to evaluate potential impacts. The total leachable mass of antimony was selected for this comparison because two SPLP samples had reported concentrations of antimony exceeding the MCP Method 1 GW-1 standard for antimony. The total leachable mass of PFAS compounds was selected for this comparison due to the community interest in PFAS and the uncertainty surrounding PFAS. Using estimated precipitation quantities for a single event (e.g. 100-year storm) and annual total accumulation, we calculated the total mass of these compounds that may be released to the environment with stormwater flows over time.

- The EPA Regional Screening Levels (RSLs) are risk-based screening values published by EPA for use in performing an initial screening of chemicals in soil, air and tap water. The RSLs are risk-based concentrations (cancer and non-cancer) and do not consider other potential factors such as background concentrations or leachability. Therefore, where the MassDEP does not promulgate MCP Method 1 standards, the use of RSLs allows for comparison to a reasonable guideline value.

  - For single analytes, the EPA RSLs use a threshold hazard quotient (THQ) of 1. However, because more than one contaminant is being evaluated, the EPA RSLs for resident exposure to soil with a THQ of 0.1 were selected.

  - For potential exposure to groundwater and drinking water, the EPA RSLs for tap water with a threshold hazard quotient (THQ) of 0.1 were selected. Similar to the MCP Method 1 GW-1 standards, the EPA RSLs for tap water are not directly comparable to the SPLP leachate concentrations because leachate will be diluted in groundwater prior to consumption.

- The Consumer Product Safety Act, USC 1278a, established the CPSC and regulates certain hazardous materials in consumer products. We note that the testing of the synthetic turf components was not performed by a third party laboratory that is approved under the CPSC; however, the general concentrations of the regulated hazardous materials can be considered in this general review of potential risks to human health.
    - DEHP is banned at concentrations >0.1% in children's products, which equates to 1,000 parts per million (ppm) or 1,000 mg/kg.
    - No accessible part of a children's product may contain more than 100 ppm of lead.
    - The CPCS also lists other metals via ASTM F963 protocol for surface coatings or substrates included as part of a toy, including:
        - Antimony: 60 ppm
        - Arsenic: 25 ppm
        - Barium: 1,000 ppm
        - Cadmium: 75 ppm
        - Chromium: 60 ppm
        - Lead: 90 ppm
        - Mercury: 60 ppm
        - Selenium: 500 ppm

4.2 IDENTIFICATION OF POTENTIAL HUMAN RECEPTORS

The typical user of the proposed synthetic turf field would be a youth to high school aged child/young adult (8 to 18 years old). The MCP Method 1 standards are based on assumed residential exposure to soil by children and adults during play and gardening. The likely receptors at the proposed synthetic turf field would not be exposed at the frequency or duration considered in the derivation of the MCP Method 1 S-1 standards since the use of the field would be limited to sports games and practices, and the children would not spend the majority of their time on the field. However, for the general purposes of this risk characterization, the MCP Method 1 S-1 standards adequately consider this typical human receptor but may over-estimate the likely risk to human health. Likewise, the lowest EPA RSLs are based on exposures to children over a lifetime of residential-type exposures, and although comparable for use in this risk characterization, the RSLs likely over-estimate potential risks to human health from the synthetic turf field.

The stormwater runoff from the proposed synthetic turf field is anticipated to infiltrate the designated stormwater drainage area and eventually migrate into groundwater. The field location is within the EPA designated Martha's Vineyard Sole Source Aquifer and Zone II for public water supply wells. Therefore, groundwater in the vicinity is currently or may be used as a source of drinking water, and potential adult or child receptors may be exposed via the drinking water pathway.

4.3 RISK CHARACTERIZATION CONCLUSIONS

MassDEP has established the criteria of "no significant risk" for evaluation of cleanup of spills of OHM. A condition of no significant risk does not mean that oil or hazardous materials are not present, rather it is based on a numerical measure of risk as presented in the MCP including a non-cancer hazard index equal to or less than one and an excess lifetime cancer risk of equal to or less than 1E-05 (one in 100,000). Further, MassDEP's RQ represents a mass of OHM that, if released to the environment, warrants reporting and investigation. Quantities of OHM below an RQ are considered to be de minimis or

to have inconsequential impacts in the environment. In lieu of other applicable standards or guidelines for evaluation of athletic turf fields, we have adopted the use of these criteria for our evaluation of the proposed synthetic turf field. Based upon our review of the laboratory analytical data for the five components of the proposed synthetic turf field evaluated, the following conclusions are made:

Evaluation of direct contact, incidental ingestion, inhalation exposures to the synthetic turf field:

- The proposed synthetic turf components contain metals at concentrations that are consistent with expected background levels in natural soil. Further, the detected metals in the various synthetic turf components are present at concentrations below respective MCP Method 1 S-1 standards, the EPA RSLs and the CPSC thresholds. Based on these data, there are no excess risks associated with the total concentrations of metals in the synthetic turf components based on this direct comparison to soil standards.

- The BrockFill material contains detectable concentrations of phenol and cresol-related compounds (2-methylphenol, 3-methylphenol, and 2,4-dimethylphenol) and benzyl alcohol. It is likely that these phenol related compounds and benzyl alcohol are associated with their presence in the natural softwood materials that comprise the BrockFill. Although a background concentration of these compounds is not available, it is likely that similar compounds would be present in other natural soft wood products such as bark mulch. Also, a very low concentration of phenol (0.16 mg/kg) was detected in the Greenfield Turf. The maximum detected total concentrations of these compounds do not exceed their respective MCP Method 1 S-1/GW-3 standards or the EPA RSLs. Similarly, benzyl alcohol does not have a MCP Method 1 S-1/GW-3 standard; however, the maximum reported concentration is below the EPA RSL of 630 mg/kg. Therefore, these data suggest that no significant risk is associated with direct contact, incidental ingestion, and/or inhalation of these materials in the synthetic turf components for these compounds.

- DEHP was detected in the Greenfield Turf at a concentration of 0.37 mg/kg which is below the MCP Method 1 S-1/GW-3 standard of 90 mg/kg and below the EPA RSL of 39 mg/kg. This is a synthetic plasticizer compound and would be expected to be present in similar plastic consumer products such as pool liners, vinyl siding, plastic tarps, etc. The reported concentration of DEHP is also below the CPSC threshold of 0.1% (1,000 mg/kg). Therefore, there are no significant risks associated with direct contact, incidental ingestion, and/or inhalation of the Greenfield Turf containing small quantities of DEHP.

- MassDEP has promulgated MCP Method 1 S-1/GW-3 standards for PFAS6 compounds of 300 ng/g; however, no standards exist for the other unregulated PFAS compounds that were detected in various synthetic turf components. Also, there are no EPA RSLs for PFAS yet established. Therefore, our conclusions regarding these compounds are:

    - The PFAS6 compounds were not detected in the total PFAS analysis performed on the selected synthetic turf components. Therefore, no significant risks can be identified based on available data.

    - Two unregulated PFAS compounds were detected in one or more samples, including 6:2FTS at a maximum concentration of 0.848 ng/g. PFPeA and 6:2FTS were detected at concentrations above the anticipated background concentration in natural soil in comparison to the VT study. Although no MCP S-1/GW-3 standard exists, this maximum concentration is significantly lower than the PFAS6 S-1/GW-3 standard of 300 ng/g.

Based on these data, no significant risks from PFAS can be identified based on available data and regulatory standards.

- Total fluorine was detected in the Greenfield Turf, Brock Shock Pad, the Reynolds 775 Glue, and the MAPEI Ultra Bond at concentrations ranging from 10 ppm to 70 ppm. Because fluoride ions were not detected above the RL of 10 ppm the total fluorine represents primarily organic fluorine. There are no MCP Method 1 S-1/GW-3 standards promulgated by MassDEP for total fluorine. The EPA has published an RSL of 470 mg/kg (equivalent to ppm) which is significantly higher than the maximum fluorine concentration detected in the samples of the synthetic turf components. Based on these data, no significant risks from fluorine can be identified based on available data and the EPA RSL. The total organic fluorine concentration may suggest the presence of unregulated PFAS compounds including compounds that are not detectable by current PFAS analytical methods, or fluorine may source from non-PFAS components of the materials. However, it is our opinion that it is not currently possible to correlate a total organic fluorine concentration to a total PFAS concentration or an associated risk.

Evaluation of potential risks associated with the consumption of groundwater impacted by leachate from the synthetic turf field. A simplified model using a summation of the SPLP results for each of the components of the synthetic turf field was used in this evaluation:

- None of the metals detected in the total metals analysis of the various synthetic turf components were reported at concentrations above the MCP Method 1 S-1/GW-1 standard and, with the exception of antimony, SPLP analysis did not indicate concentrations above the respective metals MCP Method 1 GW-1 standards. Antimony was detected in the SPLP sample from the Greenfield Turf (9 µg/L) and the Brock Shock Pad (8 µg/L) at concentrations above the MMCL and MCP Method 1 GW-1 standard of 6 µg/L. Since concentrations of antimony in leachate would be significantly diluted in groundwater and the reported leachate concentrations are only slightly above the MMCL and MCP Method 1 GW-1 standard, the resulting concentration in groundwater would be far below the MMCL or GW-1 standard at any exposure point (i.e., drinking water well).

- To further review the possible leaching impact of metals, we calculated the total leachable mass of each detected metal that could be discharged via stormwater from the synthetic turf field. We note that these estimates consider both the detected antimony concentrations (8 µg/L and 9 µg/L) and a conservative estimate of the three non-detect samples (25 µg/L) using one-half of the RL. We also assumed that the concentration of metals detected in leachate from the SPLP analysis would be maintained throughout the rainfall event which is likely overestimated. Based on 92 µg/L of antimony in leachate and 7.22 inches of rain in a 100-year storm event (i.e., a storm with a 1% probability of occurring in a given year) infiltrating through a 2.42 acre field, a total of 0.4 pounds of antimony may leach from the field during a 100-year storm event. Based on 45 inches of rain, consistent with an upper range of annual precipitation, infiltrating through a 2.42-acre field, a total of approximately 2 pounds of antimony could theoretically leach from the field over a year. Both potential discharge quantities are significantly lower than the MCP RQ for antimony of 100 pounds. The possible total leachable mass of the other metals detected in the synthetic turf field were significantly below their respective MCP RQs. The calculated total leachable mass of antimony and other detected metals is summarized in Table 4, and supporting calculations are included in Appendix C. Based on this evaluation, impacts from a theoretical discharge of antimony and other metals from the field to drinking water are *de minimis*.

- Phenol was detected in the total analysis of the BrockFill at a concentration of 6.9 mg/kg, which exceeds the MCP Method 1 S-1/GW-1 standard of 1 mg/kg. SPLP analysis of the BrockFill detected phenol at a concentration of 16 µg/L. This leachate concentration is significantly below the MCP Method 1 GW-1 standard of 1,000 µg/L. Therefore, there are no significant risks associated with the discharge of phenol from the BrockFill into groundwater. We have also calculated the possible total leachable mass of phenol that could be discharged via stormwater during a 100-year storm event and total annual discharges, as summarized in Table 4. The resulting mass of phenol that may leach from the synthetic turf field is significantly below the MCP RQ, suggesting potential quantities released to the subsurface are *de minimis*.

- Benzyl alcohol was detected in the total SVOCs analysis of the BrockFill at a concentration of 4.4 mg/kg and in the leachate from the BrockFill at a concentration of 15 µg/L. MCP Method 1 Standards have not been established for this compound. The concentration of benzyl alcohol in the leachate from the BrockFill is below the EPA RSL for tap water of 200 µg/L. Therefore, there are no significant risks associated with the discharge of benzyl alcohol from the BrockFill into groundwater. We calculated the possible total leachable mass of benzyl alcohol that could be discharged via stormwater during a 100-year storm event and total annual discharges, as summarized in Table 4. The resulting mass of benzyl alcohol that may leach from the synthetic turf field is significantly below the MCP RQ, suggesting potential quantities released to the subsurface are *de minimis*.

- Leachable phenol-related compounds 2,4-dimethylphenol, 2-methylphenol and 3-methylphenol were detected in the SPLP analysis of the BrockFill. 2,4-Dimethylphenol was not detected above the GW-1 standard of 60 µg/L. While there are no GW-1 standards for 2- and 3-methylphenol, the detected concentrations of these compounds were below the EPA RSL of 93 µg/L. Therefore, there are no significant risks associated with the discharge of 2,4-dimethylphenol, or 2- and 3-methylphenol from the BrockFill into groundwater. We have also calculated the possible total leachable mass of these phenol-related compounds that could be discharged via stormwater during a 100-year storm event and total annual discharges, as summarized in Table 4. The resulting mass of these compounds that may leach from the synthetic turf field are significantly below their respective MCP RQs, suggesting potential quantities released to the subsurface are *de minimis*.

- Total DEHP was not detected above the MCP Method 1 S-1/GW-1 standard of 90 mg/kg. Leachable DEHP was detected at a concentration of 1.5 µg/L in the SPLP sample from the Greenfield Turf, below the MCP Method 1 GW-1 standard of 6 µg/L. Therefore, there are no significant risks associated with the discharge of DEHP from the Greenfields Turf into groundwater. We calculated the possible total leachable mass of DEHP that could be discharged via stormwater during a 100-year storm event and total annual discharges, as summarized in Table 4. The resulting mass of DEHP that may leach from the synthetic turf field is significantly below the MCP RQ, suggesting potential quantities released to the subsurface are *de minimis*.

- Leachable PFAS6 compounds were detected in four of the five components of the synthetic turf field at concentrations ranging from 0.395 ng/L to 5.01 ng/L, with the highest concentration being reported in the BrockFill. The reported concentrations of these PFAS6 compounds in the synthetic leachate samples are below the MMCL and MCP Method 1 GW-1 standard of 20 ng/L. Therefore, there are no significant risks associated with the discharge of PFAS6 from the proposed synthetic field into groundwater. However, because these PFAS materials are persistent and potentially bioaccumulate, we have also reviewed the estimated mass of PFAS6 that may leach from the field over time. To calculate the mass of PFAS6, we utilized one-half of

the RL as an estimate for the detected concentration for PFAS6 compounds that were detected in at least one of the synthetic turf components but may not have been detected in each of the samples. The resulting PFAS6 concentration in SPLP is estimated at 12 ng/L, which is also below the MMCL and the MCP Method 1 GW-1 standard of 20 ng/L. Based on 45 inches of rain per year and a maximum SPLP PFAS6 concentration of 12 ng/L, a total of 0.000295 pounds of PFAS6 may leach from the field in one year, which is a small fraction of the RQ of 1 pound. The data are summarized in Table 4, and supporting calculations are included in Appendix C. Based on our review and the current regulatory standards for PFAS in Massachusetts, there are no significant risks associated with the discharge of PFAS from the synthetic turf field into groundwater.

We have also evaluated the presence of oxidizable PFAS precursors in the synthetic turf via TOPA and isotope dilution analysis. TOPA analysis for PFAS indicated that precursors may be present in some of the materials analyzed that could transform to detectable PFAS in the synthetic turf components under oxidation degradation conditions. The exact precursors that are present are not discernable by currently available analytical methods, and there are no toxicity-based guidelines or standards for these precursor compounds. However, the TOPA analysis provides results for PFAS6 and the other non-regulated PFAS that can be analyzed and reported after the precursors are transformed. The following summarizes our findings based on the TOPA:

- One of the PFAS6 compounds, Perfluoroheptanoic Acid (PFHpA), was detected via TOPA of the BrockFill sample at a concentration of 20.4 ng/g. This concentration is above the Vermont published background level in natural soil of 0.84 ng/g, but is below the MCP Method 1 S-1/GW-3 standard of 300 ng/g. Based on these data, no significant risks from PFAS6 can be identified based on available data and regulatory standards. However, it is noted that the detected concentration of PFHpA is above the MCP Method 1 S-1/GW-1 standard, which is based on a MassDEP developed leaching model from soil to groundwater. Therefore, it is unclear if the BrockFill would leach PFHpA in a manner similar to the soil to groundwater leaching model used to develop the MCP S-1/GW-1 standard. The actual leachability of PFHpA from the BrockFill material after oxidation under conditions of the TOPA is unknown, and there are no standardized methods to test leachability under such conditions. Therefore, no clear risk-based conclusions can be drawn from the fact that the concentration of PFHpA in the BrockFill sample exceeds the MCP Method 1 S-1/GW-1 standard.

- PFBA was detected via TOPA of the samples of the Greenfield Turf, the BrockFill, the Brock Shock Pad, the Reynolds 775 Glue, and the MAPEI Ultra Bond at concentrations ranging from 2.11 ng/g to 28.7 ng/g. A background concentration of PFBA was not published in the Vermont data set. There are no current MCP Method 1 standards for PFBA, and it is not included in the PFAS6 list. Although no MCP S-1/GW-3 standard exists, this maximum concentration is significantly lower than the PFAS6 S-1/GW-3 standard of 300 ng/g. Based on these data, no significant risks from PFAS can be identified based on available data and regulatory standards.

5.0 SUMMARY AND CONCLUSIONS

Tetra Tech has completed our review of the results of laboratory analysis of the synthetic turf field components and the characterization of potential human health risks associated with the synthetic turf field proposed at the Martha's Vineyard Regional High School Athletic Field. We identified low concentrations of target analytes including SVOCs, metals and PFAS in various synthetic turf field components; however, these materials are present at concentrations that are consistent with background concentrations in natural soil or at concentrations well below referenced risk-based standards or RQs.

Our review included use of laboratory methods designed for soil and comparison of detected concentrations to well-established regulatory standards for soil. However, since materials are not soils, there are limitations to this approach. Even with these limitations, we believe our evaluation provides data to support that the overall risks to human health due to potential direct contact exposure to hazardous materials in or from the synthetic field materials are de minimis (i.e., no greater than general exposure to various chemicals in the environment because of natural and/or ubiquitous anthropogenic sources).

The materials that comprise the proposed synthetic turf field resulted in leaching of low concentrations of certain metals and target analytes under the conditions of the SPLP test procedure. However, with the exception of antimony, none of the detected metals or compounds were detected in the leachate above the drinking water standards (MMCLs or MCP Method 1 GW-1) which would be applicable if the stormwater leachate from the field was being directly consumed. Although antimony may leach from the Greenfield Turf, and to a lesser extent from the Brock Shock Pad, at a leachate concentration slightly above the drinking water standard, we conservatively estimated a mass of antimony released to stormwater that would be insufficient to result in detectable concentrations in groundwater downgradient from the proposed field at the MMCL or MCP Method 1 GW-1 standard of 6 µg/L due to dilution of a low concentration of antimony within a relatively small volume of stormwater runoff into a much larger volume of water in the aquifer.

Based on the resulting data set, low concentrations of PFAS compounds are also present in the components of the synthetic turf field and may leach at very low concentrations from the field over time. Undiscernible organic fluorine compounds are also present in the synthetic turf field components as indicated by the results of total organic fluorine analysis. It is also possible that if the synthetic turf field was subject to specific oxidizing conditions, precursor PFAS compounds may be present that could transform into other PFAS compounds. We found that total PFAS6 concentrations in SPLP samples do not approach current MMCLs or MCP Method 1 GW-1 standards. Further, the mass of PFAS6 compounds estimated to leach from the proposed synthetic field is well below the MCP RQ and likely lower than the regulated PFAS6 compounds within discharge from a residential septic system or wastewater treatment plant which have been documented to contain PFAS6 at concentrations above the MCP GW-1 standard due to the presence of PFAS in consumer products and laundered clothing. Based on the current understanding of PFAS using available analytical and risk assessment methods; elevated risk and environmental impacts from PFAS associated from the proposed synthetic turf field appear unlikely. However, the understanding of PFAS detection and risk are limited for the vast majority of PFAS compounds, and certainty in such as assessment is not possible at this time.

6.0 REFERENCES

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Table 1 - Laboratory Analytical Data Summary for Total Constituents

Location:			MVC TURF GREENFIELD TURF	MVC TURF BROCK SHOCK PAD	MVC TURF BROCK FILL	MVC TURF REYNOLDS 775 GLUE	MVC TURF MAPEI ULTRA BOND	MCP	MCP	Lowest	MassDEP	VT
Sample Name:												
Laboratory:			Alpha	Alpha	Alpha	Alpha	Alpha	Method 1	Method 1	EPA	Background	PFAS
Laboratory I.D.:			L2052415-01	L2052415-02 (L2100733-O2X	L2052415-03/03D	L2052415-04	L2052415-05	Standard[3]	Standard[3]	RSL[4]	Concentrations	Background Levels
Sample Date:			11/24/2020	11/24/2020	11/24/2020	11/24/2020	11/24/2020	S-1/GW-1	S-1/GW-3	Soil	Natural Soil[5]	In Shallow Soil
Consultant:	**CAS#**	**Units**	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech			THQ=0.1		UTLs[6]
Method(s):												
Semi-Volatile Organic Compounds by EPA 8270												
Benzyl Alcohol	00100-51-6	mg/kg	NA	NA	4.4	NA	NA	NA	NA	630	NA	
Bis(2-ethylhexyl)phthalate	00117-81-7	mg/kg	0.37J	<0.69	<1.7	<48	<4.8	90	90	39	NA	
Dimethylphenol, 2,4-	00105-67-9	mg/kg	<0.23	<0.29	<0.70	<20	<2.0	0.7	500	130	NA	
Methylphenol, 2- (Cresol, o-)	00095-48-7	mg/kg	<0.54	<0.69	0.31J	<48	<4.8	NA	NA	320	NA	
Methylphenol, 3- (Cresol, m-)	00108-39-4	mg/kg	<0.78	<0.99	0.63J	<70	<6.9	NA	NA	320	NA	
Phenol	00108-95-2	mg/kg	0.16J	<0.69	6.9	<48	<4.8	1	20	1,900	NA	
Metals												
Antimony, Total	07440-36-0	mg/kg	<1.96	0.384J	<1.91	<1.88	<1.87	20	20	3.1	1	
Arsenic, Total	07440-38-2	mg/kg	<0.392	<0.685	<0.381	<0.375	0.307J	20	20	0.68	20	
Barium, Total	07440-39-3	mg/kg	0.110J	0.144J	5.61	36.2	1.08	1,000	1,000	1,500	50	
Cadmium, Total	07440-43-9	mg/kg	<0.392	<0.685	0.042J	<0.375	<0.375	70	70	7.1	2	
Chromium, Total	07440-47-3	mg/kg	0.102J	0.342J	<0.381	<0.375	1.17	100	100	12,000	30	
Chromium (VI), Total	18540-29-9	mg/kg	<2.00	<4.00	<2.00	<1.00	NA	100	100	23	NA	
Lead, Total	07439-92-1	mg/kg	<1.96	0.199J	<1.91	<1.88	0.142J	200	200	400	100	
Nickel, Total	07440-02-0	mg/kg	0.118J	<1.71	<0.953	<0.938	0.330J	600	600	0.76	20	
Selenium, Total	07782-49-2	mg/kg	<1.96	<3.42	0.656J	<1.88	0.315J	400	400	390	1	
Vanadium, Total	07440-62-2	mg/kg	<0.392	<0.685	<0.381	<0.375	0.176J	400	400	390	30	
Zinc, Total	07440-66-6	mg/kg	9.49	7.24	5.71	<1.88	12.7	1,000	1,000	2,300	100	
Perfluorinated Alkyl Acids by Isotope Dilution												
MA Regulated PFAS6:												
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	0.5	300	NA	NA	0.840
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	0.3	300	NA	NA	0.380
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	0.72	300	NA	NA	1.600
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	0.32	300	NA	NA	0.440
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	2	300	NA	NA	3.400
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	0.3	300	NA	NA	0.390
TOTAL PFAS6: (PFHpA, PFHxS, PFOA, PFNA, PFOS, PFDA)			ND	ND	ND	ND	ND	0.2	NA	NA	NA	7.05
Unregulated PFAS:												
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	NA	NA	NA	NA	NA[7]
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	0.148J	<9.52	0.455J	<0.973	<1.66	NA	NA	NA	NA	NA[7]
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	<3.08	<9.52	<2.84	<0.973	0.848JF	NA	NA	NA	NA	NA[7]
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	NA	NA	NA	NA	0.870
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	<3.08	<9.52	<2.84	<0.973	<1.66	NA	NA	NA	NA	0.150
Fluoride (GLI Procedure E9-1)	16984-48-8	ppm	<10	<10	<10	<10	<10	NA	NA	310	NA	NA
Fluorine (GLI Procedure E9-3)	7782-41-4	ppm	70	26	<10	10	11	NA	NA	470	NA	NA
Organic Fluorine (calculated)	NA	ppm	70	26	<10	10	11	NA	NA	NA	NA	NA

Notes:

1) < or ND indicates compound not detected above the laboratory reporting limit

2) NA indicates not applicable or not analyzed

3) MCP Method 1 Standards from 310 CMR 40.0000.

4) EPA Regional Screening Levels (RSLs), November 2020: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

5) MassDEP Technical Update: Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil, May 23, 2002.

6) Upper Tolerance Limits (UTLs) based on data from PFAS Background in Vermont Shallow Soils, February 8, 2019. https://anrweb.vt.gov/PubDocs/DEC/PFOA/Soil-Background/PFAS-Background-Vermont-Shallow-Soils-03-24-19.pdf

7) UTLs were not calculated for compounds detected in less than 10% of samples in the study or that were not detected.

8) J designation indicates concentration is an estimated value and was detected above the analytical method detection limit, but below the laboratory reporting limit.

9) F designation indicates the concentration is an estimated maximum value because the ratio of quantifier ion response to qualifier ion response falls outside laboratory criteria.

Table 2 - Laboratory Analytical Data Summary for Constituents via SPLP

Location:			MVC TURF GREENFIELD TURF	MVC TURF BROCK SHOCK PAD	MVC TURF BROCK FILL	MVC TURF REYNOLDS 775 GLUE	MVC TURF MAPEI ULTRA BOND					
Sample Name:								MCP	MCP	MCP	Lowest	
Laboratory:			Alpha	Alpha	Alpha	Alpha	Alpha	Method 1	Method 1	Method 1	EPA	EPA
Laboratory I.D.:			L2052415-01	L2052415-02	L2052415-03	L2052415-04	L2052415-05	Standard [3]	Standard [3]	Standard [3]	RSL [4]	MCL [5]
Sample Date:			11/24/2020	11/24/2020	11/24/2020	11/24/2020	11/24/2020	GW-1	GW-2	GW-3	Tap Water	
Consultant:	CAS#	Units	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech				THQ=0.1	
Method(s):												
Semi-Volatile Organic Compounds by EPA 8270												
Benzyl Alcohol	00100-51-6	µg/l	<2.0	<2.0	15	<2.0	<2.0	NA	NA	NA	200	NA
Bis(2-ethylhexyl)phthalate	00117-81-7	ug/l	1.5J	<3.0	<3.0	<3.0	<3.0	6	NA	50,000	5.6	6
Dimethylphenol, 2,4-	00105-67-9	ug/l	<5.0	<5.0	1.8J	<5.0	<5.0	60	40,000	50,000	36	NA
Methylphenol, 2- (Cresol, o-)	00095-48-7	µg/l	<5.0	<5.0	8.8	<5.0	<5.0	NA	NA	NA	93	NA
Methylphenol, 3- (Cresol, m-)	00108-39-4	µg/l	<5.0	<5.0	16	<5.0	<5.0	NA	NA	NA	93	NA
Phenol	00108-95-2	µg/l	2.0J	<5.0	16	<5.0	<5.0	1,000	50,000	2,000	580	NA
Metals												
Antimony, SPLP	07440-36-0	µg/l	9J	8J	<50	<50	<50	6	NA	8,000	0.78	6
Arsenic, SPLP	07440-38-2	µg/l	<5	<5	<5	<5	<5	10	NA	900	0.052	10
Barium, SPLP	07440-39-3	µg/l	16J	42J	112	33J	44J	2,000	NA	50,000	380	2,000
Cadmium, SPLP	07440-43-9	ug/l	<5	<5	<5	<5	<5	5	NA	4	0.92	5
Chromium, SPLP	07440-47-3	µg/l	<10	<10	<10	<10	<10	100	NA	300	2,200	100
Lead, SPLP	07439-92-1	µg/l	7J	<10	5J	4J	<10	15	NA	10	15	15
Nickel, SPLP	07440-02-0	µg/l	<25	6J	<25	<25	<25	100	NA	200	0.086	NA
Selenium, SPLP	07782-49-2	µg/l	<10	<10	<10	<10	<10	50	NA	100	10	50
Vanadium, SPLP	07440-62-2	µg/l	<10	<10	<10	<10	<10	30	NA	4,000	8.6	NA
Zinc, SPLP	07440-66-6	µg/l	<200	374	105J	<200	85J	5,000	NA	900	600	NA
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312												
MA Regulated PFAS6:												
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/l	0.545J	1.00J	5.01F	<1.81	<1.83	as total PFAS6	NA	40,000,000	NA	NA
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/l	<1.87	<1.75	<1.77	<1.81	<1.83	as total PFAS6	NA	500,000	NA	NA
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/l	0.471JFB	0.403JFB	<1.77	<1.81	0.395J	as total PFAS6	NA	40,000,000	NA	NA
Perfluorononanoic Acid (PFNA)	375-95-1	ng/l	<1.87	<1.75	<1.77	<1.81	<1.83	as total PFAS6	NA	40,000,000	NA	NA
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/l	<1.87	<1.75	<1.77	<1.81	<1.83	as total PFAS6	NA	500,000	NA	NA
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/l	<1.87	<1.75	<1.77	<1.81	<1.83	as total PFAS6	NA	40,000,000	NA	NA
TOTAL PFAS6: (PFHpA, PFHxS, PFOA, PFNA, PFOS, PFDA)			1.02J	1.40J	5.01F	ND	0.395J	20	NA	NA	NA	NA
Unregulated PFAS:												
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/l	1.39J	1.84	<1.77	<1.81	<1.83	NA	NA	NA	NA	NA
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/l	2.01	1.52J	<1.77	<1.81	<1.83	NA	NA	NA	NA	NA
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/l	<1.87	<1.75	<1.77	<1.81	<1.83	NA	NA	NA	NA	NA
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/l	0.803J	1.03J	2.88F	<1.81	<1.83	NA	NA	NA	NA	NA
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/l	2.07F	<1.75	<1.77	<1.81	<1.83	NA	NA	NA	NA	NA

Notes:

1) < or ND indicates compound not detected above the laboratory reporting limit

2) NA indicates not applicable or not analyzed

3) MCP Method 1 Standards from 310 CMR 40.0000.

4) EPA Regional Screening Levels (RSLs), November 2020: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables

5) EPA Maximum Contaminant Levels (MCLs) from the National Primary Drinking Water Regulations, 40 CFR 141.

6) B designation indicates the analyte was detected above the reporting limit in the associated method blank.

7) F designation indicates the concentration is an estimated maximum value because the ratio of quantifier ion response to qualifier ion response falls outside laboratory criteria.

8) J designation indicates concentration is an estimated value and was detected above the analytical method detection limit, but below the laboratory reporting limit.

Table 3 - Laboratory Analytical Data Summary for PFAS TOPA

Location:			MVC TURF GREENFIELD TURF	MVC TURF BROCK SHOCK PAD	MVC TURF BROCK FILL	MVC TURF REYNOLDS 775 GLUE	MVC TURF MAPEI ULTRA BOND			
Sample Name:								MCP	MCP	VT
Laboratory:			Alpha	Alpha	Alpha	Alpha	Alpha	Method 1	Method 1	PFAS
Laboratory I.D.:			L2100733-01	L2100733-02	L2100733-03	L2100733-04	L2100733-05	Standard[3]	Standard [3]	Background Levels
Sample Date:			1/7/2021	11/24/2020	1/7/2021	1/7/2021	1/7/2021	S-1/GW-1	S-1/GW-3	In Shallow Soil
Consultant:	CAS#	Units	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech	Tetra Tech			UTLs [4]
Perfluorinated Alkyl Acids by Isotope Dilution - Pre Treatment										
MA Regulated PFAS6:										
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<0.413	<1.64	<0.230	<0.224	<0.230	0.5	300	0.84
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<0.413	<1.64	<0.230	<0.224	<0.230	0.3	300	0.38
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	<0.413	<1.64	<0.230	<0.224	<0.230	0.72	300	1.6
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<0.413	<1.64	<0.230	<0.224	<0.230	0.32	300	0.44
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<0.413	<1.64	<0.230	<0.224	<0.230	2	300	3.4
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	<0.413	<1.64	<0.230	<0.224	<0.230	0.3	300	0.39
TOTAL PFAS6: (PFHpA, PFHxS, PFOA, PFNA, PFOS, PFDA)			ND	ND	ND	ND	ND	0.2	NA	7.05
Unregulated PFAS:										
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	<0.826	<3.28	<0.461	<0.447	<0.461	NA	NA	NA [5]
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	<0.826	<3.28	<0.461	<0.447	<0.461	NA	NA	NA [5]
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	27619-97-2	ng/g	<0.826	<3.28	<0.461	<0.447	<0.461	NA	NA	NA [5]
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	<0.826	<3.28	<0.461	<0.447	<0.461	NA	NA	0.87
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	<0.826	<3.28	<0.461	<0.447	<0.461	NA	NA	0.15
Perfluorinated Alkyl Acids by Isotope Dilution - Post Treatment										
MA Regulated PFAS6:										
Perfluoroheptanoic Acid (PFHpA)	375-85-9	ng/g	<5.49	<25.0	20.4F	<4.67	<4.17	0.5	300	0.84
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	ng/g	<5.49	<25.0	<4.38	<4.67	<4.17	0.3	300	0.38
Perfluorooctanoic Acid (PFOA)	335-67-1	ng/g	<5.49	<25.0	<4.38	<4.67	<4.17	0.72	300	1.6
Perfluorononanoic Acid (PFNA)	375-95-1	ng/g	<5.49	<25.0	<4.38	<4.67	<4.17	0.32	300	0.44
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	ng/g	<5.49	<25.0	<4.38	<4.67	<4.17	2	300	3.4
Perfluorodecanoic Acid (PFDA)	335-76-2	ng/g	<5.49	<25.0	<4.38	<4.67	<4.17	0.3	300	0.39
TOTAL PFAS6: (PFHpA, PFHxS, PFOA, PFNA, PFOS, PFDA)			ND	ND	20.4F	ND	ND	0.2	NA	7.05
Unregulated PFAS:										
Perfluorobutanoic Acid (PFBA)	375-22-4	ng/g	7.06J	28.7J	2.11J	8.07J	3.77J	NA	NA	NA [5]
Perfluoropentanoic Acid (PFPeA)	2706-90-3	ng/g	<11.0	<50.0	<8.77	<9.34	6.08J	NA	NA	NA [5]
Perfluorohexanoic Acid (PFHxA)	307-24-4	ng/g	<11.0	<50.0	<8.77	<9.34	<8.33	NA	NA	0.87
Perfluorodecanesulfonic Acid (PFDS)	335-77-3	ng/g	<11.0	<50.0	<8.77	<9.34	<8.33	NA	NA	0.15

Notes:

1) < or ND indicates compound not detected above the laboratory reporting limit

2) NA indicates not applicable or not analyzed

3) MCP Method 1 Standards from 310 CMR 40.0000.

4) Upper Tolerance Limits (UTLs) based on data from PFAS Background in Vermont Shallow Soils, February 8, 2019. https://anrweb.vt.gov/PubDocs/DEC/PFOA/Soil-Background/PFAS-Background-Vermont-Shallow-Soils-03-24-19.pdf

5) UTLs were not calculated for compounds detected in less than 10% of samples in the study or that were not detected.

6) J designation indicates concentration is an estimated value and was detected above the analytical method detection limit, but below the laboratory reporting limit.

7) F designation indicates the concentration is an estimated maximum value because the ratio of quantifier ion response to qualifier ion response falls outside laboratory criteria.

Table 4 - Theoretical Stormwater Mass Loading

	CAS#	Units	100 Year Storm	Annual Total	MassDEP RQ
Semi-Volatile Organic Compounds					
Benzyl Alcohol	00100-51-6	lbs	0.08	0.5	NA
Bis(2-ethylhexyl)phthalate	00117-81-7	lbs	0.03	0.2	10
Dimethylphenol, 2,4-	00105-67-9	lbs	0.047	0.29	10
Methylphenol, 2- (Cresol, o-)	00095-48-7	lbs	0.074	0.46	50
Methylphenol, 3- (Cresol, m-)	00108-39-4	lbs	0.10	0.64	50
Phenol	00108-95-2	lbs	0.10	0.63	50
Metals					
Antimony, SPLP	07440-36-0	lbs	0.4	2	100
Arsenic, SPLP	07440-38-2	lbs	ND	ND	1
Barium, SPLP	07440-39-3	lbs	0.98	6.1	100
Cadmium, SPLP	07440-43-9	lbs	ND	ND	5
Chromium, SPLP	07440-47-3	lbs	ND	ND	100
Lead, SPLP	07439-92-1	lbs	0.1	0.6	5
Nickel, SPLP	07440-02-0	lbs	0.2	1	10
Selenium, SPLP	07782-49-2	lbs	ND	ND	10
Vanadium, SPLP	07440-62-2	lbs	ND	ND	50
Zinc, SPLP	07440-66-6	lbs	3.0	19	50
Perfluorinated Alkyl Acids					
MA Regulated PFAS6:					
Perfluoroheptanoic Acid (PFHpA)	375-85-9	lbs	0.0000332	0.000207	1
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	lbs	ND	ND	1
Perfluorooctanoic Acid (PFOA)	335-67-1	lbs	0.0000121	0.0000755	1
Perfluorononanoic Acid (PFNA)	375-95-1	lbs	ND	ND	1
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	lbs	ND	ND	1
Perfluorodecanoic Acid (PFDA)	335-76-2	lbs	ND	ND	1
TOTAL PFAS6: (PFHpA, PFHxS, PFOA, PFNA, PFOS, PFDA)			0.0000473	0.000295	1

Notes:

1) ND indicates compound not detected above the laboratory reporting limit or method detection limit

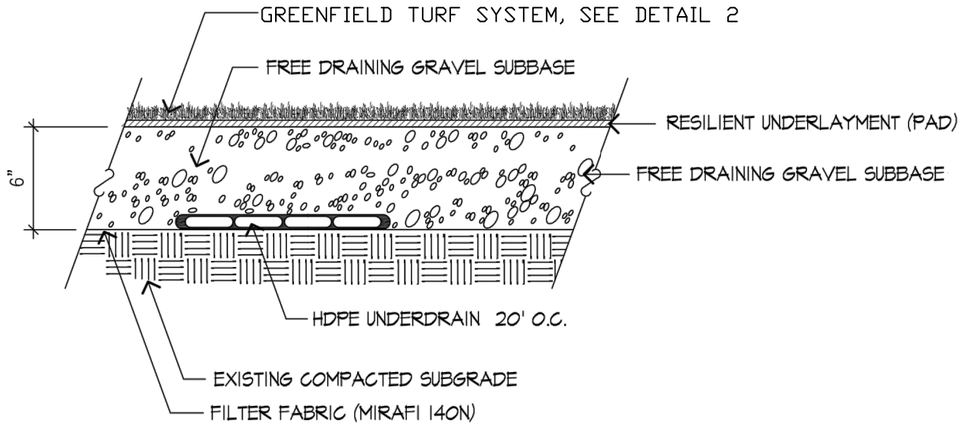
2) NA indicates not applicable or not analyzed

3) MassDEP Reportable Quantity from 310 CMR 40.0000.

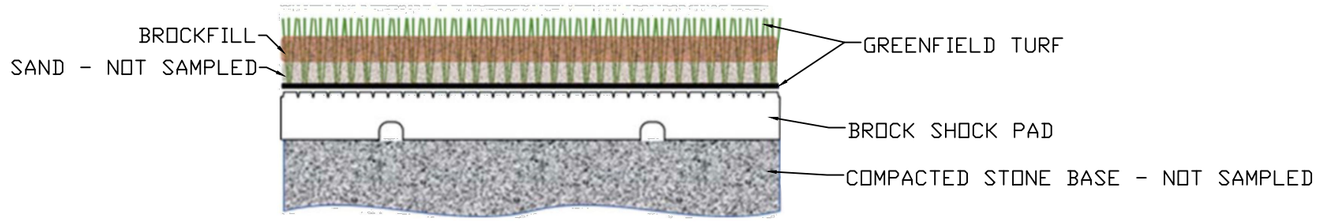
4) Supporting calculations are included in Appendix C

Appendix A

Cross Section of the Proposed Synthetic Turf System



DETAIL 1
TYPICAL INFILLED SYNTHETIC TURF SYSTEM



DETAIL 2
GREENFIELD TURF SYSTEM

PLAN REFERENCES:

1. Detail 1 Source: Huntress Associates, Inc. Construction Details for Martha's Vinyard Regional High School Project, Drawing Number L-4 of 13. Dated January 22, 2020, job 00-107.

0
SCALE: NOT TO SCALE

TETRA TECH
www.tetratech.com
100 Nickerson Road
Marlborough, MA 01752
Phone: 508-786-2200 Fax: 508-786-2201

Martha's Vineyard Commission

Martha's Vineyard Regional High School
Athletic Fields Project

Cross Section of the Proposed Synthetic Turf System
(NOT TO SCALE)

Project No.: 143-319629-21001
Date: February 9, 2021
Designed By: KML
Appendix
A

Bar Measures 1 inch

Copyright: Tetra Tech

2/9/2021 9:49:11 AM - P:\319629\143-319629-21001\CAD\SHEETFILES\FIGURE 1 TURF.DWG - LEBLANC, KAITLYNE

Appendix B

Laboratory Certificate of Analysis

ANALYTICAL REPORT

Lab Number:	L2052415
Client:	Tetra Tech Rizzo Marlborough Technology Park 100 Nickerson Road Marlborough, MA 01752
ATTN:	Ron Myrick
Phone:	(508) 786-2200
Project Name:	MVC TURF
Project Number:	143-319629-21001
Report Date:	01/07/21

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

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

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

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2052415-01	GREENFIELD TURF	SOLID	EDGARTOWN, MA	11/24/20 08:45	11/24/20
L2052415-02	BROCK SHOCK PAD	SOLID	EDGARTOWN, MA	11/24/20 09:15	11/24/20
L2052415-03	BROCK FILL	SOLID	EDGARTOWN, MA	11/24/20 09:30	11/24/20
L2052415-04	REYNOLDS 775 GLUE	SOLID	EDGARTOWN, MA	11/24/20 09:45	11/24/20
L2052415-05	MAPEI ULTRA BOND	SOLID	EDGARTOWN, MA	11/24/20 10:30	11/24/20

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

MADEP MCP Response Action Analytical Report Certification

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

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

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

Project Name:	MVC TURF	**Lab Number:**	L2052415
Project Number:	143-319629-21001	**Report Date:**	01/07/21

Case Narrative

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

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

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

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

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

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

Project Name: MVC TURF **Lab Number:** L2052415
Project Number: 143-319629-21001 **Report Date:** 01/07/21

Case Narrative (continued)

Report Revision

January 07, 2021: All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

January 05, 2021: At the client's request, Benzyl Alcohol by SW-846 8270D is reported on L2052415-03. Additionally, the extraneous SPLP Zinc results reported on L2052415-01 through -04 have been removed.

Report Submission

December 29, 2020: This final report includes the results of all requested analyses.

December 22, 2020: This is a preliminary report.

MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Semivolatile Organics

L2052415-01, -02, and -03: The sample has elevated detection limits due to limited sample volume available for analysis.

L2052415-04: The sample has elevated detection limits due to the dilution required by the matrix interferences encountered during the concentration of the sample and the analytical dilution required by the sample matrix.

L2052415-05: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

In reference to question A:

L2052415-01 through -05 were extracted with the method required holding time exceeded.

In reference to question H:

L2052415-04: The surrogate recoveries are below the acceptance criteria for 2-fluorophenol (0%), phenol-d6 (0%), nitrobenzene-d5 (0%), 2-fluorobiphenyl (0%), 2,4,6-tribromophenol (0%), and 4-terphenyl-d14 (0%)

Project Name:	MVC TURF	**Lab Number:**	L2052415
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Case Narrative (continued)

due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Hexavalent Chromium
LCS SRM Lot#: ERA D107-921
L2052415-01 through -04: The sample has an elevated detection limit due to the dilution required by the sample matrix.
In reference to question G:
L2052415-01 through -04: One or more of the target analytes did not achieve the requested CAM reporting limits.

Non-MCP Related Narratives
SPLP Semivolatiles
L2052415-02 was extracted with the method required holding time exceeded.
The WG1447256-2/-3 LCS/LCSD recoveries, associated with L2052415-02, are below the acceptance criteria for benzidine (8%/0%), aniline (22%/6%) and pyridine (LCSD 8%); however, they have been identified as "difficult" analytes. The results of the associated samples are reported.
The WG1447256-2/-3 LCS/LCSD recoveries, associated with L2052415-02, are below the individual acceptance criteria for 4-chloroaniline (30%/21%), but within the overall method allowances. The results of the associated samples are reported; however, all results are considered to have a potentially low bias for these compounds.
The WG1445550-2/-3 LCS/LCSD RPD, associated with L2052415-01, -03, and -04, are above the acceptance criteria for benzidine (33%).
The WG1447256-2/-3 LCS/LCSD RPDs, associated with L2052415-02, are above the acceptance criteria for aniline (114%), 4-chloroaniline (35%) and pyridine (60%).

Project Name: MVC TURF **Lab Number:** L2052415
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Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

L2052415-01, -02, -03, and -05: The sample has elevated detection limits due to the limited sample weight utilized during extraction, as required by the sample matrix.

L2052415-01, -03, -04, -05, WG1442230-4, and WG1442230-5: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1442230-2/-3 LCS/LCSD recoveries, associated with L2052415-01 through -05, are above the acceptance criteria for 1h,1h,2h,2h-perfluorohexanesulfonic acid (4:2fts) (166%/170%), 1h,1h,2h,2h-perfluorodecanesulfonic acid (8:2fts) (148%/148%), perfluorononanesulfonic acid (pfns) (131%/135%), perfluorodecanesulfonic acid (pfds) (138%/142%), and perfluorotetradecanoic acid (pfta) (163%/161%); however, the associated samples are non-detect to the RL for these target analytes. The results of the original analysis are reported.

The WG1442230-4 MS recoveries, performed on L2052415-03, are outside the acceptance criteria for 1h,1h,2h,2h-perfluorohexanesulfonic acid (4:2fts) (168%), perfluoropentanesulfonic acid (pfpes) (125%), and perfluorotetradecanoic acid (pfta) (163%).

SPLP Perfluorinated Alkyl Acids by Isotope Dilution

L2052415-01 and -02 was extracted with the method required holding time exceeded.

L2052415-01, -03, -04, WG1444345-4, WG1444345-5 and WG1446532-4: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1444345-4 MS recovery, performed on L2052415-03, is outside the acceptance criteria for perfluorobutanoic acid (pfba) (155%).

The WG1446532-1 Method Blank, associated with L2052415-01 and -02, has a concentration above the reporting limit for PFOA. Since the sample(s) were non-detect to the RL for this target analyte, no further actions were taken. The results of the original analysis are reported.

WG1444345-6: This blank represents the SPLP tumbling blank associated with L2052415-03 and -04.

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Case Narrative (continued)

WG1446532-6: This blank represents the SPLP tumbling blank associated with L2052415-01 and -02.

SPLP Metals

The WG1445852-2 LCS recovery, associated with L2052415-01 through -04, was outside the acceptance criteria for zinc (126%); however, re-digestion achieved a similar result. The results of the original analysis are reported.

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

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 01/07/21

QC OUTLIER SUMMARY REPORT

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Semivolatile Organics - Westborough Lab								
8270D	REYNOLDS 775 GLUE	L2052415-04 D	2-Fluorophenol	Surrogate	0	30-130	-	- - not applicable - -
8270D	REYNOLDS 775 GLUE	L2052415-04 D	Phenol-d6	Surrogate	0	30-130	-	- - not applicable - -
8270D	REYNOLDS 775 GLUE	L2052415-04 D	Nitrobenzene-d5	Surrogate	0	30-130	-	- - not applicable - -
8270D	REYNOLDS 775 GLUE	L2052415-04 D	2-Fluorobiphenyl	Surrogate	0	30-130	-	- - not applicable - -
8270D	REYNOLDS 775 GLUE	L2052415-04 D	2,4,6-Tribromophenol	Surrogate	0	30-130	-	- - not applicable - -
8270D	REYNOLDS 775 GLUE	L2052415-04 D	4-Terphenyl-d14	Surrogate	0	30-130	-	- - not applicable - -
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab								
LCMSMS-ID	Batch QC	WG1442230-2	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	LCS	166	62-145	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-2	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	LCS	148	65-137	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-2	Perfluorononanesulfonic Acid (PFNS)	LCS	131	69-125	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-2	Perfluorodecanesulfonic Acid (PFDS)	LCS	138	59-134	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-2	Perfluorotetradecanoic Acid (PFTA)	LCS	163	69-133	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-3	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	LCSD	170	62-145	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-3	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	LCSD	148	65-137	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-3	Perfluorononanesulfonic Acid (PFNS)	LCSD	135	69-125	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-3	Perfluorodecanesulfonic Acid (PFDS)	LCSD	142	59-134	01-05	potential high bias
LCMSMS-ID	Batch QC	WG1442230-3	Perfluorotetradecanoic Acid (PFTA)	LCSD	161	69-133	01-05	potential high bias
LCMSMS-ID	Batch QC (L2052415-03)	WG1442230-4	1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	MS	168	62-145	01-05	potential high bias
LCMSMS-ID	Batch QC (L2052415-03)	WG1442230-4	Perfluoropentanesulfonic Acid (PFPeS)	MS	125	73-123	01-05	potential high bias
LCMSMS-ID	Batch QC (L2052415-03)	WG1442230-4	Perfluorotetradecanoic Acid (PFTA)	MS	163	69-133	01-05	potential high bias
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab								
LCMSMS-ID	Batch QC (L2052415-03)	WG1444345-4	Perfluorobutanoic Acid (PFBA)	MS	155	67-148	03-04	potential high bias
SPLP Semivolatiles by EPA 1312 - Westborough Lab								
8270D	Batch QC	WG1445550-3	Benzidine	LCSD	33	30	01,03-04	non-directional bias
8270D	Batch QC	WG1447256-2	Benzidine	LCS	8	10-75	02	potential low bias
8270D	Batch QC	WG1447256-2	Aniline	LCS	22	40-140	02	potential low bias
8270D	Batch QC	WG1447256-2	4-Chloroaniline	LCS	30	40-140	02	potential low bias
8270D	Batch QC	WG1447256-3	Benzidine	LCSD	0	10-75	02	potential low bias

QC OUTLIER SUMMARY REPORT

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
8270D	Batch QC	WG1447256-3	Aniline	LCSD	6	40-140	02	potential low bias
8270D	Batch QC	WG1447256-3	Aniline	LCSD	114	30	02	non-directional bias
8270D	Batch QC	WG1447256-3	4-Chloroaniline	LCSD	21	40-140	02	potential low bias
8270D	Batch QC	WG1447256-3	4-Chloroaniline	LCSD	35	30	02	non-directional bias
8270D	Batch QC	WG1447256-3	Pyridine	LCSD	8	10-66	02	potential low bias
8270D	Batch QC	WG1447256-3	Pyridine	LCSD	60	30	02	non-directional bias
8270D	Batch QC	WG1448815-2	Benzidine	LCS	4	10-75	05	potential low bias
8270D	Batch QC	WG1448815-2	Aniline	LCS	21	40-140	05	potential low bias
8270D	Batch QC	WG1448815-2	4-Chloroaniline	LCS	39	40-140	05	potential low bias
8270D	Batch QC	WG1448815-3	Benzidine	LCSD	2	10-75	05	potential low bias
8270D	Batch QC	WG1448815-3	Benzidine	LCSD	87	30	05	non-directional bias
8270D	Batch QC	WG1448815-3	Aniline	LCSD	16	40-140	05	potential low bias
8270D	Batch QC	WG1448815-3	Pyridine	LCSD	6	10-66	05	potential low bias
8270D	Batch QC	WG1448815-3	Pyridine	LCSD	72	30	05	non-directional bias
SPLP Metals by EPA 1312 - Mansfield Lab								
6010D	Batch QC	WG1445852-2	Zinc, SPLP	LCS	126	80-120	01-04	potential high bias
MCP General Chemistry - Westborough Lab								
7196A	Batch QC	WG1446813-3	Chromium, Hexavalent	LCSD	57	70-129	01-04	potential low bias
7196A	Batch QC	WG1446813-3	Chromium, Hexavalent	LCSD	70	20	01-04	non-directional bias

ORGANICS

SEMIVOLATILES

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 1,8270D
Analytical Date: 12/18/20 10:07
Analyst: IM
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 06:55

Extraction Method: EPA 3510C
Extraction Date: 12/15/20 18:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	1.1	1
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58	1
Hexachlorobenzene	ND		ug/l	2.0	0.69	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88	1
2-Chloronaphthalene	ND		ug/l	2.0	0.54	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37	1
Azobenzene	ND		ug/l	2.0	0.81	1
Fluoranthene	ND		ug/l	2.0	0.65	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5	1
Hexachlorobutadiene	ND		ug/l	2.0	0.60	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.61	1
Hexachloroethane	ND		ug/l	2.0	0.44	1
Isophorone	ND		ug/l	5.0	0.66	1
Naphthalene	ND		ug/l	2.0	0.67	1
Nitrobenzene	ND		ug/l	2.0	0.66	1
NDPA/DPA	ND		ug/l	2.0	0.65	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77	1
Bis(2-ethylhexyl)phthalate	1.5	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	2.2	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01 Date Collected: 11/24/20 08:45

Client ID: GREENFIELD TURF Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Di-n-butylphthalate	ND		ug/l	5.0	0.58	1
Di-n-octylphthalate	ND		ug/l	5.0	2.4	1
Diethyl phthalate	ND		ug/l	5.0	4.3	1
Dimethyl phthalate	ND		ug/l	5.0	4.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.77	1
Benzo(a)pyrene	ND		ug/l	2.0	0.45	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82	1
Chrysene	ND		ug/l	2.0	0.83	1
Acenaphthylene	ND		ug/l	2.0	0.59	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.77	1
Fluorene	ND		ug/l	2.0	1.0	1
Phenanthrene	ND		ug/l	2.0	0.99	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94	1
Pyrene	ND		ug/l	2.0	0.70	1
Biphenyl	ND		ug/l	2.0	0.64	1
Aniline	ND		ug/l	2.0	0.48	1
4-Chloroaniline	ND		ug/l	5.0	0.65	1
1-Methylnaphthalene	ND		ug/l	2.0	0.60	1
2-Nitroaniline	ND		ug/l	5.0	0.52	1
3-Nitroaniline	ND		ug/l	5.0	0.57	1
4-Nitroaniline	ND		ug/l	5.0	0.58	1
Dibenzofuran	ND		ug/l	2.0	0.82	1
2-Methylnaphthalene	ND		ug/l	2.0	0.68	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.41	1
2-Chlorophenol	ND		ug/l	2.0	0.40	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.53	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.1	1
2-Nitrophenol	ND		ug/l	10	0.46	1
4-Nitrophenol	ND		ug/l	10	1.1	1
2,4-Dinitrophenol	ND		ug/l	20	3.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4	1
Pentachlorophenol	ND		ug/l	10	2.0	1

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Phenol	2.0	J	ug/l	5.0	1.3	1
2-Methylphenol	ND		ug/l	5.0	1.1	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	ND		ug/l	2.0	0.70	1
Carbazole	ND		ug/l	2.0	0.76	1
Pyridine	ND		ug/l	3.5	0.90	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	77		15-120
2,4,6-Tribromophenol	84		10-120
4-Terphenyl-d14	68		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/18/20 19:42
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/12/20 14:27

Extraction Method: ALPHA 23528
Extraction Date: 12/18/20 07:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.39	J	ng/l	1.87	0.381	1
Perfluoropentanoic Acid (PFPeA)	2.01		ng/l	1.87	0.370	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.87	0.222	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.87	0.422	1
Perfluorohexanoic Acid (PFHxA)	0.803	J	ng/l	1.87	0.306	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.87	0.229	1
Perfluoroheptanoic Acid (PFHpA)	0.545	J	ng/l	1.87	0.210	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.87	0.351	1
Perfluorooctanoic Acid (PFOA)	0.471	JFB	ng/l	1.87	0.220	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.87	1.24	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.87	0.643	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.87	0.291	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.87	0.471	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.87	0.284	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.87	1.13	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.87	1.05	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.87	0.605	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.87	0.243	1
Perfluorodecanesulfonic Acid (PFDS)	2.07	F	ng/l	1.87	0.915	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.87	0.542	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.87	0.751	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.87	0.347	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.87	0.306	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.87	0.232	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01 Date Collected: 11/24/20 08:45

Client ID: GREENFIELD TURF Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	117		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**740**	Q	1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	69		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**630**	Q	1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	83		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**475**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**291**	Q	1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**165**	Q	40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	42		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	139		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	107		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	70		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 04:31
Analyst: HT
Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	3.08	0.070	1
Perfluoropentanoic Acid (PFPeA)	0.148	J	ng/g	3.08	0.142	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	3.08	0.120	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	3.08	0.198	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	3.08	0.162	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	3.08	0.257	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	3.08	0.139	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	3.08	0.186	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	3.08	0.129	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	3.08	0.552	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	3.08	0.420	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	3.08	0.231	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	3.08	0.400	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	3.08	0.206	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	3.08	0.883	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	3.08	0.920	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	3.08	0.620	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	3.08	0.144	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	3.08	0.471	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	3.08	0.302	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	3.08	0.260	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	3.08	0.215	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	3.08	0.629	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	3.08	0.166	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01 Date Collected: 11/24/20 08:45

Client ID: GREENFIELD TURF Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**642**	Q	56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	146		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	107		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**638**	Q	25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	84		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	43		26-160

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 97,8270D
Analytical Date: 12/14/20 22:51
Analyst: WR
Percent Solids: Results reported on an 'AS RECEIVED' basis.
Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	430	56.	1
1,2,4-Trichlorobenzene	ND		ug/kg	540	62.	1
Hexachlorobenzene	ND		ug/kg	230	61.	1
Bis(2-chloroethyl)ether	ND		ug/kg	230	73.	1
2-Chloronaphthalene	ND		ug/kg	540	54.	1
1,2-Dichlorobenzene	ND		ug/kg	540	97.	1
1,3-Dichlorobenzene	ND		ug/kg	540	93.	1
1,4-Dichlorobenzene	ND		ug/kg	230	94.	1
3,3'-Dichlorobenzidine	ND		ug/kg	540	140	1
2,4-Dinitrotoluene	ND		ug/kg	230	110	1
2,6-Dinitrotoluene	ND		ug/kg	540	93.	1
Azobenzene	ND		ug/kg	540	52.	1
Fluoranthene	ND		ug/kg	320	62.	1
4-Bromophenyl phenyl ether	ND		ug/kg	540	83.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	92.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	580	54.	1
Hexachlorobutadiene	ND		ug/kg	540	79.	1
Hexachloroethane	ND		ug/kg	230	88.	1
Isophorone	ND		ug/kg	490	70.	1
Naphthalene	ND		ug/kg	540	66.	1
Nitrobenzene	ND		ug/kg	490	80.	1
Bis(2-ethylhexyl)phthalate	370	J	ug/kg	540	190	1
Butyl benzyl phthalate	ND		ug/kg	540	140	1
Di-n-butylphthalate	ND		ug/kg	540	100	1
Di-n-octylphthalate	ND		ug/kg	540	180	1
Diethyl phthalate	ND		ug/kg	540	50.	1
Dimethyl phthalate	ND		ug/kg	230	110	1
Benzo(a)anthracene	ND		ug/kg	320	61.	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01 Date Collected: 11/24/20 08:45

Client ID: GREENFIELD TURF Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	430	130	1
Benzo(b)fluoranthene	ND		ug/kg	320	91.	1
Benzo(k)fluoranthene	ND		ug/kg	320	87.	1
Chrysene	ND		ug/kg	320	56.	1
Acenaphthylene	ND		ug/kg	430	84.	1
Anthracene	ND		ug/kg	320	100	1
Benzo(ghi)perylene	ND		ug/kg	430	64.	1
Fluorene	ND		ug/kg	540	53.	1
Phenanthrene	ND		ug/kg	320	66.	1
Dibenzo(a,h)anthracene	ND		ug/kg	230	63.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	430	76.	1
Pyrene	ND		ug/kg	320	54.	1
Aniline	ND		ug/kg	650	260	1
4-Chloroaniline	ND		ug/kg	540	98.	1
Dibenzofuran	ND		ug/kg	540	51.	1
2-Methylnaphthalene	ND		ug/kg	230	65.	1
Acetophenone	ND		ug/kg	540	67.	1
2,4,6-Trichlorophenol	ND		ug/kg	230	100	1
2-Chlorophenol	ND		ug/kg	230	64.	1
2,4-Dichlorophenol	ND		ug/kg	230	87.	1
2,4-Dimethylphenol	ND		ug/kg	230	180	1
2-Nitrophenol	ND		ug/kg	1200	200	1
4-Nitrophenol	ND		ug/kg	760	220	1
2,4-Dinitrophenol	ND		ug/kg	2600	250	1
Pentachlorophenol	ND		ug/kg	1100	120	1
Phenol	160	J	ug/kg	540	82.	1
2-Methylphenol	ND		ug/kg	540	84.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	780	85.	1
2,4,5-Trichlorophenol	ND		ug/kg	540	100	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01 Date Collected: 11/24/20 08:45

Client ID: GREENFIELD TURF Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	82		30-130
Phenol-d6	91		30-130
Nitrobenzene-d5	93		30-130
2-Fluorobiphenyl	76		30-130
2,4,6-Tribromophenol	82		30-130
4-Terphenyl-d14	85		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 1,8270D
Analytical Date: 12/20/20 09:48
Analyst: WR
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/13/20 14:27

Extraction Method: EPA 3510C
Extraction Date: 12/19/20 21:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	1.1	1
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58	1
Hexachlorobenzene	ND		ug/l	2.0	0.69	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88	1
2-Chloronaphthalene	ND		ug/l	2.0	0.54	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37	1
Azobenzene	ND		ug/l	2.0	0.81	1
Fluoranthene	ND		ug/l	2.0	0.65	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5	1
Hexachlorobutadiene	ND		ug/l	2.0	0.60	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.61	1
Hexachloroethane	ND		ug/l	2.0	0.44	1
Isophorone	ND		ug/l	5.0	0.66	1
Naphthalene	ND		ug/l	2.0	0.67	1
Nitrobenzene	ND		ug/l	2.0	0.66	1
NDPA/DPA	ND		ug/l	2.0	0.65	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	2.2	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02 Date Collected: 11/24/20 09:15

Client ID: BROCK SHOCK PAD Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Di-n-butylphthalate	ND		ug/l	5.0	0.58	1
Di-n-octylphthalate	ND		ug/l	5.0	2.4	1
Diethyl phthalate	ND		ug/l	5.0	4.3	1
Dimethyl phthalate	ND		ug/l	5.0	4.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.77	1
Benzo(a)pyrene	ND		ug/l	2.0	0.45	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82	1
Chrysene	ND		ug/l	2.0	0.83	1
Acenaphthylene	ND		ug/l	2.0	0.59	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.77	1
Fluorene	ND		ug/l	2.0	1.0	1
Phenanthrene	ND		ug/l	2.0	0.99	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94	1
Pyrene	ND		ug/l	2.0	0.70	1
Biphenyl	ND		ug/l	2.0	0.64	1
Aniline	ND		ug/l	2.0	0.48	1
4-Chloroaniline	ND		ug/l	5.0	0.65	1
1-Methylnaphthalene	ND		ug/l	2.0	0.60	1
2-Nitroaniline	ND		ug/l	5.0	0.52	1
3-Nitroaniline	ND		ug/l	5.0	0.57	1
4-Nitroaniline	ND		ug/l	5.0	0.58	1
Dibenzofuran	ND		ug/l	2.0	0.82	1
2-Methylnaphthalene	ND		ug/l	2.0	0.68	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.41	1
2-Chlorophenol	ND		ug/l	2.0	0.40	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.53	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.1	1
2-Nitrophenol	ND		ug/l	10	0.46	1
4-Nitrophenol	ND		ug/l	10	1.1	1
2,4-Dinitrophenol	ND		ug/l	20	3.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4	1
Pentachlorophenol	ND		ug/l	10	2.0	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02 Date Collected: 11/24/20 09:15

Client ID: BROCK SHOCK PAD Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Phenol	ND		ug/l	5.0	1.3	1
2-Methylphenol	ND		ug/l	5.0	1.1	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	ND		ug/l	2.0	0.70	1
Carbazole	ND		ug/l	2.0	0.76	1
Pyridine	ND		ug/l	3.5	0.90	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	82		15-120
2,4,6-Tribromophenol	95		10-120
4-Terphenyl-d14	91		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/18/20 20:15
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/12/20 14:27

Extraction Method: ALPHA 23528
Extraction Date: 12/18/20 07:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.84		ng/l	1.75	0.357	1
Perfluoropentanoic Acid (PFPeA)	1.52	J	ng/l	1.75	0.347	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.75	0.208	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.75	0.396	1
Perfluorohexanoic Acid (PFHxA)	1.03	J	ng/l	1.75	0.287	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.75	0.215	1
Perfluoroheptanoic Acid (PFHpA)	1.00	J	ng/l	1.75	0.197	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.75	0.329	1
Perfluorooctanoic Acid (PFOA)	0.403	JFB	ng/l	1.75	0.207	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.75	1.17	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.75	0.603	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.75	0.273	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.75	0.442	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.75	0.266	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.75	1.06	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.75	0.981	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.75	0.568	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.75	0.228	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.75	0.858	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.75	0.508	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.75	0.704	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.75	0.326	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.75	0.287	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.75	0.217	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02 Date Collected: 11/24/20 09:15

Client ID: BROCK SHOCK PAD Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	96		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	160		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	87		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	58		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 04:47
Analyst: HT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	9.52	0.216	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	9.52	0.438	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	9.52	0.371	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	9.52	0.614	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	9.52	0.500	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	9.52	0.795	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	9.52	0.430	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	9.52	0.576	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	9.52	0.399	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	9.52	1.71	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	9.52	1.30	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	9.52	0.714	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	9.52	1.24	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	9.52	0.638	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	9.52	2.73	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	9.52	2.85	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	9.52	1.92	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	9.52	0.446	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	9.52	1.46	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	9.52	0.933	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	9.52	0.805	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	9.52	0.667	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	9.52	1.95	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	9.52	0.514	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02 Date Collected: 11/24/20 09:15

Client ID: BROCK SHOCK PAD Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	86		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	93		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	121		56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	99		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	101		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	96		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	88		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	120		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	99		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	49		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	56		26-160

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 97,8270D
Analytical Date: 12/14/20 22:06
Analyst: WR
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	550	71.	1
1,2,4-Trichlorobenzene	ND		ug/kg	690	79.	1
Hexachlorobenzene	ND		ug/kg	290	77.	1
Bis(2-chloroethyl)ether	ND		ug/kg	290	93.	1
2-Chloronaphthalene	ND		ug/kg	690	68.	1
1,2-Dichlorobenzene	ND		ug/kg	690	120	1
1,3-Dichlorobenzene	ND		ug/kg	690	120	1
1,4-Dichlorobenzene	ND		ug/kg	290	120	1
3,3'-Dichlorobenzidine	ND		ug/kg	690	180	1
2,4-Dinitrotoluene	ND		ug/kg	290	140	1
2,6-Dinitrotoluene	ND		ug/kg	690	120	1
Azobenzene	ND		ug/kg	690	66.	1
Fluoranthene	ND		ug/kg	410	79.	1
4-Bromophenyl phenyl ether	ND		ug/kg	690	100	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	290	120	1
Bis(2-chloroethoxy)methane	ND		ug/kg	740	69.	1
Hexachlorobutadiene	ND		ug/kg	690	100	1
Hexachloroethane	ND		ug/kg	290	110	1
Isophorone	ND		ug/kg	620	89.	1
Naphthalene	ND		ug/kg	690	84.	1
Nitrobenzene	ND		ug/kg	620	100	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	690	240	1
Butyl benzyl phthalate	ND		ug/kg	690	170	1
Di-n-butylphthalate	ND		ug/kg	690	130	1
Di-n-octylphthalate	ND		ug/kg	690	230	1
Diethyl phthalate	ND		ug/kg	690	64.	1
Dimethyl phthalate	ND		ug/kg	290	140	1
Benzo(a)anthracene	ND		ug/kg	410	78.	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02 Date Collected: 11/24/20 09:15

Client ID: BROCK SHOCK PAD Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	550	170	1
Benzo(b)fluoranthene	ND		ug/kg	410	120	1
Benzo(k)fluoranthene	ND		ug/kg	410	110	1
Chrysene	ND		ug/kg	410	72.	1
Acenaphthylene	ND		ug/kg	550	110	1
Anthracene	ND		ug/kg	410	130	1
Benzo(ghi)perylene	ND		ug/kg	550	81.	1
Fluorene	ND		ug/kg	690	67.	1
Phenanthrene	ND		ug/kg	410	84.	1
Dibenzo(a,h)anthracene	ND		ug/kg	290	80.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	550	96.	1
Pyrene	ND		ug/kg	410	68.	1
Aniline	ND		ug/kg	830	320	1
4-Chloroaniline	ND		ug/kg	690	120	1
Dibenzofuran	ND		ug/kg	690	65.	1
2-Methylnaphthalene	ND		ug/kg	290	83.	1
Acetophenone	ND		ug/kg	690	85.	1
2,4,6-Trichlorophenol	ND		ug/kg	290	130	1
2-Chlorophenol	ND		ug/kg	290	81.	1
2,4-Dichlorophenol	ND		ug/kg	290	110	1
2,4-Dimethylphenol	ND		ug/kg	290	230	1
2-Nitrophenol	ND		ug/kg	1500	260	1
4-Nitrophenol	ND		ug/kg	960	280	1
2,4-Dinitrophenol	ND		ug/kg	3300	320	1
Pentachlorophenol	ND		ug/kg	1400	150	1
Phenol	ND		ug/kg	690	100	1
2-Methylphenol	ND		ug/kg	690	110	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	990	110	1
2,4,5-Trichlorophenol	ND		ug/kg	690	130	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02 Date Collected: 11/24/20 09:15

Client ID: BROCK SHOCK PAD Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		30-130
Phenol-d6	94		30-130
Nitrobenzene-d5	99		30-130
2-Fluorobiphenyl	82		30-130
2,4,6-Tribromophenol	81		30-130
4-Terphenyl-d14	86		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 1,8270D
Analytical Date: 12/18/20 10:33
Analyst: IM
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 06:55

Extraction Method: EPA 3510C
Extraction Date: 12/15/20 18:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	1.1	1
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58	1
Hexachlorobenzene	ND		ug/l	2.0	0.69	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88	1
2-Chloronaphthalene	ND		ug/l	2.0	0.54	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37	1
Azobenzene	ND		ug/l	2.0	0.81	1
Fluoranthene	ND		ug/l	2.0	0.65	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5	1
Hexachlorobutadiene	ND		ug/l	2.0	0.60	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.61	1
Hexachloroethane	ND		ug/l	2.0	0.44	1
Isophorone	ND		ug/l	5.0	0.66	1
Naphthalene	ND		ug/l	2.0	0.67	1
Nitrobenzene	ND		ug/l	2.0	0.66	1
NDPA/DPA	ND		ug/l	2.0	0.65	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	2.2	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 Date Collected: 11/24/20 09:30

Client ID: BROCK FILL Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Di-n-butylphthalate	ND		ug/l	5.0	0.58	1
Di-n-octylphthalate	ND		ug/l	5.0	2.4	1
Diethyl phthalate	ND		ug/l	5.0	4.3	1
Dimethyl phthalate	ND		ug/l	5.0	4.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.77	1
Benzo(a)pyrene	ND		ug/l	2.0	0.45	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82	1
Chrysene	ND		ug/l	2.0	0.83	1
Acenaphthylene	ND		ug/l	2.0	0.59	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.77	1
Fluorene	ND		ug/l	2.0	1.0	1
Phenanthrene	ND		ug/l	2.0	0.99	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94	1
Pyrene	ND		ug/l	2.0	0.70	1
Biphenyl	ND		ug/l	2.0	0.64	1
Aniline	ND		ug/l	2.0	0.48	1
4-Chloroaniline	ND		ug/l	5.0	0.65	1
1-Methylnaphthalene	ND		ug/l	2.0	0.60	1
2-Nitroaniline	ND		ug/l	5.0	0.52	1
3-Nitroaniline	ND		ug/l	5.0	0.57	1
4-Nitroaniline	ND		ug/l	5.0	0.58	1
Dibenzofuran	ND		ug/l	2.0	0.82	1
2-Methylnaphthalene	ND		ug/l	2.0	0.68	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.41	1
2-Chlorophenol	ND		ug/l	2.0	0.40	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.53	1
2,4-Dimethylphenol	1.8	J	ug/l	5.0	1.1	1
2-Nitrophenol	ND		ug/l	10	0.46	1
4-Nitrophenol	ND		ug/l	10	1.1	1
2,4-Dinitrophenol	ND		ug/l	20	3.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4	1
Pentachlorophenol	ND		ug/l	10	2.0	1

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Phenol	16.		ug/l	5.0	1.3	1
2-Methylphenol	8.8		ug/l	5.0	1.1	1
3-Methylphenol/4-Methylphenol	16.		ug/l	5.0	0.55	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	15.		ug/l	2.0	0.70	1
Carbazole	ND		ug/l	2.0	0.76	1
Pyridine	ND		ug/l	3.5	0.90	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	73		15-120
2,4,6-Tribromophenol	84		10-120
4-Terphenyl-d14	60		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/13/20 14:10
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 21:55

Extraction Method: ALPHA 23528
Extraction Date: 12/12/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.77	0.362	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.77	0.351	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.77	0.211	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.77	0.401	1
Perfluorohexanoic Acid (PFHxA)	2.88	F	ng/l	1.77	0.291	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.77	0.217	1
Perfluoroheptanoic Acid (PFHpA)	5.01	F	ng/l	1.77	0.200	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.77	0.333	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.77	0.209	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.77	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.77	0.610	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.77	0.277	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.77	0.447	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.77	0.270	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.77	1.08	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.77	0.993	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.77	0.575	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.77	0.231	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.77	0.869	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.77	0.514	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.77	0.713	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.77	0.330	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.77	0.290	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.77	0.220	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 Date Collected: 11/24/20 09:30

Client ID: BROCK FILL Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	56		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	94		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**331**	Q	1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	104		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	83		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**438**	Q	1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**198**	Q	34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**563**	Q	7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	123		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	27		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	34		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 05:04
Analyst: HT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	2.84	0.064	1
Perfluoropentanoic Acid (PFPeA)	0.455	J	ng/g	2.84	0.130	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	2.84	0.111	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	2.84	0.183	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	2.84	0.149	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	2.84	0.237	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	2.84	0.128	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	2.84	0.172	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	2.84	0.119	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	2.84	0.509	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	2.84	0.387	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	2.84	0.213	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	2.84	0.369	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	2.84	0.190	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	2.84	0.814	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	2.84	0.848	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	2.84	0.572	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	2.84	0.133	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	2.84	0.434	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	2.84	0.278	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	2.84	0.240	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	2.84	0.198	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	2.84	0.580	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	2.84	0.153	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 Date Collected: 11/24/20 09:30

Client ID: BROCK FILL Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**489**	Q	56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**637**	Q	32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	86		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**525**	Q	25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**158**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	95		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	22		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**166**	Q	42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	58		26-160

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 D
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 1,8270D
Analytical Date: 12/15/20 18:17
Analyst: JRW
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzyl Alcohol	4400		ug/kg	1700	510	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	71		10-136
4-Terphenyl-d14	72		18-120

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 D
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 97,8270D
Analytical Date: 12/15/20 18:17
Analyst: JRW
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	1300	170	10
1,2,4-Trichlorobenzene	ND		ug/kg	1700	190	10
Hexachlorobenzene	ND		ug/kg	700	180	10
Bis(2-chloroethyl)ether	ND		ug/kg	700	220	10
2-Chloronaphthalene	ND		ug/kg	1700	160	10
1,2-Dichlorobenzene	ND		ug/kg	1700	300	10
1,3-Dichlorobenzene	ND		ug/kg	1700	280	10
1,4-Dichlorobenzene	ND		ug/kg	700	290	10
3,3'-Dichlorobenzidine	ND		ug/kg	1700	440	10
2,4-Dinitrotoluene	ND		ug/kg	700	330	10
2,6-Dinitrotoluene	ND		ug/kg	1700	280	10
Azobenzene	ND		ug/kg	1700	160	10
Fluoranthene	ND		ug/kg	1000	190	10
4-Bromophenyl phenyl ether	ND		ug/kg	1700	250	10
Bis(2-chloroisopropyl)ether	ND		ug/kg	700	280	10
Bis(2-chloroethoxy)methane	ND		ug/kg	1800	170	10
Hexachlorobutadiene	ND		ug/kg	1700	240	10
Hexachloroethane	ND		ug/kg	700	270	10
Isophorone	ND		ug/kg	1500	220	10
Naphthalene	ND		ug/kg	1700	200	10
Nitrobenzene	ND		ug/kg	1500	240	10
Bis(2-ethylhexyl)phthalate	ND		ug/kg	1700	570	10
Butyl benzyl phthalate	ND		ug/kg	1700	420	10
Di-n-butylphthalate	ND		ug/kg	1700	310	10
Di-n-octylphthalate	ND		ug/kg	1700	560	10
Diethyl phthalate	ND		ug/kg	1700	150	10
Dimethyl phthalate	ND		ug/kg	700	350	10
Benzo(a)anthracene	ND		ug/kg	1000	190	10

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 D Date Collected: 11/24/20 09:30

Client ID: BROCK FILL Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	1300	400	10
Benzo(b)fluoranthene	ND		ug/kg	1000	280	10
Benzo(k)fluoranthene	ND		ug/kg	1000	260	10
Chrysene	ND		ug/kg	1000	170	10
Acenaphthylene	ND		ug/kg	1300	260	10
Anthracene	ND		ug/kg	1000	320	10
Benzo(ghi)perylene	ND		ug/kg	1300	200	10
Fluorene	ND		ug/kg	1700	160	10
Phenanthrene	ND		ug/kg	1000	200	10
Dibenzo(a,h)anthracene	ND		ug/kg	700	190	10
Indeno(1,2,3-cd)pyrene	ND		ug/kg	1300	230	10
Pyrene	ND		ug/kg	1000	160	10
Aniline	ND		ug/kg	2000	780	10
4-Chloroaniline	ND		ug/kg	1700	300	10
Dibenzofuran	ND		ug/kg	1700	160	10
2-Methylnaphthalene	ND		ug/kg	700	200	10
Acetophenone	ND		ug/kg	1700	200	10
2,4,6-Trichlorophenol	ND		ug/kg	700	310	10
2-Chlorophenol	ND		ug/kg	700	200	10
2,4-Dichlorophenol	ND		ug/kg	700	270	10
2,4-Dimethylphenol	ND		ug/kg	700	550	10
2-Nitrophenol	ND		ug/kg	3600	620	10
4-Nitrophenol	ND		ug/kg	2300	680	10
2,4-Dinitrophenol	ND		ug/kg	8000	770	10
Pentachlorophenol	ND		ug/kg	3300	360	10
Phenol	6900		ug/kg	1700	250	10
2-Methylphenol	310	J	ug/kg	1700	260	10
3-Methylphenol/4-Methylphenol	630	J	ug/kg	2400	260	10
2,4,5-Trichlorophenol	ND		ug/kg	1700	320	10

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03 D
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	86		30-130
2-Fluorobiphenyl	71		30-130
2,4,6-Tribromophenol	71		30-130
4-Terphenyl-d14	72		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 1,8270D
Analytical Date: 12/18/20 10:58
Analyst: IM
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 06:55

Extraction Method: EPA 3510C
Extraction Date: 12/15/20 18:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	1.1	1
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58	1
Hexachlorobenzene	ND		ug/l	2.0	0.69	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88	1
2-Chloronaphthalene	ND		ug/l	2.0	0.54	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37	1
Azobenzene	ND		ug/l	2.0	0.81	1
Fluoranthene	ND		ug/l	2.0	0.65	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5	1
Hexachlorobutadiene	ND		ug/l	2.0	0.60	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.61	1
Hexachloroethane	ND		ug/l	2.0	0.44	1
Isophorone	ND		ug/l	5.0	0.66	1
Naphthalene	ND		ug/l	2.0	0.67	1
Nitrobenzene	ND		ug/l	2.0	0.66	1
NDPA/DPA	ND		ug/l	2.0	0.65	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	2.2	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 Date Collected: 11/24/20 09:45

Client ID: REYNOLDS 775 GLUE Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Di-n-butylphthalate	ND		ug/l	5.0	0.58	1
Di-n-octylphthalate	ND		ug/l	5.0	2.4	1
Diethyl phthalate	ND		ug/l	5.0	4.3	1
Dimethyl phthalate	ND		ug/l	5.0	4.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.77	1
Benzo(a)pyrene	ND		ug/l	2.0	0.45	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82	1
Chrysene	ND		ug/l	2.0	0.83	1
Acenaphthylene	ND		ug/l	2.0	0.59	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.77	1
Fluorene	ND		ug/l	2.0	1.0	1
Phenanthrene	ND		ug/l	2.0	0.99	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94	1
Pyrene	ND		ug/l	2.0	0.70	1
Biphenyl	ND		ug/l	2.0	0.64	1
Aniline	ND		ug/l	2.0	0.48	1
4-Chloroaniline	ND		ug/l	5.0	0.65	1
1-Methylnaphthalene	ND		ug/l	2.0	0.60	1
2-Nitroaniline	ND		ug/l	5.0	0.52	1
3-Nitroaniline	ND		ug/l	5.0	0.57	1
4-Nitroaniline	ND		ug/l	5.0	0.58	1
Dibenzofuran	ND		ug/l	2.0	0.82	1
2-Methylnaphthalene	ND		ug/l	2.0	0.68	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.41	1
2-Chlorophenol	ND		ug/l	2.0	0.40	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.53	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.1	1
2-Nitrophenol	ND		ug/l	10	0.46	1
4-Nitrophenol	ND		ug/l	10	1.1	1
2,4-Dinitrophenol	ND		ug/l	20	3.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4	1
Pentachlorophenol	ND		ug/l	10	2.0	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 Date Collected: 11/24/20 09:45

Client ID: REYNOLDS 775 GLUE Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Phenol	ND		ug/l	5.0	1.3	1
2-Methylphenol	ND		ug/l	5.0	1.1	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	ND		ug/l	2.0	0.70	1
Carbazole	ND		ug/l	2.0	0.76	1
Pyridine	ND		ug/l	3.5	0.90	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	83		15-120
2,4,6-Tribromophenol	93		10-120
4-Terphenyl-d14	82		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/13/20 14:43
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 21:55

Extraction Method: ALPHA 23528
Extraction Date: 12/12/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.81	0.369	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.81	0.358	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	0.215	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	0.408	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.81	0.296	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	0.222	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.81	0.204	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	0.340	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.81	0.213	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	1.20	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	0.622	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	0.282	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	0.456	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	0.275	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	1.10	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	1.01	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	0.586	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	0.235	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	0.886	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	0.524	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	0.727	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	0.336	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	0.296	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	0.224	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 Date Collected: 11/24/20 09:45

Client ID: REYNOLDS 775 GLUE Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	104		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	181		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	192		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	149		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**261**	Q	1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	4		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 05:37
Analyst: HT
Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.973	0.022	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.973	0.045	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.973	0.038	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.973	0.063	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.973	0.051	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.973	0.081	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.973	0.044	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.973	0.059	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.973	0.041	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.973	0.175	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.973	0.133	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.973	0.073	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.973	0.126	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.973	0.065	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.973	0.279	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.973	0.291	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.973	0.196	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.973	0.046	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.973	0.149	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.973	0.095	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.973	0.082	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.973	0.068	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.973	0.199	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.973	0.053	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 Date Collected: 11/24/20 09:45

Client ID: REYNOLDS 775 GLUE Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**147**	Q	56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	99		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	125		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	142		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**331**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	106		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		26-160

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 D
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 97,8270D
Analytical Date: 12/14/20 22:29
Analyst: WR
Percent Solids:

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	39000	5000	300
1,2,4-Trichlorobenzene	ND		ug/kg	48000	5600	300
Hexachlorobenzene	ND		ug/kg	20000	5400	300
Bis(2-chloroethyl)ether	ND		ug/kg	20000	6600	300
2-Chloronaphthalene	ND		ug/kg	48000	4800	300
1,2-Dichlorobenzene	ND		ug/kg	48000	8700	300
1,3-Dichlorobenzene	ND		ug/kg	48000	8400	300
1,4-Dichlorobenzene	ND		ug/kg	20000	8500	300
3,3'-Dichlorobenzidine	ND		ug/kg	48000	13000	300
2,4-Dinitrotoluene	ND		ug/kg	20000	9700	300
2,6-Dinitrotoluene	ND		ug/kg	48000	8300	300
Azobenzene	ND		ug/kg	48000	4700	300
Fluoranthene	ND		ug/kg	29000	5600	300
4-Bromophenyl phenyl ether	ND		ug/kg	48000	7400	300
Bis(2-chloroisopropyl)ether	ND		ug/kg	20000	8300	300
Bis(2-chloroethoxy)methane	ND		ug/kg	52000	4900	300
Hexachlorobutadiene	ND		ug/kg	48000	7100	300
Hexachloroethane	ND		ug/kg	20000	7800	300
Isophorone	ND		ug/kg	44000	6300	300
Naphthalene	ND		ug/kg	48000	5900	300
Nitrobenzene	ND		ug/kg	44000	7200	300
Bis(2-ethylhexyl)phthalate	ND		ug/kg	48000	17000	300
Butyl benzyl phthalate	ND		ug/kg	48000	12000	300
Di-n-butylphthalate	ND		ug/kg	48000	9200	300
Di-n-octylphthalate	ND		ug/kg	48000	16000	300
Diethyl phthalate	ND		ug/kg	48000	4500	300
Dimethyl phthalate	ND		ug/kg	20000	10000	300
Benzo(a)anthracene	ND		ug/kg	29000	5500	300

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 D
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	39000	12000	300
Benzo(b)fluoranthene	ND		ug/kg	29000	8200	300
Benzo(k)fluoranthene	ND		ug/kg	29000	7800	300
Chrysene	ND		ug/kg	29000	5000	300
Acenaphthylene	ND		ug/kg	39000	7500	300
Anthracene	ND		ug/kg	29000	9500	300
Benzo(ghi)perylene	ND		ug/kg	39000	5700	300
Fluorene	ND		ug/kg	48000	4700	300
Phenanthrene	ND		ug/kg	29000	5900	300
Dibenzo(a,h)anthracene	ND		ug/kg	20000	5600	300
Indeno(1,2,3-cd)pyrene	ND		ug/kg	39000	6800	300
Pyrene	ND		ug/kg	29000	4800	300
Aniline	ND		ug/kg	58000	23000	300
4-Chloroaniline	ND		ug/kg	48000	8800	300
Dibenzofuran	ND		ug/kg	48000	4600	300
2-Methylnaphthalene	ND		ug/kg	20000	5900	300
Acetophenone	ND		ug/kg	48000	6000	300
2,4,6-Trichlorophenol	ND		ug/kg	20000	9200	300
2-Chlorophenol	ND		ug/kg	20000	5700	300
2,4-Dichlorophenol	ND		ug/kg	20000	7800	300
2,4-Dimethylphenol	ND		ug/kg	20000	16000	300
2-Nitrophenol	ND		ug/kg	100000	18000	300
4-Nitrophenol	ND		ug/kg	68000	20000	300
2,4-Dinitrophenol	ND		ug/kg	230000	23000	300
Pentachlorophenol	ND		ug/kg	97000	11000	300
Phenol	ND		ug/kg	48000	7300	300
2-Methylphenol	ND		ug/kg	48000	7500	300
3-Methylphenol/4-Methylphenol	ND		ug/kg	70000	7600	300
2,4,5-Trichlorophenol	ND		ug/kg	48000	9300	300

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04 D
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	30-130
Phenol-d6	**0**	Q	30-130
Nitrobenzene-d5	**0**	Q	30-130
2-Fluorobiphenyl	**0**	Q	30-130
2,4,6-Tribromophenol	**0**	Q	30-130
4-Terphenyl-d14	**0**	Q	30-130

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 1,8270D
Analytical Date: 12/24/20 08:26
Analyst: SZ
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/19/20 14:40

Extraction Method: EPA 3510C
Extraction Date: 12/23/20 21:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	1.1	1
Benzidine	ND		ug/l	20	8.1	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58	1
Hexachlorobenzene	ND		ug/l	2.0	0.69	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88	1
2-Chloronaphthalene	ND		ug/l	2.0	0.54	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85	1
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37	1
Azobenzene	ND		ug/l	2.0	0.81	1
Fluoranthene	ND		ug/l	2.0	0.65	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5	1
Hexachlorobutadiene	ND		ug/l	2.0	0.60	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.61	1
Hexachloroethane	ND		ug/l	2.0	0.44	1
Isophorone	ND		ug/l	5.0	0.66	1
Naphthalene	ND		ug/l	2.0	0.67	1
Nitrobenzene	ND		ug/l	2.0	0.66	1
NDPA/DPA	ND		ug/l	2.0	0.65	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	2.2	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 Date Collected: 11/24/20 10:30

Client ID: MAPEI ULTRA BOND Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Di-n-butylphthalate	ND		ug/l	5.0	0.58	1
Di-n-octylphthalate	ND		ug/l	5.0	2.4	1
Diethyl phthalate	ND		ug/l	5.0	4.3	1
Dimethyl phthalate	ND		ug/l	5.0	4.4	1
Benzo(a)anthracene	ND		ug/l	2.0	0.77	1
Benzo(a)pyrene	ND		ug/l	2.0	0.45	1
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81	1
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82	1
Chrysene	ND		ug/l	2.0	0.83	1
Acenaphthylene	ND		ug/l	2.0	0.59	1
Anthracene	ND		ug/l	2.0	0.79	1
Benzo(ghi)perylene	ND		ug/l	2.0	0.77	1
Fluorene	ND		ug/l	2.0	1.0	1
Phenanthrene	ND		ug/l	2.0	0.99	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94	1
Pyrene	ND		ug/l	2.0	0.70	1
Biphenyl	ND		ug/l	2.0	0.64	1
Aniline	ND		ug/l	2.0	0.48	1
4-Chloroaniline	ND		ug/l	5.0	0.65	1
1-Methylnaphthalene	ND		ug/l	2.0	0.60	1
2-Nitroaniline	ND		ug/l	5.0	0.52	1
3-Nitroaniline	ND		ug/l	5.0	0.57	1
4-Nitroaniline	ND		ug/l	5.0	0.58	1
Dibenzofuran	ND		ug/l	2.0	0.82	1
2-Methylnaphthalene	ND		ug/l	2.0	0.68	1
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.41	1
2-Chlorophenol	ND		ug/l	2.0	0.40	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.53	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.1	1
2-Nitrophenol	ND		ug/l	10	0.46	1
4-Nitrophenol	ND		ug/l	10	1.1	1
2,4-Dinitrophenol	ND		ug/l	20	3.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4	1
Pentachlorophenol	ND		ug/l	10	2.0	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 Date Collected: 11/24/20 10:30

Client ID: MAPEI ULTRA BOND Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Semivolatiles by EPA 1312 - Westborough Lab						
Phenol	ND		ug/l	5.0	1.3	1
2-Methylphenol	ND		ug/l	5.0	1.1	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38	1
Benzoic Acid	ND		ug/l	50	13.	1
Benzyl Alcohol	ND		ug/l	2.0	0.70	1
Carbazole	ND		ug/l	2.0	0.76	1
Pyridine	ND		ug/l	3.5	0.90	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	33		21-120
Phenol-d6	24		10-120
Nitrobenzene-d5	46		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	93		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/23/20 07:38
Analyst: RS
Percent Solids: Results reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/18/20 17:04

Extraction Method: ALPHA 23528
Extraction Date: 12/21/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.83	0.373	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.83	0.362	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	0.217	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.83	0.413	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.83	0.300	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.83	0.224	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.83	0.206	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.83	0.343	1
Perfluorooctanoic Acid (PFOA)	0.395	J	ng/l	1.83	0.216	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	1.22	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.628	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	0.285	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.83	0.460	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.278	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	1.11	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.83	1.02	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.592	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.238	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.895	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.530	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.734	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.340	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.299	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.226	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 Date Collected: 11/24/20 10:30

Client ID: MAPEI ULTRA BOND Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	126		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	134		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**332**	Q	1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	124		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	123		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	107		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	103		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	120		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	114		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	135		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	91		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	119		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	21		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	109		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 06:10
Analyst: HT
Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Percent Solids: Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	1.66	0.038	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	1.66	0.076	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	1.66	0.065	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.66	0.107	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	1.66	0.087	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.66	0.138	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	1.66	0.075	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	1.66	0.100	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	1.66	0.070	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.848	JF	ng/g	1.66	0.298	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	1.66	0.226	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	1.66	0.124	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	1.66	0.216	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	1.66	0.111	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	1.66	0.476	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.66	0.496	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	1.66	0.334	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	1.66	0.078	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	1.66	0.254	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	1.66	0.163	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	1.66	0.140	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	1.66	0.116	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	1.66	0.339	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	1.66	0.090	1

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 Date Collected: 11/24/20 10:30

Client ID: MAPEI ULTRA BOND Date Received: 11/24/20

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	79		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**540**	Q	56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	138		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**155**	Q	62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	88		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**340**	Q	32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**212**	Q	25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	119		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	19		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	61		26-160

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 D
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 97,8270D
Analytical Date: 12/15/20 02:16
Analyst: JG
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 19:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	3800	500	5
1,2,4-Trichlorobenzene	ND		ug/kg	4800	550	5
Hexachlorobenzene	ND		ug/kg	2000	540	5
Bis(2-chloroethyl)ether	ND		ug/kg	2000	650	5
2-Chloronaphthalene	ND		ug/kg	4800	480	5
1,2-Dichlorobenzene	ND		ug/kg	4800	860	5
1,3-Dichlorobenzene	ND		ug/kg	4800	830	5
1,4-Dichlorobenzene	ND		ug/kg	2000	840	5
3,3'-Dichlorobenzidine	ND		ug/kg	4800	1300	5
2,4-Dinitrotoluene	ND		ug/kg	2000	960	5
2,6-Dinitrotoluene	ND		ug/kg	4800	830	5
Azobenzene	ND		ug/kg	4800	460	5
Fluoranthene	ND		ug/kg	2900	550	5
4-Bromophenyl phenyl ether	ND		ug/kg	4800	740	5
Bis(2-chloroisopropyl)ether	ND		ug/kg	2000	820	5
Bis(2-chloroethoxy)methane	ND		ug/kg	5200	480	5
Hexachlorobutadiene	ND		ug/kg	4800	700	5
Hexachloroethane	ND		ug/kg	2000	780	5
Isophorone	ND		ug/kg	4300	620	5
Naphthalene	ND		ug/kg	4800	590	5
Nitrobenzene	ND		ug/kg	4300	710	5
Bis(2-ethylhexyl)phthalate	ND		ug/kg	4800	1700	5
Butyl benzyl phthalate	ND		ug/kg	4800	1200	5
Di-n-butylphthalate	ND		ug/kg	4800	910	5
Di-n-octylphthalate	ND		ug/kg	4800	1600	5
Diethyl phthalate	ND		ug/kg	4800	450	5
Dimethyl phthalate	ND		ug/kg	2000	1000	5
Benzo(a)anthracene	ND		ug/kg	2900	540	5

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 D
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	3800	1200	5
Benzo(b)fluoranthene	ND		ug/kg	2900	810	5
Benzo(k)fluoranthene	ND		ug/kg	2900	770	5
Chrysene	ND		ug/kg	2900	500	5
Acenaphthylene	ND		ug/kg	3800	740	5
Anthracene	ND		ug/kg	2900	940	5
Benzo(ghi)perylene	ND		ug/kg	3800	570	5
Fluorene	ND		ug/kg	4800	470	5
Phenanthrene	ND		ug/kg	2900	580	5
Dibenzo(a,h)anthracene	ND		ug/kg	2000	560	5
Indeno(1,2,3-cd)pyrene	ND		ug/kg	3800	670	5
Pyrene	ND		ug/kg	2900	480	5
Aniline	ND		ug/kg	5800	2300	5
4-Chloroaniline	ND		ug/kg	4800	880	5
Dibenzofuran	ND		ug/kg	4800	460	5
2-Methylnaphthalene	ND		ug/kg	2000	580	5
Acetophenone	ND		ug/kg	4800	600	5
2,4,6-Trichlorophenol	ND		ug/kg	2000	910	5
2-Chlorophenol	ND		ug/kg	2000	570	5
2,4-Dichlorophenol	ND		ug/kg	2000	770	5
2,4-Dimethylphenol	ND		ug/kg	2000	1600	5
2-Nitrophenol	ND		ug/kg	10000	1800	5
4-Nitrophenol	ND		ug/kg	6700	2000	5
2,4-Dinitrophenol	ND		ug/kg	23000	2200	5
Pentachlorophenol	ND		ug/kg	9600	1000	5
Phenol	ND		ug/kg	4800	730	5
2-Methylphenol	ND		ug/kg	4800	750	5
3-Methylphenol/4-Methylphenol	ND		ug/kg	6900	750	5
2,4,5-Trichlorophenol	ND		ug/kg	4800	920	5

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05 D
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		30-130
Phenol-d6	46		30-130
Nitrobenzene-d5	55		30-130
2-Fluorobiphenyl	49		30-130
2,4,6-Tribromophenol	33		30-130
4-Terphenyl-d14	57		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 03:41
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1442230-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	1.00	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	1.00	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	1.00	0.039
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.00	0.065
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	1.00	0.053
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00	0.084
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	1.00	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	1.00	0.061
Perfluorooctanoic Acid (PFOA)	ND		ng/g	1.00	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	1.00	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	1.00	0.136
Perfluorononanoic Acid (PFNA)	ND		ng/g	1.00	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	1.00	0.130
Perfluorodecanoic Acid (PFDA)	ND		ng/g	1.00	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	1.00	0.287
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00	0.299
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	1.00	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	1.00	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	1.00	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	1.00	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	1.00	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	1.00	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	1.00	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	1.00	0.054

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/09/20 03:41
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 12/08/20 10:15

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1442230-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	83		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	105		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	92		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	128		56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	86		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	103		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	112		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	64		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		26-160

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/13/20 13:04
Analyst: SG
TCLP/SPLP Extraction Date:

Extraction Method: ALPHA 23528
Extraction Date: 12/12/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 03-04 Batch: WG1444345-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	0.452
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	0.245
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	1.12
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/13/20 13:04
Analyst: SG
TCLP/SPLP Extraction Date:

Extraction Method: ALPHA 23528
Extraction Date: 12/12/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 03-04 Batch: WG1444345-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	94		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	115		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	139		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	108		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	119		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	97		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	92		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	109		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	87		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	38		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	76		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/13/20 13:21
Analyst: SG
TCLP/SPLP Extraction Date: 12/08/20 21:55

Extraction Method: ALPHA 23528
Extraction Date: 12/12/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 03-04 Batch: WG1444345-6					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.81	0.370
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.81	0.359
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.81	0.216
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.81	0.409
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.81	0.297
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.81	0.222
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.81	0.204
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.81	0.340
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.81	0.214
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.81	1.21
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.81	0.623
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.81	0.283
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.81	0.456
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.81	0.275
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.81	1.10
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.81	1.01
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.81	0.587
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.81	0.236
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.81	0.888
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.81	0.525
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.81	0.728
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.81	0.337
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.81	0.296
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.81	0.225

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/13/20 13:21
Analyst: SG
TCLP/SPLP Extraction Date: 12/08/20 21:55

Extraction Method: ALPHA 23528
Extraction Date: 12/12/20 12:45

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 03-04 Batch: WG1444345-6					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	89		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	106		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	130		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	101		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	91		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	113		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	111		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	82		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	99		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	6		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	92		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04 Batch: WG1444455-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	170	19.
Hexachlorobenzene	ND		ug/kg	70	18.
Bis(2-chloroethyl)ether	ND		ug/kg	70	22.
2-Chloronaphthalene	ND		ug/kg	170	16.
1,2-Dichlorobenzene	ND		ug/kg	170	30.
1,3-Dichlorobenzene	ND		ug/kg	170	28.
1,4-Dichlorobenzene	ND		ug/kg	70	29.
3,3'-Dichlorobenzidine	ND		ug/kg	170	44.
2,4-Dinitrotoluene	ND		ug/kg	70	33.
2,6-Dinitrotoluene	ND		ug/kg	170	28.
Azobenzene	ND		ug/kg	170	16.
Fluoranthene	ND		ug/kg	100	19.
4-Bromophenyl phenyl ether	ND		ug/kg	170	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	70	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.
Hexachlorobutadiene	ND		ug/kg	170	24.
Hexachloroethane	ND		ug/kg	70	27.
Isophorone	ND		ug/kg	150	22.
Naphthalene	ND		ug/kg	170	20.
Nitrobenzene	ND		ug/kg	150	24.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	57.
Butyl benzyl phthalate	ND		ug/kg	170	42.
Di-n-butylphthalate	ND		ug/kg	170	31.
Di-n-octylphthalate	ND		ug/kg	170	56.
Diethyl phthalate	ND		ug/kg	170	15.
Dimethyl phthalate	ND		ug/kg	70	35.
Benzo(a)anthracene	ND		ug/kg	100	19.
Benzo(a)pyrene	ND		ug/kg	130	40.

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04 Batch: WG1444455-1					
Benzo(b)fluoranthene	ND		ug/kg	100	28.
Benzo(k)fluoranthene	ND		ug/kg	100	26.
Chrysene	ND		ug/kg	100	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	100	32.
Benzo(ghi)perylene	ND		ug/kg	130	20.
Fluorene	ND		ug/kg	170	16.
Phenanthrene	ND		ug/kg	100	20.
Dibenzo(a,h)anthracene	ND		ug/kg	70	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	100	16.
Aniline	ND		ug/kg	200	78.
4-Chloroaniline	ND		ug/kg	170	30.
Dibenzofuran	ND		ug/kg	170	16.
2-Methylnaphthalene	ND		ug/kg	70	20.
Acetophenone	ND		ug/kg	170	20.
2,4,6-Trichlorophenol	ND		ug/kg	70	31.
2-Chlorophenol	ND		ug/kg	70	20.
2,4-Dichlorophenol	ND		ug/kg	70	27.
2,4-Dimethylphenol	ND		ug/kg	70	55.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	68.
2,4-Dinitrophenol	ND		ug/kg	800	77.
Pentachlorophenol	ND		ug/kg	330	36.
Phenol	ND		ug/kg	170	25.
2-Methylphenol	ND		ug/kg	170	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	170	32.

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04 Batch: WG1444455-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	91		30-130
Nitrobenzene-d5	95		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	84		30-130
4-Terphenyl-d14	92		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/15/20 01:29
Analyst: IM

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 19:40

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 05 Batch: WG1444604-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	68	18.
Bis(2-chloroethyl)ether	ND		ug/kg	68	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	68	28.
3,3'-Dichlorobenzidine	ND		ug/kg	160	43.
2,4-Dinitrotoluene	ND		ug/kg	68	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Azobenzene	ND		ug/kg	160	16.
Fluoranthene	ND		ug/kg	98	19.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	68	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachloroethane	ND		ug/kg	68	26.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	56.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.
Dimethyl phthalate	ND		ug/kg	68	34.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/15/20 01:29
Analyst: IM

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 19:40

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 05 Batch: WG1444604-1					
Benzo(b)fluoranthene	ND		ug/kg	98	27.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	68	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Aniline	ND		ug/kg	200	77.
4-Chloroaniline	ND		ug/kg	160	30.
Dibenzofuran	ND		ug/kg	160	15.
2-Methylnaphthalene	ND		ug/kg	68	20.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	68	31.
2-Chlorophenol	ND		ug/kg	68	19.
2,4-Dichlorophenol	ND		ug/kg	68	26.
2,4-Dimethylphenol	ND		ug/kg	68	54.
2-Nitrophenol	ND		ug/kg	350	61.
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	780	76.
Pentachlorophenol	ND		ug/kg	330	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/15/20 01:29
Analyst: IM

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 19:40

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 05 Batch: WG1444604-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		30-130
Phenol-d6	69		30-130
Nitrobenzene-d5	69		30-130
2-Fluorobiphenyl	74		30-130
2,4,6-Tribromophenol	75		30-130
4-Terphenyl-d14	75		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/18/20 08:25
Analyst: IM
TCLP/SPLP Extraction Date: 12/08/20 06:55

Extraction Method: EPA 3510C
Extraction Date: 12/15/20 18:50

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 01,03-04 Batch: WG1445550-1					
Acenaphthene	ND		ug/l	2.0	1.1
Benzidine	ND		ug/l	20	8.1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58
Hexachlorobenzene	ND		ug/l	2.0	0.69
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88
2-Chloronaphthalene	ND		ug/l	2.0	0.54
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37
Azobenzene	ND		ug/l	2.0	0.81
Fluoranthene	ND		ug/l	2.0	0.65
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5
Hexachlorobutadiene	ND		ug/l	2.0	0.60
Hexachlorocyclopentadiene	ND		ug/l	20	0.61
Hexachloroethane	ND		ug/l	2.0	0.44
Isophorone	ND		ug/l	5.0	0.66
Naphthalene	ND		ug/l	2.0	0.67
Nitrobenzene	ND		ug/l	2.0	0.66
NDPA/DPA	ND		ug/l	2.0	0.65
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	2.2
Di-n-butylphthalate	ND		ug/l	5.0	0.58

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/18/20 08:25
Analyst: IM
TCLP/SPLP Extraction Date: 12/08/20 06:55

Extraction Method: EPA 3510C
Extraction Date: 12/15/20 18:50

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 01,03-04 Batch: WG1445550-1					
Di-n-octylphthalate	ND		ug/l	5.0	2.4
Diethyl phthalate	ND		ug/l	5.0	4.3
Dimethyl phthalate	ND		ug/l	5.0	4.4
Benzo(a)anthracene	ND		ug/l	2.0	0.77
Benzo(a)pyrene	ND		ug/l	2.0	0.45
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82
Chrysene	ND		ug/l	2.0	0.83
Acenaphthylene	ND		ug/l	2.0	0.59
Anthracene	ND		ug/l	2.0	0.79
Benzo(ghi)perylene	ND		ug/l	2.0	0.77
Fluorene	ND		ug/l	2.0	1.0
Phenanthrene	ND		ug/l	2.0	0.99
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94
Pyrene	ND		ug/l	2.0	0.70
Biphenyl	ND		ug/l	2.0	0.64
Aniline	ND		ug/l	2.0	0.48
4-Chloroaniline	ND		ug/l	5.0	0.65
1-Methylnaphthalene	ND		ug/l	2.0	0.60
2-Nitroaniline	ND		ug/l	5.0	0.52
3-Nitroaniline	ND		ug/l	5.0	0.57
4-Nitroaniline	ND		ug/l	5.0	0.58
Dibenzofuran	ND		ug/l	2.0	0.82
2-Methylnaphthalene	ND		ug/l	2.0	0.68
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49
p-Chloro-m-cresol	ND		ug/l	2.0	0.41
2-Chlorophenol	ND		ug/l	2.0	0.40

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/18/20 08:25
Analyst: IM
TCLP/SPLP Extraction Date: 12/08/20 06:55

Extraction Method: EPA 3510C
Extraction Date: 12/15/20 18:50

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 01,03-04 Batch: WG1445550-1					
2,4-Dichlorophenol	ND		ug/l	5.0	0.53
2,4-Dimethylphenol	ND		ug/l	5.0	1.1
2-Nitrophenol	ND		ug/l	10	0.46
4-Nitrophenol	ND		ug/l	10	1.1
2,4-Dinitrophenol	ND		ug/l	20	3.6
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4
Pentachlorophenol	ND		ug/l	10	2.0
Phenol	ND		ug/l	5.0	1.3
2-Methylphenol	ND		ug/l	5.0	1.1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38
Benzoic Acid	ND		ug/l	50	13.
Benzyl Alcohol	ND		ug/l	2.0	0.70
Carbazole	ND		ug/l	2.0	0.76
Pyridine	ND		ug/l	3.5	0.90

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	40		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	64		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	72		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/18/20 18:35
Analyst: SG
TCLP/SPLP Extraction Date:

Extraction Method: ALPHA 23528
Extraction Date: 12/18/20 07:40

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 01-02 Batch: WG1446532-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	0.452
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	0.245
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	3.33	F	ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	1.12
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/18/20 18:35
Analyst: SG
TCLP/SPLP Extraction Date:

Extraction Method: ALPHA 23528
Extraction Date: 12/18/20 07:40

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 01-02 Batch: WG1446532-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	78		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	89		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	78		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	83		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	87		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	95		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	72		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	87		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	79		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	77		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	82		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	80		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	51		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	76		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	53		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/18/20 18:52
Analyst: SG
TCLP/SPLP Extraction Date: 12/12/20 14:27

Extraction Method: ALPHA 23528
Extraction Date: 12/18/20 07:40

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 01-02 Batch: WG1446532-6					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.83	0.374
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.83	0.363
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.83	0.218
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.83	0.414
Perfluorohexanoic Acid (PFHxA)	0.429	JF	ng/l	1.83	0.301
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.83	0.225
Perfluoroheptanoic Acid (PFHpA)	1.32	J	ng/l	1.83	0.206
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.83	0.345
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.83	0.216
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.83	1.22
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.83	0.631
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.83	0.286
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.83	0.462
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.83	0.279
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.83	1.11
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.83	1.03
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.594
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.238
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.83	0.898
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.83	0.532
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.737
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.341
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.300
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.227

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/18/20 18:52
Analyst: SG
TCLP/SPLP Extraction Date: 12/12/20 14:27

Extraction Method: ALPHA 23528
Extraction Date: 12/18/20 07:40

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 01-02 Batch: WG1446532-6					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	78		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	75		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	86		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	89		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	67		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	87		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	81		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	72		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	88		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	4		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	55		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/20/20 08:40
Analyst: WR
TCLP/SPLP Extraction Date: 12/13/20 14:27

Extraction Method: EPA 3510C
Extraction Date: 12/19/20 21:59

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 02 Batch: WG1447256-1					
Acenaphthene	ND		ug/l	2.0	1.1
Benzidine	ND		ug/l	20	8.1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58
Hexachlorobenzene	ND		ug/l	2.0	0.69
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88
2-Chloronaphthalene	ND		ug/l	2.0	0.54
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37
Azobenzene	ND		ug/l	2.0	0.81
Fluoranthene	ND		ug/l	2.0	0.65
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5
Hexachlorobutadiene	ND		ug/l	2.0	0.60
Hexachlorocyclopentadiene	ND		ug/l	20	0.61
Hexachloroethane	ND		ug/l	2.0	0.44
Isophorone	ND		ug/l	5.0	0.66
Naphthalene	ND		ug/l	2.0	0.67
Nitrobenzene	ND		ug/l	2.0	0.66
NDPA/DPA	ND		ug/l	2.0	0.65
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	2.2
Di-n-butylphthalate	ND		ug/l	5.0	0.58

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/20/20 08:40
Analyst: WR
TCLP/SPLP Extraction Date: 12/13/20 14:27

Extraction Method: EPA 3510C
Extraction Date: 12/19/20 21:59

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 02 Batch: WG1447256-1					
Di-n-octylphthalate	ND		ug/l	5.0	2.4
Diethyl phthalate	ND		ug/l	5.0	4.3
Dimethyl phthalate	ND		ug/l	5.0	4.4
Benzo(a)anthracene	ND		ug/l	2.0	0.77
Benzo(a)pyrene	ND		ug/l	2.0	0.45
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82
Chrysene	ND		ug/l	2.0	0.83
Acenaphthylene	ND		ug/l	2.0	0.59
Anthracene	ND		ug/l	2.0	0.79
Benzo(ghi)perylene	ND		ug/l	2.0	0.77
Fluorene	ND		ug/l	2.0	1.0
Phenanthrene	ND		ug/l	2.0	0.99
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94
Pyrene	ND		ug/l	2.0	0.70
Biphenyl	ND		ug/l	2.0	0.64
Aniline	ND		ug/l	2.0	0.48
4-Chloroaniline	ND		ug/l	5.0	0.65
1-Methylnaphthalene	ND		ug/l	2.0	0.60
2-Nitroaniline	ND		ug/l	5.0	0.52
3-Nitroaniline	ND		ug/l	5.0	0.57
4-Nitroaniline	ND		ug/l	5.0	0.58
Dibenzofuran	ND		ug/l	2.0	0.82
2-Methylnaphthalene	ND		ug/l	2.0	0.68
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49
p-Chloro-m-cresol	ND		ug/l	2.0	0.41
2-Chlorophenol	ND		ug/l	2.0	0.40

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/20/20 08:40
Analyst: WR
TCLP/SPLP Extraction Date: 12/13/20 14:27

Extraction Method: EPA 3510C
Extraction Date: 12/19/20 21:59

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 02 Batch: WG1447256-1					
2,4-Dichlorophenol	ND		ug/l	5.0	0.53
2,4-Dimethylphenol	ND		ug/l	5.0	1.1
2-Nitrophenol	ND		ug/l	10	0.46
4-Nitrophenol	ND		ug/l	10	1.1
2,4-Dinitrophenol	ND		ug/l	20	3.6
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4
Pentachlorophenol	ND		ug/l	10	2.0
Phenol	ND		ug/l	5.0	1.3
2-Methylphenol	ND		ug/l	5.0	1.1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38
Benzoic Acid	ND		ug/l	50	13.
Benzyl Alcohol	ND		ug/l	2.0	0.70
Carbazole	ND		ug/l	2.0	0.76
Pyridine	ND		ug/l	3.5	0.90

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	83		15-120
2,4,6-Tribromophenol	97		10-120
4-Terphenyl-d14	100		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/23/20 06:48
Analyst: RS
TCLP/SPLP Extraction Date:

Extraction Method: ALPHA 23528
Extraction Date: 12/21/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 05 Batch: WG1447672-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	2.00	0.452
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	2.00	0.245
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	2.00	1.12
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/23/20 06:48
Analyst: RS
TCLP/SPLP Extraction Date:

Extraction Method: ALPHA 23528
Extraction Date: 12/21/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 05 Batch: WG1447672-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	105		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	123		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	130		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	90		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	117		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	109		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	104		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	86		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	114		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	101		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	103		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	85		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	107		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	59		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	93		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	93		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/23/20 08:11
Analyst: RS
TCLP/SPLP Extraction Date: 12/18/20 17:04

Extraction Method: ALPHA 23528
Extraction Date: 12/21/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 05 Batch: WG1447672-5					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.86	0.379
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.86	0.367
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.86	0.221
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.86	0.419
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.86	0.304
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.86	0.228
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.209
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.349
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	0.219
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.86	1.24
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.86	0.638
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.290
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.86	0.468
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.282
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.86	1.12
Perfluorononanesulfonic Acid (PFNS)	ND		ng/l	1.86	1.04
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.601
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.241
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.86	0.909
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.86	0.538
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.746
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.345
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.304
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.230

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 12/23/20 08:11
Analyst: RS
TCLP/SPLP Extraction Date: 12/18/20 17:04

Extraction Method: ALPHA 23528
Extraction Date: 12/21/20 12:00

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab for sample(s): 05 Batch: WG1447672-5					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	105		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	126		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	139		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	92		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	121		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	114		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	109		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	91		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	119		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	107		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	106		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	92		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	88		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	90		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	97		33-143

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/24/20 06:35
Analyst: SZ
TCLP/SPLP Extraction Date: 12/19/20 14:40

Extraction Method: EPA 3510C
Extraction Date: 12/23/20 21:15

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 05 Batch: WG1448815-1					
Acenaphthene	ND		ug/l	2.0	1.1
Benzidine	ND		ug/l	20	8.1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.58
Hexachlorobenzene	ND		ug/l	2.0	0.69
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.88
2-Chloronaphthalene	ND		ug/l	2.0	0.54
1,2-Dichlorobenzene	ND		ug/l	2.0	0.64
1,3-Dichlorobenzene	ND		ug/l	2.0	0.64
1,4-Dichlorobenzene	ND		ug/l	2.0	0.46
3,3'-Dichlorobenzidine	ND		ug/l	5.0	0.85
2,4-Dinitrotoluene	ND		ug/l	5.0	0.38
2,6-Dinitrotoluene	ND		ug/l	5.0	0.37
Azobenzene	ND		ug/l	2.0	0.81
Fluoranthene	ND		ug/l	2.0	0.65
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.80
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.63
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	1.8
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	1.5
Hexachlorobutadiene	ND		ug/l	2.0	0.60
Hexachlorocyclopentadiene	ND		ug/l	20	0.61
Hexachloroethane	ND		ug/l	2.0	0.44
Isophorone	ND		ug/l	5.0	0.66
Naphthalene	ND		ug/l	2.0	0.67
Nitrobenzene	ND		ug/l	2.0	0.66
NDPA/DPA	ND		ug/l	2.0	0.65
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.77
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	2.2
Di-n-butylphthalate	ND		ug/l	5.0	0.58

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/24/20 06:35
Analyst: SZ
TCLP/SPLP Extraction Date: 12/19/20 14:40

Extraction Method: EPA 3510C
Extraction Date: 12/23/20 21:15

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 05 Batch: WG1448815-1					
Di-n-octylphthalate	ND		ug/l	5.0	2.4
Diethyl phthalate	ND		ug/l	5.0	4.3
Dimethyl phthalate	ND		ug/l	5.0	4.4
Benzo(a)anthracene	ND		ug/l	2.0	0.77
Benzo(a)pyrene	ND		ug/l	2.0	0.45
Benzo(b)fluoranthene	ND		ug/l	2.0	0.81
Benzo(k)fluoranthene	ND		ug/l	2.0	0.82
Chrysene	ND		ug/l	2.0	0.83
Acenaphthylene	ND		ug/l	2.0	0.59
Anthracene	ND		ug/l	2.0	0.79
Benzo(ghi)perylene	ND		ug/l	2.0	0.77
Fluorene	ND		ug/l	2.0	1.0
Phenanthrene	ND		ug/l	2.0	0.99
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.45
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.94
Pyrene	ND		ug/l	2.0	0.70
Biphenyl	ND		ug/l	2.0	0.64
Aniline	ND		ug/l	2.0	0.48
4-Chloroaniline	ND		ug/l	5.0	0.65
1-Methylnaphthalene	ND		ug/l	2.0	0.60
2-Nitroaniline	ND		ug/l	5.0	0.52
3-Nitroaniline	ND		ug/l	5.0	0.57
4-Nitroaniline	ND		ug/l	5.0	0.58
Dibenzofuran	ND		ug/l	2.0	0.82
2-Methylnaphthalene	ND		ug/l	2.0	0.68
n-Nitrosodimethylamine	ND		ug/l	2.0	0.52
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.49
p-Chloro-m-cresol	ND		ug/l	2.0	0.41
2-Chlorophenol	ND		ug/l	2.0	0.40

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/24/20 06:35
Analyst: SZ
TCLP/SPLP Extraction Date: 12/19/20 14:40

Extraction Method: EPA 3510C
Extraction Date: 12/23/20 21:15

Parameter	Result	Qualifier	Units	RL	MDL
SPLP Semivolatiles by EPA 1312 - Westborough Lab for sample(s): 05 Batch: WG1448815-1					
2,4-Dichlorophenol	ND		ug/l	5.0	0.53
2,4-Dimethylphenol	ND		ug/l	5.0	1.1
2-Nitrophenol	ND		ug/l	10	0.46
4-Nitrophenol	ND		ug/l	10	1.1
2,4-Dinitrophenol	ND		ug/l	20	3.6
4,6-Dinitro-o-cresol	ND		ug/l	10	5.4
Pentachlorophenol	ND		ug/l	10	2.0
Phenol	ND		ug/l	5.0	1.3
2-Methylphenol	ND		ug/l	5.0	1.1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.55
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.38
Benzoic Acid	ND		ug/l	50	13.
Benzyl Alcohol	ND		ug/l	2.0	0.70
Carbazole	ND		ug/l	2.0	0.76
Pyridine	ND		ug/l	3.5	0.90

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	27		10-120
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	59		15-120
2,4,6-Tribromophenol	60		10-120
4-Terphenyl-d14	66		41-149

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 03 Batch: WG1451440-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	170	19.
Hexachlorobenzene	ND		ug/kg	70	18.
Bis(2-chloroethyl)ether	ND		ug/kg	70	22.
2-Chloronaphthalene	ND		ug/kg	170	16.
1,2-Dichlorobenzene	ND		ug/kg	170	30.
1,3-Dichlorobenzene	ND		ug/kg	170	28.
1,4-Dichlorobenzene	ND		ug/kg	70	29.
3,3'-Dichlorobenzidine	ND		ug/kg	170	44.
2,4-Dinitrotoluene	ND		ug/kg	70	33.
2,6-Dinitrotoluene	ND		ug/kg	170	28.
Azobenzene	ND		ug/kg	170	16.
Fluoranthene	ND		ug/kg	100	19.
4-Bromophenyl phenyl ether	ND		ug/kg	170	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	70	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.
Hexachlorobutadiene	ND		ug/kg	170	24.
Hexachloroethane	ND		ug/kg	70	27.
Isophorone	ND		ug/kg	150	22.
Naphthalene	ND		ug/kg	170	20.
Nitrobenzene	ND		ug/kg	150	24.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	57.
Butyl benzyl phthalate	ND		ug/kg	170	42.
Di-n-butylphthalate	ND		ug/kg	170	31.
Di-n-octylphthalate	ND		ug/kg	170	56.
Diethyl phthalate	ND		ug/kg	170	15.
Dimethyl phthalate	ND		ug/kg	70	35.
Benzo(a)anthracene	ND		ug/kg	100	19.
Benzo(a)pyrene	ND		ug/kg	130	40.

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 03 Batch: WG1451440-1					
Benzo(b)fluoranthene	ND		ug/kg	100	28.
Benzo(k)fluoranthene	ND		ug/kg	100	26.
Chrysene	ND		ug/kg	100	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	100	32.
Benzo(ghi)perylene	ND		ug/kg	130	20.
Fluorene	ND		ug/kg	170	16.
Phenanthrene	ND		ug/kg	100	20.
Dibenzo(a,h)anthracene	ND		ug/kg	70	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	100	16.
Aniline	ND		ug/kg	200	78.
4-Chloroaniline	ND		ug/kg	170	30.
Dibenzofuran	ND		ug/kg	170	16.
2-Methylnaphthalene	ND		ug/kg	70	20.
Acetophenone	ND		ug/kg	170	20.
2,4,6-Trichlorophenol	ND		ug/kg	70	31.
2-Chlorophenol	ND		ug/kg	70	20.
2,4-Dichlorophenol	ND		ug/kg	70	27.
2,4-Dimethylphenol	ND		ug/kg	70	55.
2-Nitrophenol	ND		ug/kg	360	62.
4-Nitrophenol	ND		ug/kg	230	68.
2,4-Dinitrophenol	ND		ug/kg	800	77.
Pentachlorophenol	ND		ug/kg	330	36.
Phenol	ND		ug/kg	170	25.
2-Methylphenol	ND		ug/kg	170	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	170	32.

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 03 Batch: WG1451440-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		30-130
Phenol-d6	91		30-130
Nitrobenzene-d5	95		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	84		30-130
4-Terphenyl-d14	92		30-130

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 12/14/20 14:56
Analyst: WR

Extraction Method: EPA 3540C
Extraction Date: 12/13/20 01:10

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG1451486-1					
Benzyl Alcohol	ND		ug/kg	170	51.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		25-120
Phenol-d6	91		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	84		10-136
4-Terphenyl-d14	92		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1442230-2 WG1442230-3								
Perfluorobutanoic Acid (PFBA)	118		118		71-135	0		30
Perfluoropentanoic Acid (PFPeA)	125		122		69-132	2		30
Perfluorobutanesulfonic Acid (PFBS)	123		125		72-128	2		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	**166**	Q	**170**	Q	62-145	2		30
Perfluorohexanoic Acid (PFHxA)	121		121		70-132	0		30
Perfluoropentanesulfonic Acid (PFPeS)	122		118		73-123	3		30
Perfluoroheptanoic Acid (PFHpA)	115		115		71-131	0		30
Perfluorohexanesulfonic Acid (PFHxS)	122		121		67-130	1		30
Perfluorooctanoic Acid (PFOA)	119		118		69-133	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	129		130		64-140	1		30
Perfluoroheptanesulfonic Acid (PFHpS)	121		124		70-132	2		30
Perfluorononanoic Acid (PFNA)	113		111		72-129	2		30
Perfluorooctanesulfonic Acid (PFOS)	135		128		68-136	5		30
Perfluorodecanoic Acid (PFDA)	119		119		69-133	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	**148**	Q	**148**	Q	65-137	0		30
Perfluorononanesulfonic Acid (PFNS)	**131**	Q	**135**	Q	69-125	3		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	108		97		63-144	11		30
Perfluoroundecanoic Acid (PFUnA)	122		125		64-136	2		30
Perfluorodecanesulfonic Acid (PFDS)	**138**	Q	**142**	Q	59-134	3		30
Perfluorooctanesulfonamide (FOSA)	113		111		67-137	2		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	116		107		61-139	8		30
Perfluorododecanoic Acid (PFDoA)	118		117		69-135	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1442230-2 WG1442230-3								
Perfluorotridecanoic Acid (PFTrDA)	118		116		66-139	2		30
Perfluorotetradecanoic Acid (PFTA)	**163**	Q	**161**	Q	69-133	1		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	84		85		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		104		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	95		93		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	122		124		56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		95		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		97		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100		102		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	84		86		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	106		108		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		91		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	85		87		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	85		87		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	102		113		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76		81		45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	93		95		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	46		49		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	65		71		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	88		91		56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	57		59		26-160

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
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Lab Number: L2052415
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 Batch: WG1444345-2 WG1444345-3								
Perfluorobutanoic Acid (PFBA)	101		101		67-148	0		30
Perfluoropentanoic Acid (PFPeA)	101		101		63-161	0		30
Perfluorobutanesulfonic Acid (PFBS)	101		104		65-157	3		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	119		122		37-219	2		30
Perfluorohexanoic Acid (PFHxA)	102		103		69-168	1		30
Perfluoropentanesulfonic Acid (PFPeS)	100		102		52-156	2		30
Perfluoroheptanoic Acid (PFHpA)	100		98		58-159	2		30
Perfluorohexanesulfonic Acid (PFHxS)	103		102		69-177	1		30
Perfluorooctanoic Acid (PFOA)	98		97		63-159	1		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	108		116		49-187	7		30
Perfluoroheptanesulfonic Acid (PFHpS)	108		105		61-179	3		30
Perfluorononanoic Acid (PFNA)	92		91		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	106		111		52-151	5		30
Perfluorodecanoic Acid (PFDA)	102		100		63-171	2		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	125		118		56-173	6		30
Perfluorononanesulfonic Acid (PFNS)	106		110		48-150	4		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	100		88		60-166	13		30
Perfluoroundecanoic Acid (PFUnA)	103		103		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	105		116		38-156	10		30
Perfluorooctanesulfonamide (FOSA)	94		95		46-170	1		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	102		101		45-170	1		30
Perfluorododecanoic Acid (PFDoA)	104		105		67-153	1		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 Batch: WG1444345-2 WG1444345-3								
Perfluorotridecanoic Acid (PFTrDA)	108		108		48-158	0		30
Perfluorotetradecanoic Acid (PFTA)	119		116		59-182	3		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	96		95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	115		113		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		105		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	149		150		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	109		107		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		104		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	105		105		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	96		98		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	125		125		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		104		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		95		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94		94		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	129		140		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	91		104		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	101		100		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	40		39		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		89		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	101		100		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	76		77		33-143

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04 Batch: WG1444455-2 WG1444455-3								
Acenaphthene	81		79		40-140	3		30
1,2,4-Trichlorobenzene	81		79		40-140	3		30
Hexachlorobenzene	81		80		40-140	1		30
Bis(2-chloroethyl)ether	90		83		40-140	8		30
2-Chloronaphthalene	80		77		40-140	4		30
1,2-Dichlorobenzene	80		76		40-140	5		30
1,3-Dichlorobenzene	78		73		40-140	7		30
1,4-Dichlorobenzene	78		73		40-140	7		30
3,3'-Dichlorobenzidine	53		52		40-140	2		30
2,4-Dinitrotoluene	104		101		40-140	3		30
2,6-Dinitrotoluene	96		91		40-140	5		30
Azobenzene	94		89		40-140	5		30
Fluoranthene	86		84		40-140	2		30
4-Bromophenyl phenyl ether	88		87		40-140	1		30
Bis(2-chloroisopropyl)ether	119		102		40-140	15		30
Bis(2-chloroethoxy)methane	95		85		40-140	11		30
Hexachlorobutadiene	81		79		40-140	3		30
Hexachloroethane	88		80		40-140	10		30
Isophorone	93		85		40-140	9		30
Naphthalene	82		79		40-140	4		30
Nitrobenzene	98		90		40-140	9		30
Bis(2-ethylhexyl)phthalate	106		101		40-140	5		30
Butyl benzyl phthalate	104		102		40-140	2		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04 Batch: WG1444455-2 WG1444455-3								
Di-n-butylphthalate	100		96		40-140	4		30
Di-n-octylphthalate	102		100		40-140	2		30
Diethyl phthalate	91		88		40-140	3		30
Dimethyl phthalate	82		78		40-140	5		30
Benzo(a)anthracene	78		77		40-140	1		30
Benzo(a)pyrene	83		83		40-140	0		30
Benzo(b)fluoranthene	81		79		40-140	3		30
Benzo(k)fluoranthene	76		80		40-140	5		30
Chrysene	82		80		40-140	2		30
Acenaphthylene	79		75		40-140	5		30
Anthracene	84		82		40-140	2		30
Benzo(ghi)perylene	79		80		40-140	1		30
Fluorene	84		81		40-140	4		30
Phenanthrene	83		81		40-140	2		30
Dibenzo(a,h)anthracene	79		79		40-140	0		30
Indeno(1,2,3-cd)pyrene	81		79		40-140	3		30
Pyrene	85		84		40-140	1		30
Aniline	64		58		40-140	10		30
4-Chloroaniline	69		66		40-140	4		30
Dibenzofuran	81		78		40-140	4		30
2-Methylnaphthalene	83		79		40-140	5		30
Acetophenone	93		86		40-140	8		30
2,4,6-Trichlorophenol	82		81		30-130	1		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04 Batch: WG1444455-2 WG1444455-3								
2-Chlorophenol	90		83		30-130	8		30
2,4-Dichlorophenol	88		85		30-130	3		30
2,4-Dimethylphenol	88		85		30-130	3		30
2-Nitrophenol	107		102		30-130	5		30
4-Nitrophenol	106		105		30-130	1		30
2,4-Dinitrophenol	58		56		30-130	4		30
Pentachlorophenol	79		82		30-130	4		30
Phenol	81		75		30-130	8		30
2-Methylphenol	91		85		30-130	7		30
3-Methylphenol/4-Methylphenol	100		93		30-130	7		30
2,4,5-Trichlorophenol	84		84		30-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	87		80		30-130
Phenol-d6	93		84		30-130
Nitrobenzene-d5	101		92		30-130
2-Fluorobiphenyl	81		77		30-130
2,4,6-Tribromophenol	83		84		30-130
4-Terphenyl-d14	87		85		30-130

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 05 Batch: WG1444604-2 WG1444604-3								
Acenaphthene	61		60		40-140	2		30
1,2,4-Trichlorobenzene	66		65		40-140	2		30
Hexachlorobenzene	70		68		40-140	3		30
Bis(2-chloroethyl)ether	57		53		40-140	7		30
2-Chloronaphthalene	70		69		40-140	1		30
1,2-Dichlorobenzene	56		55		40-140	2		30
1,3-Dichlorobenzene	57		55		40-140	4		30
1,4-Dichlorobenzene	55		51		40-140	8		30
3,3'-Dichlorobenzidine	53		47		40-140	12		30
2,4-Dinitrotoluene	80		76		40-140	5		30
2,6-Dinitrotoluene	83		80		40-140	4		30
Azobenzene	67		63		40-140	6		30
Fluoranthene	69		69		40-140	0		30
4-Bromophenyl phenyl ether	81		77		40-140	5		30
Bis(2-chloroisopropyl)ether	52		51		40-140	2		30
Bis(2-chloroethoxy)methane	69		67		40-140	3		30
Hexachlorobutadiene	66		67		40-140	2		30
Hexachloroethane	51		51		40-140	0		30
Isophorone	64		61		40-140	5		30
Naphthalene	58		60		40-140	3		30
Nitrobenzene	70		68		40-140	3		30
Bis(2-ethylhexyl)phthalate	70		74		40-140	6		30
Butyl benzyl phthalate	72		72		40-140	0		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 05 Batch: WG1444604-2 WG1444604-3								
Di-n-butylphthalate	70		70		40-140	0		30
Di-n-octylphthalate	69		68		40-140	1		30
Diethyl phthalate	74		68		40-140	8		30
Dimethyl phthalate	76		74		40-140	3		30
Benzo(a)anthracene	67		66		40-140	2		30
Benzo(a)pyrene	69		68		40-140	1		30
Benzo(b)fluoranthene	68		67		40-140	1		30
Benzo(k)fluoranthene	57		57		40-140	0		30
Chrysene	60		60		40-140	0		30
Acenaphthylene	70		70		40-140	0		30
Anthracene	61		61		40-140	0		30
Benzo(ghi)perylene	65		65		40-140	0		30
Fluorene	72		68		40-140	6		30
Phenanthrene	64		63		40-140	2		30
Dibenzo(a,h)anthracene	67		65		40-140	3		30
Indeno(1,2,3-cd)pyrene	72		72		40-140	0		30
Pyrene	68		67		40-140	1		30
Aniline	52		50		40-140	4		30
4-Chloroaniline	58		51		40-140	13		30
Dibenzofuran	71		69		40-140	3		30
2-Methylnaphthalene	68		68		40-140	0		30
Acetophenone	79		76		40-140	4		30
2,4,6-Trichlorophenol	89		87		30-130	2		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 05 Batch: WG1444604-2 WG1444604-3								
2-Chlorophenol	65		62		30-130	5		30
2,4-Dichlorophenol	81		75		30-130	8		30
2,4-Dimethylphenol	69		68		30-130	1		30
2-Nitrophenol	71		69		30-130	3		30
4-Nitrophenol	83		77		30-130	8		30
2,4-Dinitrophenol	62		54		30-130	14		30
Pentachlorophenol	73		68		30-130	7		30
Phenol	67		65		30-130	3		30
2-Methylphenol	66		63		30-130	5		30
3-Methylphenol/4-Methylphenol	71		70		30-130	1		30
2,4,5-Trichlorophenol	82		77		30-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		60		30-130
Phenol-d6	70		67		30-130
Nitrobenzene-d5	71		69		30-130
2-Fluorobiphenyl	72		72		30-130
2,4,6-Tribromophenol	74		70		30-130
4-Terphenyl-d14	69		66		30-130

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1445550-2 WG1445550-3								
Acenaphthene	68		68		37-111	0		30
Benzidine	25		18		10-75	**33**	Q	30
1,2,4-Trichlorobenzene	60		58		39-98	3		30
Hexachlorobenzene	74		75		40-140	1		30
Bis(2-chloroethyl)ether	71		66		40-140	7		30
2-Chloronaphthalene	70		69		40-140	1		30
1,2-Dichlorobenzene	56		52		40-140	7		30
1,3-Dichlorobenzene	54		51		40-140	6		30
1,4-Dichlorobenzene	54		51		36-97	6		30
3,3'-Dichlorobenzidine	54		57		40-140	5		30
2,4-Dinitrotoluene	82		81		48-143	1		30
2,6-Dinitrotoluene	81		85		40-140	5		30
Azobenzene	95		96		40-140	1		30
Fluoranthene	74		75		40-140	1		30
4-Chlorophenyl phenyl ether	72		71		40-140	1		30
4-Bromophenyl phenyl ether	74		73		40-140	1		30
Bis(2-chloroisopropyl)ether	112		105		40-140	6		30
Bis(2-chloroethoxy)methane	79		76		40-140	4		30
Hexachlorobutadiene	62		59		40-140	5		30
Hexachlorocyclopentadiene	48		48		40-140	0		30
Hexachloroethane	63		58		40-140	8		30
Isophorone	83		82		40-140	1		30
Naphthalene	64		62		40-140	3		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1445550-2 WG1445550-3								
Nitrobenzene	78		77		40-140	1		30
NDPA/DPA	74		73		40-140	1		30
n-Nitrosodi-n-propylamine	85		82		29-132	4		30
Bis(2-ethylhexyl)phthalate	106		103		40-140	3		30
Butyl benzyl phthalate	101		102		40-140	1		30
Di-n-butylphthalate	92		90		40-140	2		30
Di-n-octylphthalate	101		98		40-140	3		30
Diethyl phthalate	81		83		40-140	2		30
Dimethyl phthalate	78		76		40-140	3		30
Benzo(a)anthracene	73		71		40-140	3		30
Benzo(a)pyrene	82		83		40-140	1		30
Benzo(b)fluoranthene	76		77		40-140	1		30
Benzo(k)fluoranthene	77		78		40-140	1		30
Chrysene	74		72		40-140	3		30
Acenaphthylene	69		70		45-123	1		30
Anthracene	73		72		40-140	1		30
Benzo(ghi)perylene	73		74		40-140	1		30
Fluorene	72		73		40-140	1		30
Phenanthrene	72		71		40-140	1		30
Dibenzo(a,h)anthracene	74		72		40-140	3		30
Indeno(1,2,3-cd)pyrene	77		77		40-140	0		30
Pyrene	73		74		26-127	1		30
Biphenyl	70		68		40-140	3		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1445550-2 WG1445550-3								
Aniline	46		44		40-140	4		30
4-Chloroaniline	75		73		40-140	3		30
1-Methylnaphthalene	79		76		41-103	4		30
2-Nitroaniline	85		83		52-143	2		30
3-Nitroaniline	48		56		25-145	15		30
4-Nitroaniline	75		75		51-143	0		30
Dibenzofuran	69		69		40-140	0		30
2-Methylnaphthalene	65		64		40-140	2		30
n-Nitrosodimethylamine	41		39		22-74	5		30
2,4,6-Trichlorophenol	78		77		30-130	1		30
p-Chloro-m-cresol	85		86		23-97	1		30
2-Chlorophenol	64		60		27-123	6		30
2,4-Dichlorophenol	71		70		30-130	1		30
2,4-Dimethylphenol	62		62		30-130	0		30
2-Nitrophenol	70		67		30-130	4		30
4-Nitrophenol	75		77		10-80	3		30
2,4-Dinitrophenol	70		65		20-130	7		30
4,6-Dinitro-o-cresol	82		87		20-164	6		30
Pentachlorophenol	59		60		9-103	2		30
Phenol	37		35		12-110	6		30
2-Methylphenol	60		58		30-130	3		30
3-Methylphenol/4-Methylphenol	61		62		30-130	2		30
2,4,5-Trichlorophenol	79		80		30-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 01,03-04 Batch: WG1445550-2 WG1445550-3								
Benzoic Acid	41		41		10-164	0		30
Benzyl Alcohol	69		69		26-116	0		30
Carbazole	74		74		55-144	0		30
Pyridine	34		28		10-66	19		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	44		41		21-120
Phenol-d6	35		34		10-120
Nitrobenzene-d5	79		76		23-120
2-Fluorobiphenyl	69		68		15-120
2,4,6-Tribromophenol	82		81		10-120
4-Terphenyl-d14	74		74		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1446532-2 WG1446532-3								
Perfluorobutanoic Acid (PFBA)	119		118		67-148	1		30
Perfluoropentanoic Acid (PFPeA)	125		123		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	121		126		65-157	4		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	161		162		37-219	1		30
Perfluorohexanoic Acid (PFHxA)	121		117		69-168	3		30
Perfluoropentanesulfonic Acid (PFPeS)	117		119		52-156	2		30
Perfluoroheptanoic Acid (PFHpA)	115		112		58-159	3		30
Perfluorohexanesulfonic Acid (PFHxS)	121		120		69-177	1		30
Perfluorooctanoic Acid (PFOA)	120		116		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	126		130		49-187	3		30
Perfluoroheptanesulfonic Acid (PFHpS)	138		129		61-179	7		30
Perfluorononanoic Acid (PFNA)	113		114		68-171	1		30
Perfluorooctanesulfonic Acid (PFOS)	138		134		52-151	3		30
Perfluorodecanoic Acid (PFDA)	121		118		63-171	3		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	168		149		56-173	12		30
Perfluorononanesulfonic Acid (PFNS)	136		135		48-150	1		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	109		99		60-166	10		30
Perfluoroundecanoic Acid (PFUnA)	126		121		60-153	4		30
Perfluorodecanesulfonic Acid (PFDS)	133		131		38-156	2		30
Perfluorooctanesulfonamide (FOSA)	117		107		46-170	9		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	140		128		45-170	9		30
Perfluorododecanoic Acid (PFDoA)	122		118		67-153	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1446532-2 WG1446532-3								
Perfluorotridecanoic Acid (PFTrDA)	122		113		48-158	8		30
Perfluorotetradecanoic Acid (PFTA)	173		163		59-182	6		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		81		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		106		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	90		94		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	81		89		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	90		89		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		91		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		99		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	82		83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		79		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	88		88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78		81		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		80		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	71		82		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	61		71		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	81		85		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	33		36		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52		55		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	79		84		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	54		56		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 02 Batch: WG1447256-2 WG1447256-3								
Acenaphthene	69		81		37-111	16		30
Benzidine	**8**	Q	**0**	Q	10-75	NC		30
1,2,4-Trichlorobenzene	65		74		39-98	13		30
Hexachlorobenzene	82		98		40-140	18		30
Bis(2-chloroethyl)ether	71		80		40-140	12		30
2-Chloronaphthalene	70		80		40-140	13		30
1,2-Dichlorobenzene	65		73		40-140	12		30
1,3-Dichlorobenzene	66		73		40-140	10		30
1,4-Dichlorobenzene	65		73		36-97	12		30
3,3'-Dichlorobenzidine	61		50		40-140	20		30
2,4-Dinitrotoluene	74		85		48-143	14		30
2,6-Dinitrotoluene	75		88		40-140	16		30
Azobenzene	67		78		40-140	15		30
Fluoranthene	75		88		40-140	16		30
4-Chlorophenyl phenyl ether	73		85		40-140	15		30
4-Bromophenyl phenyl ether	77		91		40-140	17		30
Bis(2-chloroisopropyl)ether	64		71		40-140	10		30
Bis(2-chloroethoxy)methane	73		83		40-140	13		30
Hexachlorobutadiene	69		77		40-140	11		30
Hexachlorocyclopentadiene	47		56		40-140	17		30
Hexachloroethane	60		69		40-140	14		30
Isophorone	69		80		40-140	15		30
Naphthalene	70		78		40-140	11		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 02 Batch: WG1447256-2 WG1447256-3								
Nitrobenzene	66		74		40-140	11		30
NDPA/DPA	71		83		40-140	16		30
n-Nitrosodi-n-propylamine	71		81		29-132	13		30
Bis(2-ethylhexyl)phthalate	78		94		40-140	19		30
Butyl benzyl phthalate	78		92		40-140	16		30
Di-n-butylphthalate	79		94		40-140	17		30
Di-n-octylphthalate	80		95		40-140	17		30
Diethyl phthalate	70		84		40-140	18		30
Dimethyl phthalate	70		84		40-140	18		30
Benzo(a)anthracene	74		87		40-140	16		30
Benzo(a)pyrene	73		88		40-140	19		30
Benzo(b)fluoranthene	74		90		40-140	20		30
Benzo(k)fluoranthene	74		88		40-140	17		30
Chrysene	72		86		40-140	18		30
Acenaphthylene	75		86		45-123	14		30
Anthracene	75		88		40-140	16		30
Benzo(ghi)perylene	74		90		40-140	20		30
Fluorene	70		83		40-140	17		30
Phenanthrene	73		87		40-140	18		30
Dibenzo(a,h)anthracene	77		93		40-140	19		30
Indeno(1,2,3-cd)pyrene	76		92		40-140	19		30
Pyrene	77		90		26-127	16		30
Biphenyl	75		87		40-140	15		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 02 Batch: WG1447256-2 WG1447256-3								
Aniline	**22**	Q	**6**	Q	40-140	**114**	Q	30
4-Chloroaniline	**30**	Q	**21**	Q	40-140	**35**	Q	30
1-Methylnaphthalene	62		71		41-103	14		30
2-Nitroaniline	74		87		52-143	16		30
3-Nitroaniline	50		48		25-145	4		30
4-Nitroaniline	66		78		51-143	17		30
Dibenzofuran	70		82		40-140	16		30
2-Methylnaphthalene	70		79		40-140	12		30
n-Nitrosodimethylamine	40		46		22-74	14		30
2,4,6-Trichlorophenol	79		92		30-130	15		30
p-Chloro-m-cresol	70		83		23-97	17		30
2-Chlorophenol	71		81		27-123	13		30
2,4-Dichlorophenol	75		85		30-130	13		30
2,4-Dimethylphenol	70		66		30-130	6		30
2-Nitrophenol	74		82		30-130	10		30
4-Nitrophenol	41		51		10-80	22		30
2,4-Dinitrophenol	75		88		20-130	16		30
4,6-Dinitro-o-cresol	73		87		20-164	18		30
Pentachlorophenol	81		97		9-103	18		30
Phenol	33		37		12-110	11		30
2-Methylphenol	63		70		30-130	11		30
3-Methylphenol/4-Methylphenol	59		67		30-130	13		30
2,4,5-Trichlorophenol	78		91		30-130	15		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 02 Batch: WG1447256-2 WG1447256-3								
Benzoic Acid	48		57		10-164	17		30
Benzyl Alcohol	54		61		26-116	12		30
Carbazole	77		90		55-144	16		30
Pyridine	14		**8**	Q	10-66	**60**	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		58		21-120
Phenol-d6	34		39		10-120
Nitrobenzene-d5	71		80		23-120
2-Fluorobiphenyl	78		87		15-120
2,4,6-Tribromophenol	92		108		10-120
4-Terphenyl-d14	89		105		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 05 Batch: WG1447672-2 WG1447672-3								
Perfluorobutanoic Acid (PFBA)	96		98		67-148	2		30
Perfluoropentanoic Acid (PFPeA)	96		98		63-161	2		30
Perfluorobutanesulfonic Acid (PFBS)	92		96		65-157	4		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	96		96		37-219	0		30
Perfluorohexanoic Acid (PFHxA)	98		100		69-168	2		30
Perfluoropentanesulfonic Acid (PFPeS)	108		114		52-156	5		30
Perfluoroheptanoic Acid (PFHpA)	96		97		58-159	1		30
Perfluorohexanesulfonic Acid (PFHxS)	100		102		69-177	2		30
Perfluorooctanoic Acid (PFOA)	95		98		63-159	3		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	104		103		49-187	1		30
Perfluoroheptanesulfonic Acid (PFHpS)	95		98		61-179	3		30
Perfluorononanoic Acid (PFNA)	94		96		68-171	2		30
Perfluorooctanesulfonic Acid (PFOS)	97		99		52-151	2		30
Perfluorodecanoic Acid (PFDA)	98		98		63-171	0		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	105		108		56-173	3		30
Perfluorononanesulfonic Acid (PFNS)	97		102		48-150	5		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	96		94		60-166	2		30
Perfluoroundecanoic Acid (PFUnA)	95		95		60-153	0		30
Perfluorodecanesulfonic Acid (PFDS)	93		93		38-156	0		30
Perfluorooctanesulfonamide (FOSA)	94		102		46-170	8		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	101		104		45-170	3		30
Perfluorododecanoic Acid (PFDoA)	98		105		67-153	7		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 05 Batch: WG1447672-2 WG1447672-3								
Perfluorotridecanoic Acid (PFTrDA)	101		111		48-158	9		30
Perfluorotetradecanoic Acid (PFTA)	100		102		59-182	2		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	109		106		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	126		123		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	138		135		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	98		98		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	124		122		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	116		113		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	113		114		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	109		106		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	93		92		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	119		119		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	113		110		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	108		105		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	111		99		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	94		95		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	113		109		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	74		63		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	89		85		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	104		93		24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	102		97		33-143

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 05 Batch: WG1448815-2 WG1448815-3								
Acenaphthene	74		67		37-111	10		30
Benzidine	**4**	Q	**2**	Q	10-75	**87**	Q	30
1,2,4-Trichlorobenzene	68		61		39-98	11		30
Hexachlorobenzene	76		72		40-140	5		30
Bis(2-chloroethyl)ether	73		65		40-140	12		30
2-Chloronaphthalene	72		74		40-140	3		30
1,2-Dichlorobenzene	69		62		40-140	11		30
1,3-Dichlorobenzene	69		57		40-140	19		30
1,4-Dichlorobenzene	68		62		36-97	9		30
3,3'-Dichlorobenzidine	52		56		40-140	7		30
2,4-Dinitrotoluene	79		75		48-143	5		30
2,6-Dinitrotoluene	74		78		40-140	5		30
Azobenzene	75		68		40-140	10		30
Fluoranthene	79		83		40-140	5		30
4-Chlorophenyl phenyl ether	75		71		40-140	5		30
4-Bromophenyl phenyl ether	75		76		40-140	1		30
Bis(2-chloroisopropyl)ether	70		58		40-140	19		30
Bis(2-chloroethoxy)methane	71		62		40-140	14		30
Hexachlorobutadiene	71		67		40-140	6		30
Hexachlorocyclopentadiene	60		61		40-140	2		30
Hexachloroethane	67		55		40-140	20		30
Isophorone	68		63		40-140	8		30
Naphthalene	73		66		40-140	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 05 Batch: WG1448815-2 WG1448815-3								
Nitrobenzene	72		68		40-140	6		30
NDPA/DPA	75		70		40-140	7		30
n-Nitrosodi-n-propylamine	71		62		29-132	14		30
Bis(2-ethylhexyl)phthalate	82		76		40-140	8		30
Butyl benzyl phthalate	83		84		40-140	1		30
Di-n-butylphthalate	81		82		40-140	1		30
Di-n-octylphthalate	85		78		40-140	9		30
Diethyl phthalate	77		73		40-140	5		30
Dimethyl phthalate	74		77		40-140	4		30
Benzo(a)anthracene	76		70		40-140	8		30
Benzo(a)pyrene	81		77		40-140	5		30
Benzo(b)fluoranthene	79		72		40-140	9		30
Benzo(k)fluoranthene	77		76		40-140	1		30
Chrysene	79		74		40-140	7		30
Acenaphthylene	71		72		45-123	1		30
Anthracene	79		71		40-140	11		30
Benzo(ghi)perylene	77		74		40-140	4		30
Fluorene	75		71		40-140	5		30
Phenanthrene	80		74		40-140	8		30
Dibenzo(a,h)anthracene	75		73		40-140	3		30
Indeno(1,2,3-cd)pyrene	77		73		40-140	5		30
Pyrene	79		82		26-127	4		30
Biphenyl	76		78		40-140	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 05 Batch: WG1448815-2 WG1448815-3								
Aniline	**21**	Q	**16**	Q	40-140	27		30
4-Chloroaniline	**39**	Q	41		40-140	5		30
1-Methylnaphthalene	72		71		41-103	1		30
2-Nitroaniline	80		85		52-143	6		30
3-Nitroaniline	53		56		25-145	6		30
4-Nitroaniline	72		69		51-143	4		30
Dibenzofuran	74		74		40-140	0		30
2-Methylnaphthalene	72		73		40-140	1		30
n-Nitrosodimethylamine	47		44		22-74	7		30
2,4,6-Trichlorophenol	78		83		30-130	6		30
p-Chloro-m-cresol	77		80		23-97	4		30
2-Chlorophenol	73		65		27-123	12		30
2,4-Dichlorophenol	75		70		30-130	7		30
2,4-Dimethylphenol	64		53		30-130	19		30
2-Nitrophenol	75		67		30-130	11		30
4-Nitrophenol	57		56		10-80	2		30
2,4-Dinitrophenol	87		86		20-130	1		30
4,6-Dinitro-o-cresol	91		86		20-164	6		30
Pentachlorophenol	80		87		9-103	8		30
Phenol	39		36		12-110	8		30
2-Methylphenol	66		59		30-130	11		30
3-Methylphenol/4-Methylphenol	63		56		30-130	12		30
2,4,5-Trichlorophenol	76		81		30-130	6		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
SPLP Semivolatiles by EPA 1312 - Westborough Lab Associated sample(s): 05 Batch: WG1448815-2 WG1448815-3								
Benzoic Acid	42		42		10-164	0		30
Benzyl Alcohol	62		60		26-116	3		30
Carbazole	79		77		55-144	3		30
Pyridine	13		**6**	Q	10-66	**72**	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	55		52		21-120
Phenol-d6	39		35		10-120
Nitrobenzene-d5	71		68		23-120
2-Fluorobiphenyl	71		75		15-120
2,4,6-Tribromophenol	75		74		10-120
4-Terphenyl-d14	76		80		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1451440-2 WG1451440-3								
Acenaphthene	81		79		40-140	3		30
1,2,4-Trichlorobenzene	81		79		40-140	3		30
Hexachlorobenzene	81		80		40-140	1		30
Bis(2-chloroethyl)ether	90		83		40-140	8		30
2-Chloronaphthalene	80		77		40-140	4		30
1,2-Dichlorobenzene	80		76		40-140	5		30
1,3-Dichlorobenzene	78		73		40-140	7		30
1,4-Dichlorobenzene	78		73		40-140	7		30
3,3'-Dichlorobenzidine	53		52		40-140	2		30
2,4-Dinitrotoluene	104		101		40-140	3		30
2,6-Dinitrotoluene	96		91		40-140	5		30
Azobenzene	94		89		40-140	5		30
Fluoranthene	86		84		40-140	2		30
4-Bromophenyl phenyl ether	88		87		40-140	1		30
Bis(2-chloroisopropyl)ether	119		102		40-140	15		30
Bis(2-chloroethoxy)methane	95		85		40-140	11		30
Hexachlorobutadiene	81		79		40-140	3		30
Hexachloroethane	88		80		40-140	10		30
Isophorone	93		85		40-140	9		30
Naphthalene	82		79		40-140	4		30
Nitrobenzene	98		90		40-140	9		30
Bis(2-ethylhexyl)phthalate	106		101		40-140	5		30
Butyl benzyl phthalate	104		102		40-140	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1451440-2 WG1451440-3								
Di-n-butylphthalate	100		96		40-140	4		30
Di-n-octylphthalate	102		100		40-140	2		30
Diethyl phthalate	91		88		40-140	3		30
Dimethyl phthalate	82		78		40-140	5		30
Benzo(a)anthracene	78		77		40-140	1		30
Benzo(a)pyrene	83		83		40-140	0		30
Benzo(b)fluoranthene	81		79		40-140	3		30
Benzo(k)fluoranthene	76		80		40-140	5		30
Chrysene	82		80		40-140	2		30
Acenaphthylene	79		75		40-140	5		30
Anthracene	84		82		40-140	2		30
Benzo(ghi)perylene	79		80		40-140	1		30
Fluorene	84		81		40-140	4		30
Phenanthrene	83		81		40-140	2		30
Dibenzo(a,h)anthracene	79		79		40-140	0		30
Indeno(1,2,3-cd)pyrene	81		79		40-140	3		30
Pyrene	85		84		40-140	1		30
Aniline	64		58		40-140	10		30
4-Chloroaniline	69		66		40-140	4		30
Dibenzofuran	81		78		40-140	4		30
2-Methylnaphthalene	83		79		40-140	5		30
Acetophenone	93		86		40-140	8		30
2,4,6-Trichlorophenol	82		81		30-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG1451440-2 WG1451440-3								
2-Chlorophenol	90		83		30-130	8		30
2,4-Dichlorophenol	88		85		30-130	3		30
2,4-Dimethylphenol	88		85		30-130	3		30
2-Nitrophenol	107		102		30-130	5		30
4-Nitrophenol	106		105		30-130	1		30
2,4-Dinitrophenol	58		56		30-130	4		30
Pentachlorophenol	79		82		30-130	4		30
Phenol	81		75		30-130	8		30
2-Methylphenol	91		85		30-130	7		30
3-Methylphenol/4-Methylphenol	100		93		30-130	7		30
2,4,5-Trichlorophenol	84		84		30-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	87		80		30-130
Phenol-d6	93		84		30-130
Nitrobenzene-d5	101		92		30-130
2-Fluorobiphenyl	81		77		30-130
2,4,6-Tribromophenol	83		84		30-130
4-Terphenyl-d14	87		85		30-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG1451486-2 WG1451486-3								
Benzyl Alcohol	95		86		40-140	10		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	87		80		25-120
Phenol-d6	93		84		10-120
Nitrobenzene-d5	101		92		23-120
2-Fluorobiphenyl	81		77		30-120
2,4,6-Tribromophenol	83		84		10-136
4-Terphenyl-d14	87		85		18-120

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1442230-4 QC Sample: L2052415-03 Client ID: BROCK FILL												
Perfluorobutanoic Acid (PFBA)	ND	13.8	16.8	122		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	0.455J	13.8	17.3	125		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	12.2	15.0	122		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	12.9	21.7	**168**	Q	-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	ND	13.8	16.0	116		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	13	16.2	**125**	Q	-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	13.8	16.1	117		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	12.6	14.9	118		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	13.8	16.2F	117		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	13.1	17.3F	132		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	13.1	16.4	125		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	ND	13.8	14.2	103		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	12.8	16.5	129		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	ND	13.8	16.3	118		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	13.2	17.8F	134		-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	13.3	16.6	125		-	-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	13.8	13.8F	100		-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	13.8	17.4	126		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	13.3	17.1	129		-	-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	ND	13.8	15.7	114		-	-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	13.8	16.8	122		-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	ND	13.8	16.2	117		-	-		69-135	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1442230-4 QC Sample: L2052415-03 Client ID: BROCK FILL												
Perfluorotridecanoic Acid (PFTrDA)	ND	13.8	14.8	107		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	13.8	22.5	**163**	Q	-	-		69-133	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**581**	Q			25-186
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**521**	Q			56-138
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**661**	Q			32-182
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**169**	Q			42-136
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**181**	Q			45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97				64-158
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89				65-150
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89				61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98				62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109				63-166
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	104				56-148
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60				26-160
Perfluoro[13C4]Butanoic Acid (MPFBA)	84				60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	81				65-182
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	24				1-125
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	89				65-151
Perfluoro[13C8]Octanoic Acid (M8PFOA)	88				62-152
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	104				61-154
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105				70-151

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 QC Batch ID: WG1444345-4 QC Sample: L2052415-03 Client ID: BROCK FILL												
Perfluorobutanoic Acid (PFBA)	ND	35.9	55.8	**155**	Q	-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	ND	35.9	31.3	87		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	31.9	32.5	102		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	33.6	44.2	131		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	2.88F	35.9	40.5	105		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	33.8	39.8	118		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	5.01F	35.9	40.2	98		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	32.8	34.6	105		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	ND	35.9	34.6F	96		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	34.2	38.8F	113		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	34.2	33.1	97		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	ND	35.9	30.4	85		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	33.3	36.0	108		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	35.9	37.5	104		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	34.5	41.1F	119		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	34.6	35.2	102		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	35.9	29.0F	81		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	35.9	36.1	100		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	34.6	30.8	89		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	35.9	33.6	94		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	35.9	36.6	102		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	35.9	36.2	101		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 QC Batch ID: WG1444345-4 QC Sample: L2052415-03 Client ID: BROCK FILL												
Perfluorotridecanoic Acid (PFTrDA)	ND	35.9	24.5	68		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	35.9	43.0	120		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**618**	Q			7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**377**	Q			1-313
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**489**	Q			1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	112				23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	127				1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90				40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	91				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	102				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	80				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	35				33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	96				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	56				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	28				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	94				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**196**	Q			34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97				31-159

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1446532-4 QC Sample: L2052415-01 Client ID: GREENFIELD TURF												
Perfluorobutanoic Acid (PFBA)	1.39J	36.3	41.5	110		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	2.01	36.3	43.9	115		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	32.3	37.2	115		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	34	57.0	168		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	0.803J	36.3	41.2	111		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	34.2	35.9	105		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	0.545J	36.3	39.4	107		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	33.2	37.3	112		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	0.471JFB	36.3	40.7F	111		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	34.6	42.6F	123		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	34.6	43.7	126		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	ND	36.3	39.7	109		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	33.7	44.0F	130		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	36.3	40.9	113		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	34.9	49.8F	143		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	35	35.0	100		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	36.3	32.6F	90		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	36.3	41.1	113		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	2.07F	35	45.7	125		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	36.3	37.1	102		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	36.3	40.4	111		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	36.3	41.7	115		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1446532-4 QC Sample: L2052415-01 Client ID: GREENFIELD TURF												
Perfluorotridecanoic Acid (PFTrDA)	ND	36.3	31.4	86		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	36.3	54.6	150		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**511**	Q			7-170
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**845**	Q			1-313
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**744**	Q			1-244
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**158**	Q			23-146
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**343**	Q			1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	**182**	Q			40-144
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88				38-144
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	74				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	95				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110				47-153
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	113				24-161
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	71				33-143
Perfluoro[13C4]Butanoic Acid (MPFBA)	89				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	117				16-173
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43				1-87
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	91				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	98				31-159

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1442230-5 QC Sample: L2052415-04 Client ID: REYNOLDS 775 GLUE						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/g	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/g	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/g	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/g	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	1.40F	ng/g	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/g	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/g	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/g	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/g	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1442230-5 QC Sample: L2052415-04 Client ID: REYNOLDS 775 GLUE						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/g	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/g	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92		86		60-153
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		103		65-182
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		91		70-151
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	147	Q	133		56-138
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	99		97		61-147
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	105		98		62-149
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	111		101		63-166
Perfluoro[13C8]Octanoic Acid (M8PFOA)	92		86		62-152
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	125		107		32-182
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	98		91		61-154
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		84		65-151
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	93		88		65-150
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	142		143		25-186
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**331**	Q	**305**	Q	45-137
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	106		98		64-158
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45		37		1-125
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		88		42-136
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		93		56-148

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1442230-5 QC Sample: L2052415-04 Client ID: REYNOLDS 775 GLUE

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		54		26-160

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 QC Batch ID: WG1444345-5 QC Sample: L2052415-04 Client ID: REYNOLDS 775 GLUE						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 QC Batch ID: WG1444345-5 QC Sample: L2052415-04 Client ID: REYNOLDS 775 GLUE						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	87		92		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106		112		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	104		99		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	181		153		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		97		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94		96		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	109		103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		94		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	192		162		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		94		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	95		93		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	88		90		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	149		146		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**261**	Q	**289**	Q	1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	94		99		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	4		12		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80		90		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	81		81		24-161

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 03-04 QC Batch ID: WG1444345-5 QC Sample: L2052415-04 Client ID: REYNOLDS 775 GLUE

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	60		60		33-143

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1446532-5 QC Sample: L2052415-02 Client ID: BROCK SHOCK PAD						
Perfluorobutanoic Acid (PFBA)	1.84	1.65J	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	1.52J	1.48J	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	1.03J	1.13J	ng/l	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	1.00J	1.02J	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	0.403JFB	0.355JF	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1446532-5 QC Sample: L2052415-02 Client ID: BROCK SHOCK PAD						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	74		79		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	102		111		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	88		93		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	96		91		1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	77		87		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		100		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	97		101		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	77		83		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	102		87		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		88		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	81		84		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		82		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	160		96		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	84		60		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		93		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	8		13		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		64		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	87		88		24-161

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1446532-5 QC Sample: L2052415-02 Client ID: BROCK SHOCK PAD

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	58		58		33-143

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447672-4 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/l	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/l	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	0.395J	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447672-4 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104		95		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	126		116		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	134		128		31-159
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**332**	Q	**342**	Q	1-313
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	124		113		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	123		111		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	110		112		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	107		96		36-149
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	103		100		1-244
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	120		109		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	114		110		42-146
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	105		95		38-144
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	135		126		7-170
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	91		73		1-181
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	119		107		40-144
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	21		17		1-87
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		90		23-146
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	109		102		24-161

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

SPLP Perfluorinated Alkyl Acids by Isotope Dilution & EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447672-4 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		82		33-143

METALS

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab											
Antimony, SPLP	0.009	J	mg/l	0.050	0.007	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/18/20 11:13	12/19/20 14:44	EPA 3005A	1,6010D	BV
Barium, SPLP	0.016	J	mg/l	0.050	0.002	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Lead, SPLP	0.007	J	mg/l	0.010	0.003	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/18/20 11:34	12/20/20 09:06	EPA 7470A	1,7470A	EW
Nickel, SPLP	ND		mg/l	0.025	0.002	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Silver, SPLP	ND		mg/l	0.007	0.003	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD
Zinc, SPLP	ND		mg/l	0.200	0.002	1	12/18/20 11:13	12/19/20 10:17	EPA 3005A	1,6010D	GD

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	1.96	0.149	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Arsenic, Total	ND		mg/kg	0.392	0.082	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Barium, Total	0.110	J	mg/kg	0.392	0.068	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Beryllium, Total	ND		mg/kg	0.196	0.013	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Cadmium, Total	ND		mg/kg	0.392	0.039	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Chromium, Total	0.102	J	mg/kg	0.392	0.038	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Lead, Total	ND		mg/kg	1.96	0.105	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Mercury, Total	ND		mg/kg	0.073	0.073	1	12/16/20 05:40	12/16/20 11:37	EPA 7471B	97,7471B	VW
Nickel, Total	0.118	J	mg/kg	0.981	0.095	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Selenium, Total	ND		mg/kg	1.96	0.101	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Silver, Total	ND		mg/kg	0.392	0.111	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Thallium, Total	ND		mg/kg	1.96	0.124	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Vanadium, Total	ND		mg/kg	0.392	0.080	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV
Zinc, Total	9.49		mg/kg	1.96	0.115	1	12/16/20 06:30	12/16/20 18:19	EPA 3050B	97,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/13/20 14:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab											
Antimony, SPLP	0.008	J	mg/l	0.050	0.007	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/18/20 11:13	12/19/20 15:02	EPA 3005A	1,6010D	BV
Barium, SPLP	0.042	J	mg/l	0.050	0.002	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Lead, SPLP	ND		mg/l	0.010	0.003	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/18/20 11:34	12/20/20 09:16	EPA 7470A	1,7470A	EW
Nickel, SPLP	0.006	J	mg/l	0.025	0.002	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Silver, SPLP	ND		mg/l	0.007	0.003	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD
Zinc, SPLP	0.374		mg/l	0.200	0.002	1	12/18/20 11:13	12/19/20 10:35	EPA 3005A	1,6010D	GD

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	0.384	J	mg/kg	3.42	0.260	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Arsenic, Total	ND		mg/kg	0.685	0.142	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Barium, Total	0.144	J	mg/kg	0.685	0.119	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Beryllium, Total	ND		mg/kg	0.342	0.023	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Cadmium, Total	ND		mg/kg	0.685	0.067	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Chromium, Total	0.342	J	mg/kg	0.685	0.066	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Lead, Total	0.199	J	mg/kg	3.42	0.184	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Mercury, Total	ND		mg/kg	0.072	0.072	1	12/16/20 05:40	12/16/20 11:40	EPA 7471B	97,7471B	VW
Nickel, Total	ND		mg/kg	1.71	0.166	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Selenium, Total	ND		mg/kg	3.42	0.177	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Silver, Total	ND		mg/kg	0.685	0.194	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Thallium, Total	ND		mg/kg	3.42	0.216	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Vanadium, Total	ND		mg/kg	0.685	0.139	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV
Zinc, Total	7.24		mg/kg	3.42	0.201	1	12/16/20 06:30	12/16/20 18:33	EPA 3050B	97,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA
Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 12/08/20 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab											
Antimony, SPLP	ND		mg/l	0.050	0.007	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/18/20 11:13	12/19/20 15:07	EPA 3005A	1,6010D	BV
Barium, SPLP	0.112		mg/l	0.050	0.002	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Lead, SPLP	0.005	J	mg/l	0.010	0.003	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/18/20 11:34	12/20/20 09:19	EPA 7470A	1,7470A	EW
Nickel, SPLP	ND		mg/l	0.025	0.002	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Silver, SPLP	ND		mg/l	0.007	0.003	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD
Zinc, SPLP	0.105	J	mg/l	0.200	0.002	1	12/18/20 11:13	12/19/20 10:40	EPA 3005A	1,6010D	GD

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	1.91	0.145	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Arsenic, Total	ND		mg/kg	0.381	0.079	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Barium, Total	5.61		mg/kg	0.381	0.066	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Beryllium, Total	ND		mg/kg	0.191	0.013	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Cadmium, Total	0.042	J	mg/kg	0.381	0.037	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Chromium, Total	ND		mg/kg	0.381	0.037	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Lead, Total	ND		mg/kg	1.91	0.102	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Mercury, Total	ND		mg/kg	0.072	0.072	1	12/16/20 05:40	12/16/20 11:43	EPA 7471B	97,7471B	VW
Nickel, Total	ND		mg/kg	0.953	0.092	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Selenium, Total	0.656	J	mg/kg	1.91	0.098	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Silver, Total	ND		mg/kg	0.381	0.108	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Thallium, Total	ND		mg/kg	1.91	0.120	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Vanadium, Total	ND		mg/kg	0.381	0.077	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV
Zinc, Total	5.71		mg/kg	1.91	0.112	1	12/16/20 06:30	12/16/20 18:38	EPA 3050B	97,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/08/20 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab											
Antimony, SPLP	ND		mg/l	0.050	0.007	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/18/20 11:13	12/19/20 15:12	EPA 3005A	1,6010D	BV
Barium, SPLP	0.033	J	mg/l	0.050	0.002	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Lead, SPLP	0.004	J	mg/l	0.010	0.003	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/18/20 11:34	12/20/20 09:22	EPA 7470A	1,7470A	EW
Nickel, SPLP	ND		mg/l	0.025	0.002	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Silver, SPLP	ND		mg/l	0.007	0.003	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD
Zinc, SPLP	ND		mg/l	0.200	0.002	1	12/18/20 11:13	12/19/20 10:45	EPA 3005A	1,6010D	GD

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	1.88	0.142	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Arsenic, Total	ND		mg/kg	0.375	0.078	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Barium, Total	36.2		mg/kg	0.375	0.065	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Beryllium, Total	ND		mg/kg	0.188	0.012	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Cadmium, Total	ND		mg/kg	0.375	0.037	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Chromium, Total	ND		mg/kg	0.375	0.036	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Lead, Total	ND		mg/kg	1.88	0.100	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Mercury, Total	ND		mg/kg	0.073	0.073	1	12/16/20 05:40	12/16/20 11:47	EPA 7471B	97,7471B	VW
Nickel, Total	ND		mg/kg	0.938	0.091	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Selenium, Total	ND		mg/kg	1.88	0.097	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Silver, Total	ND		mg/kg	0.375	0.106	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Thallium, Total	ND		mg/kg	1.88	0.118	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Vanadium, Total	ND		mg/kg	0.375	0.076	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV
Zinc, Total	ND		mg/kg	1.88	0.110	1	12/16/20 06:30	12/16/20 18:42	EPA 3050B	97,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.
TCLP/SPLP Ext. Date: 12/19/20 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab											
Antimony, SPLP	ND		mg/l	0.050	0.007	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Barium, SPLP	0.044	J	mg/l	0.050	0.002	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Lead, SPLP	ND		mg/l	0.010	0.003	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/21/20 15:18	12/22/20 15:28	EPA 7470A	1,7470A	EW
Nickel, SPLP	ND		mg/l	0.025	0.002	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Silver, SPLP	ND		mg/l	0.007	0.003	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV
Zinc, SPLP	0.085		mg/l	0.200	0.002	1	12/21/20 14:40	12/21/20 17:41	EPA 3005A	1,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 10:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Percent Solids: Results are reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/kg	1.87	0.142	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Arsenic, Total	0.307	J	mg/kg	0.375	0.078	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Barium, Total	1.08		mg/kg	0.375	0.065	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Beryllium, Total	ND		mg/kg	0.187	0.012	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Cadmium, Total	ND		mg/kg	0.375	0.037	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Chromium, Total	1.17		mg/kg	0.375	0.036	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Lead, Total	0.142	J	mg/kg	1.87	0.100	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Mercury, Total	ND		mg/kg	0.074	0.074	1	12/16/20 05:40	12/16/20 11:57	EPA 7471B	97,7471B	VW
Nickel, Total	0.330	J	mg/kg	0.937	0.091	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Selenium, Total	0.315	J	mg/kg	1.87	0.097	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Silver, Total	ND		mg/kg	0.375	0.106	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Thallium, Total	ND		mg/kg	1.87	0.118	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Vanadium, Total	0.176	J	mg/kg	0.375	0.076	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV
Zinc, Total	12.7		mg/kg	1.87	0.110	1	12/16/20 06:30	12/16/20 18:47	EPA 3050B	97,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1445645-1										
Mercury, Total	ND		mg/kg	0.083	0.083	1	12/16/20 05:40	12/16/20 11:20	97,7471B	VW

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1445646-1										
Antimony, Total	0.196	J	mg/kg	2.00	0.152	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Arsenic, Total	ND		mg/kg	0.400	0.083	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Barium, Total	ND		mg/kg	0.400	0.070	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Beryllium, Total	ND		mg/kg	0.200	0.013	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Cadmium, Total	ND		mg/kg	0.400	0.039	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Chromium, Total	ND		mg/kg	0.400	0.038	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Lead, Total	ND		mg/kg	2.00	0.107	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Nickel, Total	ND		mg/kg	1.00	0.097	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Selenium, Total	ND		mg/kg	2.00	0.103	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Silver, Total	ND		mg/kg	0.400	0.113	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Thallium, Total	ND		mg/kg	2.00	0.126	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Vanadium, Total	ND		mg/kg	0.400	0.081	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD
Zinc, Total	ND		mg/kg	2.00	0.117	1	12/16/20 06:30	12/16/20 11:13	97,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab for sample(s): 01-04 Batch: WG1445852-1										
Antimony, SPLP	ND		mg/l	0.050	0.007	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/18/20 11:13	12/19/20 14:35	1,6010D	BV
Barium, SPLP	0.022	J	mg/l	0.050	0.002	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD

Project Name: MVC TURF **Lab Number:** L2052415

Project Number: 143-319629-21001 **Report Date:** 01/07/21

Method Blank Analysis
Batch Quality Control

Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Lead, SPLP	ND		mg/l	0.010	0.003	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Nickel, SPLP	0.006	J	mg/l	0.025	0.002	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Silver, SPLP	ND		mg/l	0.007	0.003	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD
Zinc, SPLP	0.108	J	mg/l	0.200	0.002	1	12/18/20 11:13	12/19/20 10:08	1,6010D	GD

Prep Information

Digestion Method: EPA 3005A

TCLP/SPLP Extraction Date: 12/08/20 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab for sample(s): 01-04 Batch: WG1445853-1										
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/18/20 11:34	12/20/20 08:59	1,7470A	EW

Prep Information

Digestion Method: EPA 7470A

TCLP/SPLP Extraction Date: 12/08/00 06:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab for sample(s): 05 Batch: WG1447646-1										
Antimony, SPLP	ND		mg/l	0.050	0.007	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Arsenic, SPLP	ND		mg/l	0.005	0.002	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Barium, SPLP	0.027	J	mg/l	0.050	0.002	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Beryllium, SPLP	ND		mg/l	0.005	0.001	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Cadmium, SPLP	ND		mg/l	0.005	0.001	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Chromium, SPLP	ND		mg/l	0.010	0.002	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Lead, SPLP	ND		mg/l	0.010	0.003	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Nickel, SPLP	ND		mg/l	0.025	0.002	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Selenium, SPLP	ND		mg/l	0.010	0.004	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Silver, SPLP	ND		mg/l	0.007	0.003	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Thallium, SPLP	ND		mg/l	0.020	0.003	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Vanadium, SPLP	ND		mg/l	0.010	0.002	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV
Zinc, SPLP	0.025	J	mg/l	0.200	0.002	1	12/21/20 14:40	12/21/20 17:32	1,6010D	BV

Prep Information

Digestion Method: EPA 3005A
TCLP/SPLP Extraction Date: 12/19/20 14:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
SPLP Metals by EPA 1312 - Mansfield Lab for sample(s): 05 Batch: WG1447647-1										
Mercury, SPLP	ND		mg/l	0.00020	0.00009	1	12/21/20 15:18	12/22/20 15:22	1,7470A	EW

Prep Information

Digestion Method: EPA 7470A
TCLP/SPLP Extraction Date: 12/19/20 14:40

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1445645-2 WG1445645-3 SRM Lot Number: D109-540								
Mercury, Total	78		84		60-140	7		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1445646-2 WG1445646-3 SRM Lot Number: D109-540								
Antimony, Total	145		134		19-250	8		30
Arsenic, Total	93		93		70-130	0		30
Barium, Total	90		91		75-125	1		30
Beryllium, Total	86		86		75-125	0		30
Cadmium, Total	90		86		75-125	5		30
Chromium, Total	88		87		70-130	1		30
Lead, Total	85		85		72-128	0		30
Nickel, Total	86		84		70-130	2		30
Selenium, Total	90		90		68-132	0		30
Silver, Total	93		95		68-131	2		30
Thallium, Total	87		86		68-131	1		30
Vanadium, Total	90		90		59-141	0		30
Zinc, Total	86		85		70-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery		LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1445852-2						
Antimony, SPLP	109		-	80-120	-	
Arsenic, SPLP	109		-	80-120	-	
Barium, SPLP	103		-	80-120	-	
Beryllium, SPLP	105		-	80-120	-	
Cadmium, SPLP	106		-	80-120	-	
Chromium, SPLP	102		-	80-120	-	
Lead, SPLP	104		-	80-120	-	
Nickel, SPLP	96		-	80-120	-	
Selenium, SPLP	104		-	80-120	-	
Silver, SPLP	98		-	80-120	-	
Thallium, SPLP	102		-	80-120	-	
Vanadium, SPLP	104		-	80-120	-	
Zinc, SPLP	**126**	Q	-	80-120	-	
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1445853-2						
Mercury, SPLP	81		-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 05 Batch: WG1447646-2					
Antimony, SPLP	107	-	80-120	-	
Arsenic, SPLP	108	-	80-120	-	
Barium, SPLP	104	-	80-120	-	
Beryllium, SPLP	107	-	80-120	-	
Cadmium, SPLP	109	-	80-120	-	
Chromium, SPLP	104	-	80-120	-	
Lead, SPLP	102	-	80-120	-	
Nickel, SPLP	99	-	80-120	-	
Selenium, SPLP	108	-	80-120	-	
Silver, SPLP	100	-	80-120	-	
Thallium, SPLP	106	-	80-120	-	
Vanadium, SPLP	104	-	80-120	-	
Zinc, SPLP	111	-	80-120	-	
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 05 Batch: WG1447647-2					
Mercury, SPLP	94	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1445852-3 QC Sample: L2052415-01 Client ID: GREENFIELD TURF												
Antimony, SPLP	0.009J	0.5	0.559	112		-	-		75-125	-		20
Arsenic, SPLP	ND	0.12	0.133	111		-	-		75-125	-		20
Barium, SPLP	0.016J	2	2.06	103		-	-		75-125	-		20
Beryllium, SPLP	ND	0.05	0.053	106		-	-		75-125	-		20
Cadmium, SPLP	ND	0.051	0.054	106		-	-		75-125	-		20
Chromium, SPLP	ND	0.2	0.208	104		-	-		75-125	-		20
Lead, SPLP	0.007J	0.51	0.533	104		-	-		75-125	-		20
Nickel, SPLP	ND	0.5	0.486	97		-	-		75-125	-		20
Selenium, SPLP	ND	0.12	0.124	103		-	-		75-125	-		20
Silver, SPLP	ND	0.05	0.049	97		-	-		75-125	-		20
Thallium, SPLP	ND	0.12	0.122	102		-	-		75-125	-		20
Vanadium, SPLP	ND	0.5	0.521	104		-	-		75-125	-		20
Zinc, SPLP	ND	2	0.536	107		-	-		75-125	-		20
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1445853-3 QC Sample: L2052415-01 Client ID: GREENFIELD TURF												
Mercury, SPLP	ND	0.005	0.00507	101		-	-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447646-3 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND									
Antimony, SPLP	ND	0.5	0.530	106	-	-	75-125	-	20
Arsenic, SPLP	ND	0.12	0.130	108	-	-	75-125	-	20
Barium, SPLP	0.044J	2	2.07	104	-	-	75-125	-	20
Beryllium, SPLP	ND	0.05	0.053	105	-	-	75-125	-	20
Cadmium, SPLP	ND	0.051	0.054	105	-	-	75-125	-	20
Chromium, SPLP	ND	0.2	0.200	100	-	-	75-125	-	20
Lead, SPLP	ND	0.51	0.502	98	-	-	75-125	-	20
Nickel, SPLP	ND	0.5	0.479	96	-	-	75-125	-	20
Selenium, SPLP	ND	0.12	0.131	109	-	-	75-125	-	20
Silver, SPLP	ND	0.05	0.050	100	-	-	75-125	-	20
Thallium, SPLP	ND	0.12	0.122	102	-	-	75-125	-	20
Vanadium, SPLP	ND	0.5	0.509	102	-	-	75-125	-	20
Zinc, SPLP	0.085	0.5	0.603	104	-	-	75-125	-	20
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447647-3 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND									
Mercury, SPLP	ND	0.005	0.00474	95	-	-	80-120	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1445852-4 QC Sample: L2052415-01 Client ID: GREENFIELD TURF						
Arsenic, SPLP	ND	ND	mg/l	NC		20
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1445852-4 QC Sample: L2052415-01 Client ID: GREENFIELD TURF						
Antimony, SPLP	0.009J	0.013J	mg/l	NC		20
Barium, SPLP	0.016J	0.015J	mg/l	NC		20
Beryllium, SPLP	ND	ND	mg/l	NC		20
Cadmium, SPLP	ND	ND	mg/l	NC		20
Chromium, SPLP	ND	ND	mg/l	NC		20
Lead, SPLP	0.007J	0.007J	mg/l	NC		20
Nickel, SPLP	ND	ND	mg/l	NC		20
Selenium, SPLP	ND	ND	mg/l	NC		20
Silver, SPLP	ND	ND	mg/l	NC		20
Thallium, SPLP	ND	ND	mg/l	NC		20
Vanadium, SPLP	ND	ND	mg/l	NC		20
Zinc, SPLP	ND	ND	mg/l	NC		20
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1445853-4 QC Sample: L2052415-01 Client ID: GREENFIELD TURF						
Mercury, SPLP	ND	ND	mg/l	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447646-4 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND					
Antimony, SPLP	ND	ND	mg/l	NC	20
Arsenic, SPLP	ND	ND	mg/l	NC	20
Barium, SPLP	0.044J	0.044J	mg/l	NC	20
Beryllium, SPLP	ND	ND	mg/l	NC	20
Cadmium, SPLP	ND	ND	mg/l	NC	20
Chromium, SPLP	ND	ND	mg/l	NC	20
Lead, SPLP	ND	ND	mg/l	NC	20
Nickel, SPLP	ND	ND	mg/l	NC	20
Selenium, SPLP	ND	ND	mg/l	NC	20
Silver, SPLP	ND	ND	mg/l	NC	20
Thallium, SPLP	ND	ND	mg/l	NC	20
Vanadium, SPLP	ND	ND	mg/l	NC	20
Zinc, SPLP	0.085	0.085	mg/l	NC	20
SPLP Metals by EPA 1312 - Mansfield Lab Associated sample(s): 05 QC Batch ID: WG1447647-4 QC Sample: L2052415-05 Client ID: MAPEI ULTRA BOND					
Mercury, SPLP	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 08:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP General Chemistry - Westborough Lab										
Chromium, Hexavalent	ND		mg/kg	2.00	0.160	1	12/18/20 13:30	12/19/20 14:01	97,7196A	JW

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:15
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP General Chemistry - Westborough Lab										
Chromium, Hexavalent	ND		mg/kg	4.00	0.160	1	12/18/20 13:30	12/19/20 14:01	97,7196A	JW

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP General Chemistry - Westborough Lab										
Chromium, Hexavalent	ND		mg/kg	2.00	0.160	1	12/18/20 13:30	12/19/20 14:02	97,7196A	JW

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

SAMPLE RESULTS

Lab ID: L2052415-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:45
Date Received: 11/24/20
Field Prep: Not Specified

Sample Depth:
Matrix: Solid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP General Chemistry - Westborough Lab										
Chromium, Hexavalent	ND		mg/kg	1.00	0.160	1	12/18/20 13:30	12/19/20 14:02	97,7196A	JW

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1446813-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	12/18/20 13:30	12/19/20 13:39	97,7196A	JW

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2052415

Report Date: 01/07/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP General Chemistry - Westborough Lab	Associated sample(s): 01-04		Batch: WG1446813-2		WG1446813-3			
Chromium, Hexavalent	118		**57**	Q	70-129	**70**	Q	20

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2052415-01A	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-HEXCR7196-10(30),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-01B	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-01C	Plastic 2oz unpreserved for TS	A	NA		4.5	Y	Absent		HOLD-WETCHEM()
L2052415-01D	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-01E	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		A2-537-ISOTOPE(14)
L2052415-01F	Glass 250ml/8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-01G	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-HEXCR7196-10(30),MCP-8270-10(14)
L2052415-01H	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-8270-10(14)
L2052415-01I	Bag	C	NA		4.5	Y	Absent		-
L2052415-01J	Bag	C	NA		4.5	Y	Absent		-
L2052415-01Q	Amber 1000ml unpreserved Extracts	A	NA		4.5	Y	Absent		SPLP-8270(14)
L2052415-01X	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-01X1	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2052415-01X2	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-01X3	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-01X9	Tumble Vessel	A	NA		4.5	Y	Absent		-
L2052415-01Y	Plastic 250ml HNO3 preserved Extracts	A	NA		4.5	Y	Absent		AG-PI(180),SE-PI(180),SB-PI(180),ZN-PI(180),NI-PI(180),TL-PI(180),BA-PI(180),CR-PI(180),PB-PI(180),V-PI(180),BE-PI(180),CD-PI(180),HG-P(28),AS-PI(180)
L2052415-01Y9	Glass 250ml/8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-02A	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-SE-6010T-10(180),MCP-BE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-02B	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-CD-6010T-10(180),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-SE-6010T-10(180),MCP-BE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-02C	Plastic 2oz unpreserved for TS	A	NA		4.5	Y	Absent		HOLD-WETCHEM()
L2052415-02D	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-02E	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		A2-537-ISOTOPE(14)
L2052415-02F	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-02F1	Bag	A	NA		4.5	Y	Absent		-
L2052415-02F2	Bag	A	NA		4.5	Y	Absent		-
L2052415-02G	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-HEXCR7196-10(30),MCP-8270-10(14)
L2052415-02H	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-8270-10(14)
L2052415-02Q	Amber 1000ml unpreserved Extracts	A	NA		4.5	Y	Absent		SPLP-8270(14)
L2052415-02X	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-02X1	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-02X2	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-02X3	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2052415-02X9	Tumble Vessel	A	NA		4.5	Y	Absent		-
L2052415-02Y	Plastic 250ml HNO3 preserved Extracts	A	NA		4.5	Y	Absent		AG-PI(180),SE-PI(180),SB-PI(180),ZN-PI(180),NI-PI(180),TL-PI(180),V-PI(180),PB-PI(180),CR-PI(180),BA-PI(180),BE-PI(180),AS-PI(180),CD-PI(180),HG-P(28)
L2052415-02Y9	Tumble Vessel	A	NA		4.5	Y	Absent		-
L2052415-03A	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SB-6010T-10(180),MCP-SE-6010T-10(180),MCP-BE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-03B	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-TL-6010T-10(180),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SB-6010T-10(180),MCP-SE-6010T-10(180),MCP-BE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-03C	Plastic 2oz unpreserved for TS	A	NA		4.5	Y	Absent		HOLD-WETCHEM()
L2052415-03D	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-03E	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		A2-537-ISOTOPE(14)
L2052415-03F	Glass 250ml/8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-03G	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-HEXCR7196-10(30),MCP-8270-10(14)
L2052415-03H	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-8270-10(14)
L2052415-03I	Bag	C	NA		4.5	Y	Absent		-
L2052415-03Q	Amber 1000ml unpreserved Extracts	A	NA		4.5	Y	Absent		SPLP-8270(14)
L2052415-03X	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-03X1	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-03X2	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-03X3	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-03X9	Tumble Vessel	A	NA		4.5	Y	Absent		-
L2052415-03Y	Plastic 250ml HNO3 preserved Extracts	A	NA		4.5	Y	Absent		AG-PI(180),SE-PI(180),SB-PI(180),ZN-PI(180),NI-PI(180),TL-PI(180),BE-PI(180),BA-PI(180),CR-PI(180),PB-PI(180),V-PI(180),CD-PI(180),HG-P(28),AS-PI(180)

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2052415-03Y9	Glass 250ml/8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-04A	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-04B	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),MCP-7471T-10(28),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SE-6010T-10(180),MCP-BE-6010T-10(180),MCP-BA-6010T-10(180),MCP-V-6010T-10(180),MCP-PB-6010T-10(180),MCP-NI-6010T-10(180)
L2052415-04C	Plastic 2oz unpreserved for TS	A	NA		4.5	Y	Absent		HOLD-WETCHEM()
L2052415-04D	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-04E	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		A2-537-ISOTOPE(14)
L2052415-04F	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-HEXCR7196-10(30),MCP-8270-10(14)
L2052415-04G	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-8270-10(14)
L2052415-04Q	Amber 1000ml unpreserved Extracts	A	NA		4.5	Y	Absent		SPLP-8270(14)
L2052415-04X	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-04X1	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-04X2	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-04X3	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-04X9	Tumble Vessel	A	NA		4.5	Y	Absent		-
L2052415-04Y	Plastic 250ml HNO3 preserved Extracts	A	NA		4.5	Y	Absent		AG-PI(180),SE-PI(180),SB-PI(180),ZN-PI(180),TL-PI(180),NI-PI(180),BA-PI(180),PB-PI(180),CR-PI(180),V-PI(180),BE-PI(180),HG-P(28),AS-PI(180),CD-PI(180)
L2052415-04Y9	Tumble Vessel	A	NA		4.5	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2052415
Report Date: 01/07/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2052415-05A	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L2052415-05B	Glass 60mL/2oz unpreserved	A	NA		4.5	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-TL-6010T-10(180),MCP-7471T-10(28),MCP-ZN-6010T-10(180),MCP-AG-6010T-10(180),MCP-SB-6010T-10(180),MCP-BE-6010T-10(180),MCP-SE-6010T-10(180),MCP-V-6010T-10(180),MCP-BA-6010T-10(180),MCP-NI-6010T-10(180),MCP-PB-6010T-10(180)
L2052415-05C	Plastic 2oz unpreserved for TS	A	NA		4.5	Y	Absent		HOLD-WETCHEM()
L2052415-05D	Plastic 8oz unpreserved	A	NA		4.5	Y	Absent		A2-537-ISOTOPE(14)
L2052415-05E	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		-
L2052415-05F	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-8270-10(14),HOLD-WETCHEM()
L2052415-05G	Glass 500ml/16oz unpreserved	A	NA		4.5	Y	Absent		MCP-8270-10(14)
L2052415-05Q	Amber 1000ml unpreserved Extracts	A	NA		4.5	Y	Absent		HOLD-WETCHEM()
L2052415-05X	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-05X1	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-05X2	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-05X3	Plastic 250ml unpreserved Extracts	A	NA		4.5	Y	Absent		A2-SPLP-537-ISOTOPE(14)
L2052415-05X9	Tumble Vessel	A	NA		4.5	Y	Absent		-
L2052415-05Y	Plastic 250ml HNO3 preserved Extracts	A	NA		4.5	Y	Absent		HOLD-WETCHEM(),SB-PI(180),ZN-PI(180),TL-PI(180),NI-PI(180),BE-PI(180),V-PI(180)
L2052415-06A	Other container unpreserved	B	NA		3.7	Y	Absent		-
L2052415-06B	Other container unpreserved	B	NA		3.7	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2052415
Report Date: 01/07/21

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	MVC TURF	**Lab Number:**	L2052415
Project Number:	143-319629-21001	**Report Date:**	01/07/21

GLOSSARY

Acronyms

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	MVC TURF	**Lab Number:**	L2052415
Project Number:	143-319629-21001	**Report Date:**	01/07/21

Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	MVC TURF	**Lab Number:**	L2052415
Project Number:	143-319629-21001	**Report Date:**	01/07/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	MVC TURF	**Lab Number:**	L2052415
Project Number:	143-319629-21001	**Report Date:**	01/07/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

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

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/24/20

ALPHA Job #: L2052415

Client Information

Client: TETRA TECH

Address: 100 NICKERSON ROAD MARLBOROUGH MA

Phone: 508-561-6843

Fax:

Email: RON.MYRICK@TETRATECH.COM

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: MVC TURF

Project Location: EDGARTOWN MA

Project #: 143-31962G-21001

Project Manager: MYRICK

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

* HOLD ALL SAMPLES UNTIL RELEASE BY PM
** LEACHABLE TCLP OR SPLP TO BE DETERMINE
*** TOP ASSAY, TOF, & VOL ANALYSES HOLD UNTIL EXPLICIT APPROVAL

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS 537 ISOTOPE	PFAS 537 SPLP ISOTOPE	TOTAL SOLIDS	MCP 14 METALS + LEACHABLE MERCURY & METALS	TOTAL 14 HLS	TOTAL OX PRECURSOR TOPA	TOTAL OXIDIZED PRECURSOR TOPA	VOCs 8260 FULL LIST	SAMPLE HANDLING	TOTAL # BOTTLES
52415-01	GREENFIELD TURF	11/24/20	845	SOLID	RCM	✓	✓	✓	✓	✓	✓			H	H	H	
-02	BLOCK SHOCK PAD	11/24/20	915	SOLID	RCM	✓	✓	✓	✓	✓	✓			H	H	H	
-03	BLOCK FILL	11/24/20	930	SOLID	RCM	✓	✓	✓	✓	✓	✓			H	H	H	
-04	REYNOLDS 775 GLUE	11/24/20	945	SOLID	RCM	✓		✓	✓	✓	✓			H	H	H	
-05	MAPEI ULTRA BOND	11/24/20	1030	SEMI-SOLID	RCM	✓		✓	✓	✓	✓			H	H	H	2-PART EPOXY MIXED 15 MINUTES BEFORE SAMPLING

DIRECT SAMPLES TO PHIL BASSIGNANI ARTIFICIAL TURF PROJECT

Container Type	P	P	P	A	A	A			B	A	A	A	
Preservative	-	-	-	-	-	-				-	-	-	

NO ICE - SAMPLES JUST PICK UP BY COURIER

Relinquished By:	Date/Time	Received By:	Date/Time
TC	11/24/20 1030	TC	11/24/20 1050
TC	11-24-20 1140		11/24/20 1140

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

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CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 12/8/2020

ALPHA Job #: L2052415

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: TETRA TECH

Address: 100 NICKERSON ROAD
MARLBOROUGH MA

Phone: 508-351-6893

Email: RUN.MYRICK@TETRATECH.COM

Project Information

Project Name: MVC TURF

Project Location: EDGARTOWN MA

Project #: 143-319624-21001

Project Manager: MYRICK

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

Additional Project Information:
ADDITION BROCK SHOCK PAD MATERIAL DEL REQUEST
DIRECT SAMPLES TO PHIL BASSIGNANI
(ARTIFICIAL TURF PROJECT)

ANALYSIS
VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments
2415-02	BROCK SHOCK PAD	11/24/20	9:17	SOLID	KCM	SEE PAGE 1 COC (SUBMITTED 11/24/2020) AND ADDITIONAL EMAIL DIRECTION

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

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

Container Type											
Preservative											

Relinquished By:	Date/Time	Received By:	Date/Time
	12/5/20	MRL DICK AAL	12/8/20 1115
MRL DICK 12/8/20 1700	12/8/2020		12/8/20 1720
MRL DICK 12/8/2020		MRL DICK	12/8/2020

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 5* OF 3

ALPHA ANALYTICAL — Mansfield, MA 02048 Tel: 508-822-9300 | 8 Walkup Drive, Westboro, MA 01581 Tel: 508-898-9220 | 320 Forbes Blvd

Date Rec'd in Lab: 12/10/20

ALPHA Job #: L2052415

Client Information

Client: TETRA TECH

Address: 100 NICKERSON ROAD
MARLBOROUGH MA

Phone: 508-561-6543

Email: RON.MYRICK@TETRATECH.COM

Project Information

Project Name: MVC TURF

Project Location: EDGARTOWN MA

Project #: 143-319629-21001

Project Manager: MYRICK

ALPHA Quote #:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Additional Project Information:

ADDITIONAL BLOCK FILL AND GREENFIELD TURF MATERIAL PER REQUEST
DIRECT SAMPLES TO PHIL BASSIGNANI

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Sample Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments	TOTAL # BOTTLES
52415-01	BLOCK FILL ①	11/24/20	930	SOIL	MCM	SEE PAGE 1 COC (SUBMITTED 11/24/2020) AND ADDITIONAL EMAIL DIRECTION	
-03	GREENFIELD TURF ②	11/24/20	845	SOIL	MCM		

① 1 PLASTIC BAG
② 2 PLASTIC BAGS

Container Type																			
Preservative																			

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

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
MCM	12/10/20	MCM	12/10/20 1121
MCM	12/10/20 1641	AAL	12/10/20 1141

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L2100733
Client:	Tetra Tech Rizzo Marlborough Technology Park 100 Nickerson Road Marlborough, MA 01752
ATTN:	Ron Myrick
Phone:	(508) 786-2200
Project Name:	MVC TURF
Project Number:	143-319629-21001
Report Date:	02/11/21

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

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

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

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2100733-01	GREENFIELD TURF	SOLID	EDGARTOWN, MA	01/07/21 11:00	01/07/21
L2100733-02	BROCK SHOCK PAD	SOLID	EDGARTOWN, MA	11/24/20 09:30	01/07/21
L2100733-03	BROCK FILL	SOLID	EDGARTOWN, MA	01/07/21 11:10	01/07/21
L2100733-04	REYNOLDS 775 GLUE	SOLID	EDGARTOWN, MA	01/07/21 11:20	01/07/21
L2100733-05	MAPEI ULTRA BOND	SOLID	EDGARTOWN, MA	01/07/21 11:30	01/07/21

Project Name:	MVC TURF	**Lab Number:**	L2100733
Project Number:	143-319629-21001	**Report Date:**	02/11/21

Case Narrative

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

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

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

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

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

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

Project Name: MVC TURF **Lab Number:** L2100733
Project Number: 143-319629-21001 **Report Date:** 02/11/21

Case Narrative (continued)

Report Revision

February 11, 2021: The Client IDs were amended on L2100733-02 and -03.

February 01, 2021: The subcontracted report has been amended.

Report Submission

The analysis of total organic fluorine was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2100733-02: A container identified as "BLOCK SHOCK PAD" was listed on the Chain of Custody, but not received. This was verified by the client.

L2100733-05: The sample was received in an inappropriate container for the PFAAs via LCMSMS-Isotope Dilution and Isotope via EPA 537 analysis.

Perfluorinated Alkyl Acids by Isotope Dilution

L2100733-01, -03, -04, and -05: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

L2100733-04: The reporting limit was elevated for Perfluorooctanesulfonamide (FOSA) due to low recovery of the extracted internal standard Perfluoro[13C8]Octanesulfonamide (M8FOSA). The low recovery was attributed to the sample matrix.

WG1456772-1, WG1456772-2, WG1456772-3, and WG1456772-4: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

The WG1456772-3 MS recoveries, performed on L2100733-03, are outside the acceptance criteria for

Case Narrative (continued)

perfluorononanesulfonic acid (pfns) (65%) and perfluorodecanesulfonic acid (pfds) (52%).
WG1456772-4: The reporting limit was elevated for Perfluorooctanesulfonamide (FOSA) due to low recovery of the extracted internal standard Perfluoro[13C8]Octanesulfonamide (M8FOSA). The low recovery was attributed to the sample matrix.

Perfluorinated Alkyl Acids (Post-Treatment)
L2100733-01, -02, -03, -04, and -05RE\D(TOP): The sample has elevated detection limits due to the dilution required by the sample matrix.
L2100733-01, -02, and -05RE\D (TOP): Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.
L2100733-01, -02, -03, -04, and -05RE\D(TOP): The following surrogates are negative controls for the TOP Assay: M2-4:2FTS. Low recoveries of these surrogates demonstrates that the associated compounds have been converted to a different PFAS constituent (Limit 0-25%).
L2100733-01, -02, -03, -04, and -05RE\D (TOP) was extracted beyond the 14 day collection date.
L2100733-01, -02, -03, -04, and -05RE\D (TOP): The sample was re-extracted due to QC failures in the original extraction. The results of the re-extraction are reported.
WG1458673-1RE\D(TOP): The sample has elevated detection limits due to the dilution required by the sample matrix.
WG1458673-1RE\D: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.
WG1458673-1 (TOP) :M2PFHxA,M4PFOA and M3PFPeA are not spike in the associated quality control samples.
WG1458673-1: The following surrogates are negative controls for the TOP Assay: M2-4:2FTS. Low recoveries of these surrogates demonstrates that the associated compounds have been converted to a different PFAS constituent (Limit 0-25%)
WG1458673-1RE\D(TOP): The following surrogates are negative controls for the TOP Assay: M2-4:2FTS. Low recoveries of these surrogates demonstrates that the associated compounds have been converted to a

Project Name:	MVC TURF	**Lab Number:**	L2100733
Project Number:	143-319629-21001	**Report Date:**	02/11/21

Case Narrative (continued)

different PFAS constituent (Limit 0-25%).

WG1458673-2 and WG1458673-3: The following surrogates are negative controls for the TOP Assay: M2-4:2FTS. Low recoveries of these surrogates demonstrates that the associated compounds have been converted to a different PFAS constituent (Limit 0-25%).

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

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 02/11/21

ORGANICS

SEMIVOLATILES

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:00
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/21/21 00:03
Analyst: HT
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.826	0.038	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.826	0.076	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.413	0.065	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.65	0.107	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.826	0.087	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.65	0.138	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.413	0.075	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.413	0.100	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.413	0.069	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.826	0.297	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.826	0.226	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.413	0.124	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.413	0.215	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.413	0.111	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.826	0.474	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.65	0.494	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.826	0.333	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.826	0.077	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.826	0.253	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.826	0.162	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.826	0.140	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.826	0.116	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.826	0.338	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.826	0.089	1

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-01 Date Collected: 01/07/21 11:00

Client ID: GREENFIELD TURF Date Received: 01/07/21

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	116		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	134		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	105		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**376**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	94		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	115		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	119		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**218**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**148**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	124		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	117		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**641**	Q	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**166**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	131		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	71		10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**157**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	112		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	125		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-01 RE\D
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:00
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 12:02
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	7.06	J	ng/g	11.0	0.499	5
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	11.0	1.01	5
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	5.49	0.857	5
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	11.0	1.15	5
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	22.0	1.84	5
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	5.49	0.991	5
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	5.49	1.33	5
Perfluorooctanoic Acid (PFOA)	ND		ng/g	5.49	0.921	5
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	11.0	3.00	5
Perfluorononanoic Acid (PFNA)	ND		ng/g	5.49	1.65	5
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	5.49	2.86	5
Perfluorodecanoic Acid (PFDA)	ND		ng/g	5.49	1.47	5
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	22.0	6.57	5
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	11.0	1.03	5
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	11.0	3.36	5
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	11.0	1.54	5
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	11.0	4.49	5
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	11.0	1.19	5

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-01 RE\D
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:00
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	118		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	124		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	107		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	21		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	89		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	101		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	125		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	115		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	124		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	121		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	119		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	115		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	106		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	86		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	79		50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	**162**	Q	50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	80		50-150

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA
Date Collected: 11/24/20 09:30
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/21/21 00:26
Analyst: HT
Percent Solids: Results reported on an 'AS RECEIVED' basis.
Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	3.28	0.149	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	3.28	0.302	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	1.64	0.256	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	6.56	0.423	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	3.28	0.344	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	6.56	0.548	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	1.64	0.296	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	1.64	0.397	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	1.64	0.275	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	3.28	1.18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	3.28	0.895	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	1.64	0.492	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	1.64	0.852	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	1.64	0.439	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	3.28	1.88	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	6.56	1.96	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	3.28	1.32	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	3.28	0.307	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	3.28	1.00	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	3.28	0.643	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	3.28	0.554	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	3.28	0.459	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	3.28	1.34	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	3.28	0.354	1

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-02 Date Collected: 11/24/20 09:30

Client ID: BROCK SHOCK PAD Date Received: 01/07/21

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	79		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	133		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	101		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	106		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	96		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	89		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	93		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	98		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	90		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	68		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	90		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	13		10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	55		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	77		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-02 RE\D
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 12:18
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	28.7	J	ng/g	50.0	2.27	5
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	50.0	4.60	5
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	25.0	3.90	5
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	50.0	5.25	5
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	100	8.35	5
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	25.0	4.51	5
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	25.0	6.05	5
Perfluorooctanoic Acid (PFOA)	ND		ng/g	25.0	4.19	5
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	50.0	13.6	5
Perfluorononanoic Acid (PFNA)	ND		ng/g	25.0	7.50	5
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	25.0	13.0	5
Perfluorodecanoic Acid (PFDA)	ND		ng/g	25.0	6.70	5
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	100	29.9	5
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	50.0	4.68	5
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	50.0	15.3	5
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	50.0	7.00	5
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	50.0	20.4	5
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	50.0	5.40	5

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-02 RE\D
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	121		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	18		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	110		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	129		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	118		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	128		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	125		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	122		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	114		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	104		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	95		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	70		50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	**152**	Q	50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	72		50-150

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:10
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/21/21 00:42
Analyst: HT
Percent Solids:

Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.461	0.021	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.461	0.042	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.230	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.922	0.059	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.461	0.048	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.922	0.077	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.230	0.042	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.230	0.056	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.230	0.039	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.461	0.165	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.461	0.126	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.230	0.069	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.230	0.120	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.230	0.062	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.461	0.264	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.922	0.276	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.461	0.186	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.461	0.043	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.461	0.141	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.461	0.090	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.461	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.461	0.065	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.461	0.188	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.461	0.050	1

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-03 Date Collected: 01/07/21 11:10

Client ID: BROCK FILL Date Received: 01/07/21

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	103		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	62		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**177**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**347**	Q	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**54**	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**525**	Q	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	109		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	136		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	113		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**375**	Q	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	105		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	114		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	32		10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	123		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	124		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	145		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-03 RE\D
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:10
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 12:35
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.11	J	ng/g	8.77	0.398	5
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	8.77	0.807	5
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	4.38	0.684	5
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	8.77	0.921	5
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	17.5	1.46	5
Perfluoroheptanoic Acid (PFHpA)	20.4	F	ng/g	4.38	0.791	5
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	4.38	1.06	5
Perfluorooctanoic Acid (PFOA)	ND		ng/g	4.38	0.735	5
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	8.77	2.39	5
Perfluorononanoic Acid (PFNA)	ND		ng/g	4.38	1.32	5
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	4.38	2.28	5
Perfluorodecanoic Acid (PFDA)	ND		ng/g	4.38	1.18	5
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	17.5	5.24	5
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	8.77	0.821	5
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	8.77	2.68	5
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	8.77	1.23	5
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	8.77	3.59	5
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	8.77	0.947	5

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-03 RE\D
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:10
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	117		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	22		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	81		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	116		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	136		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	121		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	119		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	122		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	110		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	87		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	66		50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	141		50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	64		50-150

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA
Date Collected: 01/07/21 11:20
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/21/21 01:16
Analyst: HT
Percent Solids:
Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.447	0.020	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.447	0.041	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.224	0.035	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.895	0.058	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.447	0.047	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.895	0.075	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.224	0.040	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.224	0.054	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.224	0.038	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.447	0.161	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.447	0.122	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.224	0.067	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.224	0.116	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.224	0.060	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.447	0.257	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.895	0.268	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.447	0.180	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.447	0.042	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.447	0.137	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	4.47	0.088	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.447	0.076	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.447	0.063	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.447	0.183	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.447	0.048	1

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-04 Date Collected: 01/07/21 11:20

Client ID: REYNOLDS 775 GLUE Date Received: 01/07/21

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	121		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	100		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	128		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	112		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	169		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**178**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	114		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**0**	Q	10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	88		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-04 RE\D
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:20
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 12:51
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	8.07	J	ng/g	9.34	0.424	5
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	9.34	0.860	5
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	4.67	0.729	5
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	9.34	0.981	5
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	18.7	1.56	5
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	4.67	0.843	5
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	4.67	1.13	5
Perfluorooctanoic Acid (PFOA)	ND		ng/g	4.67	0.783	5
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	9.34	2.55	5
Perfluorononanoic Acid (PFNA)	ND		ng/g	4.67	1.40	5
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	4.67	2.43	5
Perfluorodecanoic Acid (PFDA)	ND		ng/g	4.67	1.25	5
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	18.7	5.59	5
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	9.34	0.875	5
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	9.34	2.86	5
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	9.34	1.31	5
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	9.34	3.82	5
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	9.34	1.01	5

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-04 RE\D
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:20
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	119		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	100		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	18		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	87		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	108		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	126		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	114		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	127		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	124		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	120		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	116		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	102		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	70		50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	149		50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	71		50-150

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:30
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/21/21 01:49
Analyst: HT
Percent Solids:

Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Results reported on an 'AS RECEIVED' basis.

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.461	0.021	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.461	0.042	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.230	0.036	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.922	0.059	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.461	0.048	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.922	0.077	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.230	0.042	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.230	0.056	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.230	0.039	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.461	0.165	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.461	0.126	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.230	0.069	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.230	0.120	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.230	0.062	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.461	0.264	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.922	0.276	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.461	0.186	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.461	0.043	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.461	0.141	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.461	0.090	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.461	0.078	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.461	0.065	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.461	0.188	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.461	0.050	1

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-05 Date Collected: 01/07/21 11:30

Client ID: MAPEI ULTRA BOND Date Received: 01/07/21

Sample Location: EDGARTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	123		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	128		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	59		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	109		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	100		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	94		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	53		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	102		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	96		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	55		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	123		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	46		10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**256**	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	117		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	142		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-05 RE\D
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:30
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:
Matrix: Solid
Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 13:08
Analyst: SG
Percent Solids: Results reported on an 'AS RECEIVED' basis.

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.77	J	ng/g	8.33	0.378	5
Perfluoropentanoic Acid (PFPeA)	6.08	J	ng/g	8.33	0.767	5
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	4.17	0.650	5
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	8.33	0.875	5
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	16.7	1.39	5
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	4.17	0.752	5
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	4.17	1.01	5
Perfluorooctanoic Acid (PFOA)	ND		ng/g	4.17	0.698	5
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	8.33	2.28	5
Perfluorononanoic Acid (PFNA)	ND		ng/g	4.17	1.25	5
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	4.17	2.17	5
Perfluorodecanoic Acid (PFDA)	ND		ng/g	4.17	1.12	5
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	16.7	4.98	5
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	8.33	0.780	5
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	8.33	2.55	5
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	8.33	1.17	5
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	8.33	3.41	5
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	8.33	0.900	5

Project Name: MVC TURF **Lab Number:** L2100733

Project Number: 143-319629-21001 **Report Date:** 02/11/21

SAMPLE RESULTS

Lab ID: L2100733-05 RE\D
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:30
Date Received: 01/07/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	126		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	116		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	113		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	22		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	110		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	136		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	124		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	**154**	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	**137**	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	128		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	124		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	117		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	66		50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	134		50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	65		50-150

TOTAL OXIDIZABLE PRECURSOR ASSAY

RESULTS SUMMARY

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Lab ID: L2100733-01
Client ID: GREENFIELD TURF
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:00
Date Received: 01/07/21
Field Prep: Not Specified

Parameter	Pre-Treatment Results	Pre-Treatment Qualifier	Pre-Treatment Units	Post-Treatment Results	Post-Treatment Qualifier	Post-Treatment Units	Difference Results	Difference Qualifier	Difference Units
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab									
Perfluorobutanoic Acid (PFBA)	ND		ng/g	7.06	J	ng/g	7.06	J	ng/g
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanoic Acid (PFOA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanoic Acid (PFNA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanoic Acid (PFDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	ND		ng/g	0		ng/g

TOTAL OXIDIZABLE PRECURSOR ASSAY

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Lab ID: L2100733-02
Client ID: BROCK SHOCK PAD
Sample Location: EDGARTOWN, MA

Date Collected: 11/24/20 09:30
Date Received: 01/07/21
Field Prep: Not Specified

Parameter	Pre-Treatment Results	Pre-Treatment Qualifier	Pre-Treatment Units	Post-Treatment Results	Post-Treatment Qualifier	Post-Treatment Units	Difference Results	Difference Qualifier	Difference Units
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab									
Perfluorobutanoic Acid (PFBA)	ND		ng/g	28.7	J	ng/g	28.7	J	ng/g
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanoic Acid (PFOA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanoic Acid (PFNA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanoic Acid (PFDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	ND		ng/g	0		ng/g

TOTAL OXIDIZABLE PRECURSOR ASSAY

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Lab ID: L2100733-03
Client ID: BROCK FILL
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:10
Date Received: 01/07/21
Field Prep: Not Specified

Parameter	Pre-Treatment Results	Pre-Treatment Qualifier	Pre-Treatment Units	Post-Treatment Results	Post-Treatment Qualifier	Post-Treatment Units	Difference Results	Difference Qualifier	Difference Units
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab									
Perfluorobutanoic Acid (PFBA)	ND		ng/g	2.11	J	ng/g	2.11	J	ng/g
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	20.4	F	ng/g	20.4		ng/g
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanoic Acid (PFOA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanoic Acid (PFNA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanoic Acid (PFDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	ND		ng/g	0		ng/g

TOTAL OXIDIZABLE PRECURSOR ASSAY

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Lab ID: L2100733-04
Client ID: REYNOLDS 775 GLUE
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:20
Date Received: 01/07/21
Field Prep: Not Specified

Parameter	Pre-Treatment Results	Pre-Treatment Qualifier	Pre-Treatment Units	Post-Treatment Results	Post-Treatment Qualifier	Post-Treatment Units	Difference Results	Difference Qualifier	Difference Units
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab									
Perfluorobutanoic Acid (PFBA)	ND		ng/g	8.07	J	ng/g	8.07	J	ng/g
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanoic Acid (PFOA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanoic Acid (PFNA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanoic Acid (PFDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	ND		ng/g	0		ng/g

TOTAL OXIDIZABLE PRECURSOR ASSAY

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Lab ID: L2100733-05
Client ID: MAPEI ULTRA BOND
Sample Location: EDGARTOWN, MA

Date Collected: 01/07/21 11:30
Date Received: 01/07/21
Field Prep: Not Specified

Parameter	Pre-Treatment Results	Pre-Treatment Qualifier	Pre-Treatment Units	Post-Treatment Results	Post-Treatment Qualifier	Post-Treatment Units	Difference Results	Difference Qualifier	Difference Units
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab									
Perfluorobutanoic Acid (PFBA)	ND		ng/g	3.77	J	ng/g	3.77	J	ng/g
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	6.08	J	ng/g	6.08	J	ng/g
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanoic Acid (PFOA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanoic Acid (PFNA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanoic Acid (PFDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	ND		ng/g	0		ng/g
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	ND		ng/g	0		ng/g

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/20/21 23:30
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1456772-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.500	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.500	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.250	0.039
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	1.00	0.065
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.500	0.053
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00	0.084
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.250	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.250	0.061
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.250	0.042
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.500	0.180
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.500	0.136
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.250	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.250	0.130
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.250	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.500	0.287
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00	0.299
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.500	0.202
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.500	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.500	0.153
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500	0.098
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.500	0.085
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.500	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.500	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.500	0.054

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/20/21 23:30
Analyst: HT

Extraction Method: ALPHA 23528
Extraction Date: 01/20/21 10:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-05 Batch: WG1456772-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	106		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	129		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**160**	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	120		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**137**	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	120		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	113		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	105		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	120		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	112		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	92		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	96		31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	120		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	17		10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	84		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	96		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 10:55
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab for sample(s): 01-05 Batch: WG1458673-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.500	0.023
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.500	0.046
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.250	0.039
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.500	0.053
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00	0.084
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.250	0.045
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.250	0.061
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.250	0.042
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.500	0.136
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.250	0.075
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.250	0.130
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.250	0.067
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00	0.299
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.500	0.047
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.500	0.153
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.500	0.070
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.500	0.204
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.500	0.054

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 10:55
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab for sample(s): 01-05 Batch: WG1458673-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	113		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	132		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	125		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	0		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	123		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	115		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	124		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	110		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	118		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	112		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	106		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	97		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	83		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	**0**	Q	50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	**5**	Q	50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	**0**	Q	50-150

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 11:45
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab for sample(s): 01-05 Batch: WG1458673-1 RE\D					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	2.50	0.114
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	2.50	0.230
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	1.25	0.195
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	2.50	0.262
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	5.00	0.418
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	1.25	0.226
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	1.25	0.302
Perfluorooctanoic Acid (PFOA)	ND		ng/g	1.25	0.210
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	2.50	0.682
Perfluorononanoic Acid (PFNA)	ND		ng/g	1.25	0.375
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	1.25	0.650
Perfluorodecanoic Acid (PFDA)	ND		ng/g	1.25	0.335
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	5.00	1.50
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	2.50	0.234
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	2.50	0.765
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	2.50	0.350
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	2.50	1.02
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	2.50	0.270

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 01/28/21 11:45
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 01/27/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL

Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab for sample(s): 01-05 Batch: WG1458673-1 RE\D

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	116		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	16		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	82		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	104		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	122		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	119		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	121		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	115		75-130
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	89		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	70		50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	**152**	Q	50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	73		50-150

Lab Control Sample Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1456772-2								
Perfluorobutanoic Acid (PFBA)	95		-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	93		-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	93		-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	100		-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	94		-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	117		-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	94		-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	106		-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	90		-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	98		-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	98		-		70-132	-		30
Perfluorononanoic Acid (PFNA)	92		-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	96		-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	99		-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	115		-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	99		-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	107		-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	105		-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	92		-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	103		-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	107		-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	111		-		69-135	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2100733

Report Date: 02/11/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 Batch: WG1456772-2								
Perfluorotridecanoic Acid (PFTrDA)	116		-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	98		-		69-133	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	104				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	130				58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**156**	Q			74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	101				14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**131**	Q			66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	116				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	119				78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	110				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100				20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	115				72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	115				79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	109				75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	79				19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	82				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	104				61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	20				10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	76				34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	98				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	103				24-159

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2100733

Report Date: 02/11/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab Associated sample(s): 01-05 Batch: WG1458673-2 WG1458673-3								
Perfluorobutanoic Acid (PFBA)	82		87		71-135	6		30
Perfluoropentanoic Acid (PFPeA)	86		92		69-132	7		30
Perfluorobutanesulfonic Acid (PFBS)	85		91		72-128	7		30
Perfluorohexanoic Acid (PFHxA)	85		90		70-132	6		30
Perfluoropentanesulfonic Acid (PFPeS)	85		86		73-123	1		30
Perfluoroheptanoic Acid (PFHpA)	85		90		71-131	6		30
Perfluorohexanesulfonic Acid (PFHxS)	86		88		67-130	2		30
Perfluorooctanoic Acid (PFOA)	85		90		69-133	6		30
Perfluoroheptanesulfonic Acid (PFHpS)	89		96		70-132	8		30
Perfluorononanoic Acid (PFNA)	83		86		72-129	4		30
Perfluorooctanesulfonic Acid (PFOS)	90		95		68-136	5		30
Perfluorodecanoic Acid (PFDA)	84		89		69-133	6		30
Perfluorononanesulfonic Acid (PFNS)	90		99		69-125	10		30
Perfluoroundecanoic Acid (PFUnA)	88		94		64-136	7		30
Perfluorodecanesulfonic Acid (PFDS)	94		103		59-134	9		30
Perfluorododecanoic Acid (PFDoA)	90		97		69-135	7		30
Perfluorotridecanoic Acid (PFTrDA)	86		92		66-139	7		30
Perfluorotetradecanoic Acid (PFTA)	92		96		69-133	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2100733

Report Date: 02/11/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution (Post-Treatment) - Mansfield Lab Associated sample(s): 01-05 Batch: WG1458673-2 WG1458673-3								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	115		113		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	135		131		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	132		131		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	3		4		0-25
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	125		121		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	119		114		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	127		130		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112		109		75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	119		119		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	119		119		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	116		111		75-130
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	1		0		0-25
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	111		106		61-155
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	105		101		54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		90		24-159
Perfluoro[13C3]Pentanoic Acid (M3PFPEA)	**0**	Q	**0**	Q	50-150
Perfluoro[1,2,3,4-13C4]Octanoic Acid (M4PFOA)	**4**	Q	**4**	Q	50-150
Perfluoro[1,2-13C2]Hexanoic Acid (M2PFHXA)	**0**	Q	**0**	Q	50-150

Matrix Spike Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1456772-3 QC Sample: L2100733-03 Client ID: BROCK FILL												
Perfluorobutanoic Acid (PFBA)	ND	4.74	4.54	96		-	-		71-135	-		30
Perfluoropentanoic Acid (PFPeA)	ND	4.74	4.14	87		-	-		69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.21	3.88	92		-	-		72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	4.44	4.01	90		-	-		62-145	-		30
Perfluorohexanoic Acid (PFHxA)	ND	4.74	4.33	91		-	-		70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	4.45	5.02	113		-	-		73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	4.74	4.36	92		-	-		71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	4.33	4.88	113		-	-		67-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	4.74	4.08	86		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	4.51	4.72	105		-	-		64-140	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	4.51	3.59	80		-	-		70-132	-		30
Perfluorononanoic Acid (PFNA)	ND	4.74	4.08	86		-	-		72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	4.4	3.81	87		-	-		68-136	-		30
Perfluorodecanoic Acid (PFDA)	ND	4.74	4.77	101		-	-		69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	4.55	5.17	114		-	-		65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	4.56	2.95	**65**	Q	-	-		69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	4.74	5.56	117		-	-		63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	4.74	4.41	93		-	-		64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	4.57	2.36	**52**	Q	-	-		59-134	-		30
Perfluorooctanesulfonamide (FOSA)	ND	4.74	4.18F	88		-	-		67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	4.74	5.00	106		-	-		61-139	-		30
Perfluorododecanoic Acid (PFDoA)	ND	4.74	5.45	115		-	-		69-135	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: MVC TURF

Project Number: 143-319629-21001

Lab Number: L2100733

Report Date: 02/11/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1456772-3 QC Sample: L2100733-03 Client ID: BROCK FILL												
Perfluorotridecanoic Acid (PFTrDA)	ND	4.74	6.08	128		-	-		66-139	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	4.74	4.77	101		-	-		69-133	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**370**	Q			19-175
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**328**	Q			14-167
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**479**	Q			20-154
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	128				34-137
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	116				31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	124				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	112				75-130
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	97				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	**63**	Q			71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	100				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	134				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	149				24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	105				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	69				58-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	37				10-117
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	132				79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	112				75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	119				72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	**161**	Q			74-139

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1456772-4 QC Sample: L2100733-04 Client ID: REYNOLDS 775 GLUE						
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/g	NC		30
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/g	NC		30
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/g	NC		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/g	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/g	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/g	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/g	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/g	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/g	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/g	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/g	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/g	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1456772-4 QC Sample: L2100733-04 Client ID: REYNOLDS 775 GLUE						
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/g	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/g	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		85		61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	114		114		58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	121		132		74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	100		93		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96		112		66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	91		101		71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		109		78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	99		100		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	128		102		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	112		112		72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	109		110		79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99		102		75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	169		108		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**178**	Q	**216**	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	114		129		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	**0**	Q	**0**	Q	10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		95		34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	100		124		54-150

Lab Duplicate Analysis
Batch Quality Control

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1456772-4 QC Sample: L2100733-04 Client ID: REYNOLDS 775 GLUE

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	88		125		24-159

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2100733-01A	Bag	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-01B	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-01C	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		SUB-TOF(14)
L2100733-02A	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-02B	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-02C	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		SUB-TOF(14)
L2100733-02X	Glass 250ml unpreserved split	A	NA		3.1	Y	Absent		SUB-TOF(14)
L2100733-03A	Bag	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-03B	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-03C	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-03D	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-03E	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		SUB-TOF(14)
L2100733-04A	Bag	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-04B	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-04C	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-04D	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-04E	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		SUB-TOF(14)
L2100733-05A	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001

Lab Number: L2100733
Report Date: 02/11/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2100733-05B	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-05C	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-05D	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-05E	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		HOLD-537(28),A2-537-ISOTOPE(14),A2-TOP-537-ISOTOPE(14)
L2100733-05F	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		SUB-TOF(14)

*Values in parentheses indicate holding time in days

Project Name: MVC TURF
Project Number: 143-319629-21001
Lab Number: L2100733
Report Date: 02/11/21

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	MVC TURF	**Lab Number:**	L2100733
Project Number:	143-319629-21001	**Report Date:**	02/11/21

GLOSSARY

Acronyms

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	MVC TURF	**Lab Number:**	L2100733
Project Number:	143-319629-21001	**Report Date:**	02/11/21

Footnotes

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

Terms

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

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

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

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	MVC TURF	**Lab Number:**	L2100733
Project Number:	143-319629-21001	**Report Date:**	02/11/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	MVC TURF	**Lab Number:**	L2100733
Project Number:	143-319629-21001	**Report Date:**	02/11/21

REFERENCES

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/7/21

ALPHA Job #: L2100733

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: TETRA TECH
Address: 100 NICKERSON Road, MARLBOROUGH MA
Phone: 508-561-6593
Email: RON.MYRICK@TETRATECH.COM

Project Information

Project Name: MVC TURF
Project Location: EDGARTOWN MA
Project #: 143-319624-21001
Project Manager: MYRICK
ALPHA Quote #:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: 1/21/2021

Additional Project Information:

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
PFAS TOP (Indicate each TOF (GALGAITH)*

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments	TOTAL # BOTTLES
733-01	GREENFIELD TURF	1/7/21	1100	SOLID	KM	1 BAG	
-02	BLOCK SHOCK PAD	11/24/20	930	SOLID	KM	PREVIOUSLY SUBMITTED	
-03	BLOCK FILL	1/7/21	1110	SOLID	KM	1 BAG	
-04	REYNOLDS 775 GLUE	1/7/21	1120	SOLID	KM	1 BAG	
-05	MAPEI ULTRA BOND	1/7/21	1130	SEMI SOLID	KM	2 JARS	

DIRECT SAMPLES TO PHIL BASSIGNANI ARTIFICIAL TURF PROJECT

* SUBCONTRACTED TOF ANALYSIS

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

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Container Type													
Preservative													

Relinquished By:	Date/Time	Received By:	Date/Time
	1/7/21 1300	AAL	1/7/21 1301
	1/7/21 1505	AAL	1/7/21 1505
	1/7/21 1930	Bezio AAL	1/7/21 1930
MB Bezio AAL	1/7/21 2033		1/7/21 2033

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Galbraith Laboratories, Inc.
2323 Sycamore Drive
Knoxville, TN 37921

Alpha Job Number
L2100733

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 508.439.5137
Email: nhunt@alphalab.com

Project Information

Project Location: MA
Project Manager: Nichole Hunt

Turnaround & Deliverables Information

Due Date: 01/25/21
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2100733

Report to include Method Blank, LCS/LCSD: YES

Additional Comments: Send all results/reports to subreports@alphalab.com Galbraith Pricing Quote 14953

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	GREENFIELD TURF	01-07-21 11:00	Solid	Total Organic Fluorine	
	BLOCK SHOCK PAD	11-24-20 09:30	SOLID	Total Organic Fluorine	
	BLOCK FILL	01-07-21 11:10	SOLID	Total Organic Fluorine	
	REYNOLDS 775 GLUE	01-07-21 11:20	SOLID	Total Organic Fluorine	
	MAPEI ULTRA BOND	01-07-21 11:30	SOLID	Total Organic Fluorine	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature]	1/12/21 1200	UPS	
Form No: AL_subcoc				

Subcontract Chain of Custody

Galbraith Laboratories, Inc.
2323 Sycamore Drive
Knoxville, TN 37921

Alpha Job Number
L2100733

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 508.439.5137
Email: nhunt@alphalab.com

Project Information

Project Location: MA
Project Manager: Nichole Hunt

Turnaround & Deliverables Information

Due Date: 01/25/21
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2100733

Report to include Method Blank, LCS/LCSD: YES

Additional Comments: Send all results/reports to subreports@alphalab.com Galbraith Pricing Quote 14953

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	GREENFIELD TURF	01-07-21 11:00	Solid	Total Organic Fluorine	
*	BLOCK SHOCK PAD	11-24-20 09:30	SOLID	Total Organic Fluorine	
	BLOCK FILL	01-07-21 11:10	SOLID	Total Organic Fluorine	
	REYNOLDS 775 GLUE	01-07-21 11:20	SOLID	Total Organic Fluorine	
	MAPEI ULTRA BOND	01-07-21 11:30	SOLID	Total Organic Fluorine	

* Additional volume for samples submitted 1/13/21.

	Relinquished By:	Date/Time:	Received By:	Date/Time:
Form No: AL_subcoc				

Report Number: 128391 Report Date: 2021-02-01

Amended Laboratory Report

Report prepared for:
Nichole Hunt
Alpha Analytical Labs
8 Walkup Dr
Westborough, MA 01581
Email: nhunt@alphalab.com, subreports@alphalab.com

Report prepared by:
Debbie S Robertson

Purchase Order:

For further assistance, contact:
Debbie S Robertson
Report Production Coordinator
PO Box 51610
Knoxville, TN 37950 -1610
(865) 546-1335
debbierobertson@galbraith.com

Sample: Brock Shock Pad
Lab ID: 2021-M-7028 **Received:** 2021-01-21

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
F : Fluorine					
	GLI Procedure E9-3	26 ppm	As Received	209.33 mg	2021-01-25

For all samples on this report:

1. Amended Report: This report amends data included in report 128242

Signatures:

Published By:	Debbie.S.Robertson	2021-02-01T17:14:52.777-05:00
Created By:	Debbie.S.Robertson	2021-02-01T17:14:43.37-05:00

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Report Number: 128069 Report Date: 2021-01-19

Laboratory Report

Report prepared for:
Nichole Hunt
Alpha Analytical Labs
8 Walkup Dr
Westborough, MA 01581
Email: nhunt@alphalab.com, subreports@alphalab.com

Report prepared by:
Debbie S Robertson

Purchase Order:

For further assistance, contact:
Debbie S Robertson
Report Production Coordinator
PO Box 51610
Knoxville, TN 37950 -1610
(865) 546-1335
debbierobertson@galbraith.com

Sample: GREENFIELD TURF
Lab ID: 2021-M-6443 **Received:** 2021-01-13

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
F : Fluorine					
	GLI Procedure E9-3	70 ppm	As Received	202.15 mg	2021-01-14

Sample: BROCK SHOCK PAD –
Lab ID: 2021-M-6444 **Received:** 2021-01-13

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)

1. There was insufficient sample to test for fluorine; if you want to submit additional 200 mgs of sample. please include a copy of this report.

Sample: BROCK FILL
Lab ID: 2021-M-6445 **Received:** 2021-01-13

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
F : Fluorine					
	GLI Procedure E9-3	< 10 ppm	As Received	212.45 mg	2021-01-14

Sample: REYNOLDS 775 GLUE
Lab ID: 2021-M-6446 **Received:** 2021-01-13

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
F : Fluorine					
	GLI Procedure E9-3	10 ppm	As Received	211.67 mg	2021-01-14

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Sample: MAPEI ULTRA BOND
Lab ID: 2021-M-6447 **Received:** 2021-01-13

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
F : Fluorine					
	GLI Procedure E9-3	11 ppm	As Received	200.96 mg	2021-01-14

Signatures:

Published By:	Debbie.S.Robertson	2021-01-19T20:04:41.3-05:00
Created By:	Debbie.S.Robertson	2021-01-19T20:03:35.063-05:00

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Laboratory Report

Report prepared for:
Nichole Hunt
Alpha Analytical Labs
8 Walkup Dr
Westborough, MA 01581
Email: nhunt@alphalab.com, subreports@alphalab.com

Report prepared by:
Christy Love

Purchase Order:

For further assistance, contact:
Christy Love
Report Coordinator
PO Box 51610
Knoxville, TN 37950 -1610
(865) 546-1335
christylove@galbraith.com

Sample: Greenfield Turf
Lab ID: 2021-M-8600 **Received:** 2021-02-12

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
a09: Fluoride (F-)					
	GLI Procedure E9-1	< 10 ppm	As Received	206.70 mg	2021-02-12
F : Fluorine					
	GLI Procedure E9-3	70 ppm	As Received	202.15 mg	2021-01-14
r19: Organic Fluorine					
	Calculation	70 ppm	As Received	Calculation	2021-02-24

Sample: Brock Fill
Lab ID: 2021-M-8601 **Received:** 2021-02-12

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
a09: Fluoride (F-)					
	GLI Procedure E9-1	< 10 ppm	As Received	215.99 mg	2021-02-12
F : Fluorine					
	GLI Procedure E9-3	< 10 ppm	As Received	212.45 mg	2021-01-14
r19: Organic Fluorine					
	Calculation	< 10 ppm	As Received	Calculation	2021-02-24

Sample: Reynolds 775 Glue
Lab ID: 2021-M-8602 **Received:** 2021-02-12

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
a09: Fluoride (F-)					
	GLI Procedure E9-1	< 10 ppm	As Received	220.91 mg	2021-02-12
F : Fluorine					
	GLI Procedure E9-3	10 ppm	As Received	211.67 mg	2021-01-14
r19: Organic Fluorine					

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	Calculation	10 ppm	As Received	Calculation	2021-02-24

Sample: Brock Shock Pad
Lab ID: 2021-M-8603 **Received:** 2021-02-12

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
a09: Fluoride (F-)					
	GLI Procedure E9-1	< 10 ppm	As Received	202.27 mg	2021-02-12
F : Fluorine					
	GLI Procedure E9-3	26 ppm	As Received	209.33 mg	2021-01-25
r19: Organic Fluorine					
	Calculation	26 ppm	As Received	Calculation	2021-02-24

Sample: Mapei Ultra Bond
Lab ID: 2021-M-8604 **Received:** 2021-02-12

Analysis	Method	Result	Basis	Sample Amount Used	Date (Time)
a09: Fluoride (F-)					
	GLI Procedure E9-1	< 10 ppm	As Received	221.19 mg	2021-02-12
	GLI Procedure E9-1 (matrix spike)	96 % Recovery	As Received	213.72 mg	2021-02-12
F : Fluorine					
	GLI Procedure E9-3	11 ppm	As Received	200.96 mg	2021-01-14
r19: Organic Fluorine					
	Calculation	11 ppm	As Received	Calculation	2021-02-24

Signatures:

Published By:	Christy.Love	2021-02-24T17:41:59.73-05:00
Modified By:	Christy.Love	2021-02-24T17:37:43.03-05:00
Created By:	Christy.Love	2021-02-24T17:31:51.293-05:00

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Appendix C

Theoretical Stormwater Mass Loading Calculations for Select Analytes

Martha's Vineyard Regional High School Athletic Fields Project (DRI 352-M4)
Theoretical Stormwater Mass Loading Calculations for Select Analytes

Known Data:

Area of Turf Field	2.42	acres
Precipitation from 100 Year Storm	7.22	inches
Total Precipitation/Year	45	inches

Calculations:

Area of Turf Field	9793	square meters
100 year storm	0.183	meters
Total Precipitation/Year	1.1	meters
Volume of Water in 100 Year Storm	1795994	Liters
Volume of Water per Year	11193870	Liters

Metals - Potential Mass Loading			**Notes**
SPLP for Antimony (1/2 detection limit)	92	µg/L	1
Mass of Antimony for 100 Year Storm	0.4	pounds/event	
Mass of Antimony per Year	2	pounds/year	
SPLP for Barium (detections only)	247	µg/L	
Mass of Barium for 100 Year Storm	0.98	pounds/event	
Mass of Barium per Year	6.1	pounds/year	
SPLP for Lead (1/2 detection limit)	26	µg/L	1
Mass of Lead for 100 Year Storm	0.1	pounds/event	
Mass of Lead per Year	0.6	pounds/year	
SPLP for Nickel (1/2 detection limit)	56	µg/L	1
Mass of Nickel for 100 Year Storm	0.2	pounds/event	
Mass of Nickel per Year	1	pounds/year	
SPLP for Zinc (1/2 detection limit)	764	µg/L	1
Mass of Zinc for 100 Year Storm	3.0	pounds/event	
Mass of Zinc per Year	19	pounds/year	

PFAS - Potential Mass Loading			
SPLP for PFHpA	8.38	ng/L	1
Mass of PFHpA for 100 Year Storm	0.0000332	pounds/event	
Mass of PFHpA per Year	0.000207	pounds/year	
SPLP for PFOA	3.06	ng/L	1
Mass of PFOA for 100 Year Storm	0.0000121	pounds/event	
Mass of PFOA per Year	0.0000755	pounds/year	
SPLP for PFAS6 (1/2 detection limit)	12.0	ng/L	1
Mass of PFAS6 for 100 Year Storm	0.0000473	pounds/event	
Total Mass PFAS6 per Year	0.000295	pounds/year	

SVOCs - Potential Mass Loading			
SPLP for Benzyl Alcohol (1/2 detection limit)	19	µg/L	1
Mass of Benzyl Alcohol for 100 Year Storm	0.08	pounds/event	
Mass of Benzyl Alcohol per Year	0.5	pounds/year	
SPLP for DEHP (1/2 detection limit)	7.5	µg/L	1
Mass of DEHP for 100 Year Storm	0.03	pounds/event	
Mass of DEHP per Year	0.2	pounds/year	
SPLP for Dimethylphenol, 2,4- (1/2 detection limit)	12	µg/L	1
Mass of Dimethylphenol, 2,4- for 100 Year Storm	0.047	pounds/event	
Mass of Dimethylphenol, 2,4- per Year	0.29	pounds/year	
SPLP for Cresol, o- (1/2 detection limit)	19	µg/L	1
Mass of Cresol, o- for 100 Year Storm	0.074	pounds/event	
Mass of Cresol, o- per Year	0.46	pounds/year	
SPLP for Cresol, m- (1/2 detection limit)	26	µg/L	1
Mass of Cresol, m- for 100 Year Storm	0.10	pounds/event	
Mass of Cresol, m- per Year	0.64	pounds/year	
SPLP for Phenol (1/2 detection limit)	26	µg/L	1
Mass of Phenol for 100 Year Storm	0.10	pounds/event	
Mass of Phenol per Year	0.63	pounds/year	

Notes:

1. SPLP calculated using 1/2 of the detection limit for compounds/elements not detected
2. A simplified model was used to calculate SPLP results representing material exposed to stormwater. The calculations used the sum of the SPLP concentrations for each of the synthetic turf field components.



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