RTI LABORATORIES, INC.

RTI Laboratories
33080 Industrial Rd.
Livonia, MI 48150
TEL: (734) 422-8000
Website: www.rtilab.com

Friday, August 11, 2023

Grayson Anderson
Sprinturf
146 Fairchild Street, Suite 150
Daniel Island, SC 29492
TEL: (843) 936-6023
FAX:

RE: Manchester by the sea

Work Order #: 2307443

Dear Grayson Anderson:

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

This report may only be reproduced in its entirety. Individual pages, reproduced without supporting documentation, do not contain related information and may be misinterpreted by other data reviewers.

Quality control data is within laboratory defined or method specified acceptance limits except if noted.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Lloyd Kaufman

Vice President, Director of Materials Sciences

RTI Laboratories, Inc. - Analytical Report

WO#: 2307443

Date Reported: 8/11/2023
Original

Client:	Sprinturf	**Collection Date:**	7/18/2023 12:00:00 AM
Project:	Manchester by the sea		
Lab ID:	2307443-001	**Matrix:**	Solid
Client Sample ID:	Sand		

Analysis	Result	RL	Qual	Units	DF	Date Analyzed
Perfluorinated Compounds Solid Matrix LC/MS/MS	**Method: DOD QSM5.3 B15**					**Analyst: DKS**
11-Chloroeicosfluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OYUdS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
1H,1H,2H,2H-Perfluorodecanesulfonate (8:2 FTS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
1H,1H,2H,2H-Perfluorohexanesulfonate (4:2 FTS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Dodecafluoro-3H-4,8-dioxanonanoate (ADONA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
HFPO-DA (GEN X)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
N-ethyl perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
N-methyl perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorobutanesulfonic acid (PFBS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorobutanoic acid (PFBA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorodecanesulfonate (PFDS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorodecanoic acid (PFDA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorododecanoic acid (PFDoA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluoroheptanesulfonate (PFHpS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluoroheptanoic acid (PFHpA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorohexanesulfonic acid (PFHxS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorohexanoic acid (PFHxA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorononanesulfonate (PFNS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorononanoic acid (PFNA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorooctanesulfonic acid (PFOS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorooctanoic acid (PFOA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorooctansulfonamide (FOSA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluoropentanesulfonate (PFPeS)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluoropentanoic acid (PFPeA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorotetradecanoic acid (PFTeDA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluorotridecanoic acid (PFTrDA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Perfluoroundecanoic acid (PFUdA)	ND	32000		ng/Kg	1	8/11/2023 11:20 AM
Surr: MFPBA	183	50-150	S	%Rec	1	8/11/2023 11:20 AM
Surr: M5PFPeA	135	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M3PFBS	143	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M2-4:2FTS	115	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M5PFHxA	52.2	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M3 GEN X	69.4	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M5PFHpA	87.4	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M3PFHxS	96.5	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M2-6:2FTS	76.1	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M8PFOA	89.0	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M9PFNA	86.7	50-150		%Rec	1	8/11/2023 11:20 AM

RTI Laboratories, Inc. - Analytical Report

WO#: 2307443

Date Reported: 8/11/2023
Original

Client:	Sprinturf	**Collection Date:**	7/18/2023 12:00:00 AM
Project:	Manchester by the sea		
Lab ID:	2307443-001	**Matrix:**	Solid
Client Sample ID:	Sand		

Analysis	Result	RL	Qual	Units	DF	Date Analyzed
Surr: M8PFOS	63.8	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M2-8:2FTS	73.6	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M6PFDA	95.2	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: D3-N-MeFOSAA	50.4	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: D5-N-EtFOSAA	72.9	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M7PFUdA	115	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M8FOSA	78.2	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: MPFDoA	119	50-150		%Rec	1	8/11/2023 11:20 AM
Surr: M2PFTeDA	43.5	50-150	S	%Rec	1	8/11/2023 11:20 AM

RTI Laboratories, Inc. - Definitions and Acronyms

WO#: 2307443

Date Reported: 8/11/2023
Original

DEFINITIONS:

DF: Dilution factor; the dilution factor applied to the prepared sample.

DUP: Duplicate; aliquots of a sample taken from the same container under laboratory conditions and processed and analyzed independently, used to calculate Precision (%RPD).

LCS: Laboratory Control Sample; prepared by adding a known amount of target analytes to a specified amount of clean matrix and prepared with the batch of samples, used to calculate Accuracy (%REC).

LCSD: A duplicate LCS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

L+: LCS Failed High

L-: LCS Failed Low

MBLK: Method Blank; a sample of similar matrix that does not contain target analytes or interference that may impact the analytical results and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedure, used to assess and verify that the analytical process is free of contamination.

MDL: Method Detection Limit; The lowest concentration of analyte that can be detected by the method in the applicable matrix.

Mg/Kg or mg/L: Units of part per million (PPM) – milligram per Kilogram (W/W) or milligram per Liter (W/V).

MS: Matrix Spike; prepared by adding a known amount of target analytes to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available, used to calculate Accuracy (%REC)

MSD: A duplicate MS sample, used to calculate both Accuracy (%REC) and Precision (%RPD)

% REC: Percent Recovery of a known spike (SPK); a measure of accuracy expressed as a percentage of a measured (recovered) concentration compared to the known concentration (SPK) added to the sample. This is compared to the Low Limit and High Limit.

% RPD: Relative Percent Difference; a measure of precision expressed as a percentage of the difference between two duplicates relative to the average concentration. This is compared to the RPD Limit.

PL: Permit limit:; Not included on all reports. Used primarily for wastewater discharge permits.

PQL: Practical Quantitation Limit; The lowest verified limit to which data is quantified without qualifications. Analyte concentrations below PQL are reported either as ND or as a number with a “J” qualifier.

Qual: Qualifier that applies to the analyte reported

RL: Reporting Limit: See PQL

SPK: Spike; used in the QC section for both SPK Value and SPK Ref Val

Ug/Kg or ug/L: Units of part per billion (PPB) – microgram per Kilogram (W/W) or microgram per Liter (W/V).

QUALIFIERS:

*/X: Reported value exceeds the maximum allowed concentration by regulation or permit

B/v: Analyte detected in the associated Method Blank at a concentration > RL.

E: Analyte concentration reported that exceeds the upper calibration standard. Greater uncertainty is associated with this result and data should be considered estimated.

H/@: Holding time for preparation or analysis has been exceeded

J/n: Analyte concentration is reported, and is less than the PQL and greater than or equal to the established MDL. Greater uncertainty is associated with this result and data reported is estimated. These analytes are not routinely reviewed nor narrated as to their potential for being laboratory artifacts.

m/M: Manual Integration used to determine area response

ND/t: Analyte concentration is less than the Reporting Limit.

P: Second column RPD exceeds 40%

R: % RPD exceeds control limits

S/Q: % REC exceeds control limits

T: MBLK result is greater than 1/2 of the LOQ

U: The analyte concentration is less than the DL.

\: Laboratory Control Sample (LCS) recovery outside of acceptable range

/: Matrix Spike (MS) recovery outside of acceptable range

Y: CCV % REC exceeds control limits

Z: ICV % REC exceeds control limits

CHAIN OF CUSTODY

PAGE: | OF:

RTI LABORATORIES

Environmental Sciences Division
31628 Glendale Street
Livonia MI, 48150

Materials Testing Division
33080 Industrial Road
Livonia, MI 48150

PHONE: (734) 422-8000
FAX: (734) 422-5342
www.rtilab.com

RTI WORK ORDER NO: 2307442

Please Include Email Address of Report Recipient !!!

SUBMITTING COMPANY: SprinturF LLC	REPORT TO (Name): Kyle Horne	BILL TO: AP@sprinturF.com
PROJECT NAME: Manchester By the Sea / PROJECT # / QUOTE #:	COMPANY: Sprinturf	COMPANY: SprinturF LLC
SAMPLING LOCATION (STATE or COUNTRY): New Jersey	ADDRESS	ADDRESS: 146 Fairchild Suite 150
SPECIAL INSTRUCTIONS / COMMENTS:	CITY, STATE, ZIP	CITY, STATE, ZIP: Daniel Island
	PHONE: 843-648-0411 / EMAIL (OR FAX IF NO EMAIL AVAILABLE):	P.O NUMBER:
SAMPLER'S PRINTED NAME: Justo Lucena	SAMPLER'S SIGNATURE:	

TESTS REQUESTED: PFAS

ITEM NUMBER	SAMPLE I.D.	DATE SAMPLED	TIME SAMPLED (24-hour format)	MATRIX CODE (see codes below)	NBR OF BOTTLES	NBR OF CONTAINERS AND PRESERVATIVES: NONE	HCL	HNO_3	H_2SO_4	NaOH	Methanol	OTHER	PFAS	pH Acceptable? Y N n/a (Lab only)	COMMENTS (Methanol Preserved Weights, HOT Sample Notation, Additional Sample Description, Air Volume, etc)
1	Sand	7-8-23		SD	1	1							X	1	
2															
3															
4															
5															
6															
7															
8															
9															
10															

	Date	Time		Date	Time
Relinquished By:			Received By: RTI-Industrial	7-9-23	09:33
Relinquished By:			Received By:	7-9-23	12:30
Relinquished By:			Received By:		

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

ALL REPORTING IS VIA THE RTI "FLASHPOINT" ONLINE SYSTEM UNLESS OTHERWISE SPECIFIED

FOR LAB USE ONLY

Temp of samples: 5.6 °C On Wet Ice ? blue ice

Comments:

TURNAROUND DESIRED: Standard ☐ **RUSH:** Next BD ☐ 2nd BD ☐ 3rd BD ☐

Note: RUSH requests will incur surcharges!

Distribution: White - Lab; Pink - Field

See reverse side for Laboratory Terms and Conditions of Service

MATRIX CODES: A = AIR; DW = DRINKING WATER; GW = GROUNDWATER; L = LIQUID; O = OIL; WW = WASTE WATER; S = SOIL; SD = SOLID; SL = SLUDGE; SV = SOLVENT WASTE; W = WATER; WP = WIPE; SW = SURFACE WATER

ORIGIN ID:DYLA (856) 785-0720
EVELYN FULLERTON
U.S.SILICA COMPANY
9035 NOBLE STREET
P.O.BOX 254
MAURICETOWN, NJ 08329
UNITED STATES US

SHIP DATE: 18JUL23
ACTWGT: 11.00 LB
CAD: 100230742/INET4535
DIMS: 13x11x11 IN

BILL THIRD PARTY

TO ARMANDO
RTI LABORATORIES
33080 INDUSTRIAL RD.

LIVONIA MI 48150
(734) 422-8000 REF:
INV:
PO: DEPT

583A/6AE4/9AE3

FedEx Express

J233020071001uv

WED - 19 JUL 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7727 6529 6198

48150
DTW

NX CFAA

MI-US

Campbell

TB= 5.8°C
C.F.: -0.2°C
5.6°C

Blue ICP

After printing this label:
CONSIGNEE COPY - PLEASE PLACE IN FRONT OF POUCH
1. Fold the printed page along the horizontal line
2. Place label in shipping pouch and affix it to your shipment

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.