



May 19, 2021

Vista Work Order No. 2104281

Mr. Robert Roznowski
SUEZ
210 Harbor Drive
Alpena, MI 49707

Dear Mr. Roznowski,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on April 28, 2021 under your Project Name 'Suez'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 2104281

Case Narrative

Sample Condition on Receipt:

One biosolid sample and one aqueous sample were received and stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were received in good condition and within the method temperature requirements. As directed, sample "Field Blank" was placed on hold.

Analytical Notes:

PFAS Isotope Dilution Method

The sample was extracted and analyzed for a selected list of PFAS using Vista's Isotope Dilution Method. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The sample was extracted and analyzed within the hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above the Reporting Limit (RL). The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier. The extraction chemist noted during preparation the presence of possible matrix interferences in the samples. The responses of the internal standards with low recoveries were greater than 10:1 signal-to-noise, which is the limit generally considered acceptable for accurate quantitation by isotope dilution analysis.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2104281-01	Alpena WRP Biosolids	27-Apr-21 08:45	28-Apr-21 09:30	HDPE Bottle, 125 mL
2104281-02	Field Blank	27-Apr-21 08:45	28-Apr-21 09:30	HDPE Bottle, 125 mL

ANALYTICAL RESULTS

Sample ID: Method Blank
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	SUEZ	Matrix:	Solid	Lab Sample:	B1E0023-BLK1	Column:	BEH C18
Project:	Suez						

Analyte	CAS Number	Conc. (ng/g)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFPeA	2706-90-3	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFBS	375-73-5	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
4:2 FTS	757124-72-4	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFHxA	307-24-4	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFPeS	2706-91-4	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
HFPO-DA	13252-13-6	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFHpA	375-85-9	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
ADONA	919005-14-4	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFHxS	355-46-4	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
6:2 FTS	27619-97-2	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFOA	335-67-1	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFHpS	375-92-8	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFNA	375-95-1	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFOSA	754-91-6	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFOS	1763-23-1	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
9Cl-PF3ONS	756426-58-1	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFDA	335-76-2	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
8:2 FTS	39108-34-4	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFNS	68259-12-1	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
MeFOSAA	2355-31-9	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
EtFOSAA	2991-50-6	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFUnA	2058-94-8	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFDS	335-77-3	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
11Cl-PF3OUdS	763051-92-9	ND	3.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFDoA	307-55-1	ND	1.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFTTrDA	72629-94-8	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
PFTeDA	376-06-7	ND	2.00		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	87.1	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C3-PFPeA	IS	87.6	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C3-PFBS	IS	93.5	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C3-HFPO-DA	IS	93.9	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C2-4:2 FTS	IS	93.5	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C2-PFHxA	IS	90.7	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C4-PFHpA	IS	86.8	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C3-PFHxS	IS	98.2	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1
13C2-6:2 FTS	IS	98.0	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 06:56	1

Sample ID: OPR						PFAS Isotope Dilution Method					
Client Data Name: SUEZ Project: Suez Matrix: Solid						Laboratory Data Lab Sample: B1E0023-BS1 Column: BEH C18					
Analyte	CAS Number	Amt Found (ng/g)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	18.7	20.0	93.3	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFPeA	2706-90-3	19.0	20.0	95.2	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFBS	375-73-5	18.2	20.0	91.1	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
4:2 FTS	757124-72-4	18.5	20.0	92.5	60 - 145		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFHxA	307-24-4	20.1	20.0	100	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFPeS	2706-91-4	18.6	20.0	92.8	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
HFPO-DA	13252-13-6	16.4	20.0	82.1	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFHpA	375-85-9	18.0	20.0	90.0	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
ADONA	919005-14-4	18.2	20.0	91.1	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFHxS	355-46-4	19.5	20.0	97.4	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
6:2 FTS	27619-97-2	19.3	20.0	96.6	60 - 140		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFOA	335-67-1	18.1	20.0	90.4	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFHpS	375-92-8	18.7	20.0	93.6	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFNA	375-95-1	17.7	20.0	88.7	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFOSA	754-91-6	19.1	20.0	95.4	65 - 140		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFOS	1763-23-1	20.0	20.0	100	65 - 140		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
9CI-PF3ONS	756426-58-1	18.8	20.0	94.2	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFDA	335-76-2	17.7	20.0	88.4	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
8:2 FTS	39108-34-4	18.7	20.0	93.7	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFNS	68259-12-1	18.4	20.0	92.2	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
MeFOSAA	2355-31-9	17.2	20.0	85.9	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
EtFOSAA	2991-50-6	17.7	20.0	88.6	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFUnA	2058-94-8	17.9	20.0	89.5	65 - 140		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFDS	335-77-3	16.8	20.0	83.8	50 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
11CI-PF3OUdS	763051-92-9	23.8	20.0	119	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFDoA	307-55-1	18.9	20.0	94.3	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFTTrDA	72629-94-8	20.2	20.0	101	60 - 140		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
PFTeDA	376-06-7	18.1	20.0	90.6	65 - 135		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
Labeled Standards	Type			% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS			90.4	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C3-PFPeA	IS			91.3	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C3-PFBS	IS			95.0	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C3-HFPO-DA	IS			86.5	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-4:2 FTS	IS			90.7	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-PFHxA	IS			93.3	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1

Sample ID: OPR					PFAS Isotope Dilution Method				
Client Data Name: SUEZ Project: Suez					Laboratory Data Lab Sample: B1E0023-BS1 Column: BEH C18				
Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C4-PFHpA	IS	89.0	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C3-PFHxS	IS	94.3	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-6:2 FTS	IS	95.1	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C5-PFNA	IS	84.9	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C8-PFOA	IS	36.9	10 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-PFOA	IS	92.8	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C8-PFOS	IS	90.9	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-PFDA	IS	82.5	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-8:2 FTS	IS	86.3	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
d3-MeFOSAA	IS	60.5	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-PFUnA	IS	67.3	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
d5-EtFOSAA	IS	59.5	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-PFDoA	IS	61.8	25 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1
13C2-PFTeDA	IS	57.2	20 - 150		B1E0023	05-May-21	0.500 g	12-May-21 07:06	1

Sample ID: Alpena WRP Biosolids
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	SUEZ	Matrix:	Biosolid	Lab Sample:	2104281-01	Column:	BEH C18
Project:	Suez	Date Collected:	27-Apr-21 08:45	Date Received:	28-Apr-21 09:30		
				% Solids:	3.43		

Analyte	CAS Number	Conc. (ng/g)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFPeA	2706-90-3	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFBS	375-73-5	3.16	0.996	Q	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
4:2 FTS	757124-72-4	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFHxA	307-24-4	5.68	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFPeS	2706-91-4	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
HFPO-DA	13252-13-6	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFHpA	375-85-9	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
ADONA	919005-14-4	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFHxS	355-46-4	2.22	0.996	Q	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
6:2 FTS	27619-97-2	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFOA	335-67-1	1.73	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFHpS	375-92-8	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFNA	375-95-1	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFOSA	754-91-6	5.93	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFOS	1763-23-1	51.9	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
9Cl-PF3ONS	756426-58-1	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFDA	335-76-2	5.35	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
8:2 FTS	39108-34-4	1.99	1.99	Q	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFNS	68259-12-1	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
MeFOSAA	2355-31-9	58.6	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
EtFOSAA	2991-50-6	19.4	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFUnA	2058-94-8	1.58	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFDS	335-77-3	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
11Cl-PF3OUdS	763051-92-9	ND	2.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFDoA	307-55-1	ND	0.996		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFTTrDA	72629-94-8	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
PFTeDA	376-06-7	ND	1.99		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	72.0	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C3-PFPeA	IS	81.3	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C3-PFBS	IS	87.8	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C3-HFPO-DA	IS	71.1	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-4:2 FTS	IS	128	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-PFHxA	IS	82.4	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C4-PFHpA	IS	75.8	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C3-PFHxS	IS	79.7	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1

Sample ID: Alpena WRP Biosolids					PFAS Isotope Dilution Method				
Client Data Name: SUEZ Project: Suez Matrix: Biosolid Date Collected: 27-Apr-21 08:45				Laboratory Data					
				Lab Sample: 2104281-01		Column: BEH C18			
				Date Received: 28-Apr-21 09:30					
		% Solids: 3.43							
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-6:2 FTS	IS	82.2	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C5-PFNA	IS	36.5	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C8-PFOSA	IS	11.6	10 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-PFOA	IS	69.1	25 - 150		B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C8-PFOS	IS	20.4	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-PFDA	IS	16.1	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-8:2 FTS	IS	24.4	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
d3-MeFOSAA	IS	4.50	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-PFUnA	IS	6.60	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
d5-EtFOSAA	IS	3.60	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-PFDoA	IS	2.80	25 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
13C2-PFTeDA	IS	1.50	20 - 150	H	B1E0023	05-May-21	14.6 g	12-May-21 07:17	1
RL - Reporting limit		The results are reported in dry weight. The sample size is reported in wet weight. Results reported to RL.			When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.				

B	This compound was also detected in the method blank
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
RL	For 537.1, the reported RLs are the MRLs.
TEQ	Toxic Equivalency, sum of the toxic equivalency factors (TEF) multiplied by the sample concentrations.
TEQMax	TEQ calculation that uses the detection limit as the concentration for non-detects
TEQMin	TEQ calculation that uses zero as the concentration for non-detects
TEQRisk	TEQ calculation that uses ½ the detection limit as the concentration for non-detects
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	21-023-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-26
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2020018
Massachusetts Department of Environmental Protection	M-CA413
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1980678
New Hampshire Environmental Accreditation Program	207720
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Ohio Environmental Protection Agency	87778
Oregon Laboratory Accreditation Program	4042-016
Pennsylvania Department of Environmental Protection	017
Texas Commission on Environmental Quality	T104704189-21-12
Vermont Department of Health	VT-4042
Virginia Department of General Services	10769
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p- Dioxins & Polychlorinated Dibenzofurans	EPA 23
Polychlorinated Dibenzodioxins in Ambient Air by GC/HRMS	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613/1613B
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537.1
Determination of Per- and Polyfluoroalkyl Substances in Drinking Water by Isotope Dilution Anion Exchange Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry	EPA 533
Perfluorooctanesulfonate (PFOS) and Perfluorooctanoate (PFOA) - Method for Unfiltered Samples Using Solid Phase Extraction and Liquid Chromatography/Mass Spectrometry	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: 2104281 Temp: 2.7 °C
 Storage ID: R-13, WR-2 Storage Secured: Yes ☒ No ☐

Project ID: Suez PO#: _____ Sampler: Jeff Schwab
 (name)

TAT Standard: ☐ 21 days
 (check one): Rush (surcharge may apply)
☐ 14 days ☐ 7 days Specify: _____

Jeff Schwab 4-27-21 3pm Marissa Sparks 04/28/21 0930
 Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

Relinquished by (printed name and signature) Date Time Received by (printed name and signature) Date Time

SHIP TO: Vista Analytical Laboratory
 1104 Windfield Way
 El Dorado Hills, CA 95762
 (916) 673-1520 * Fax (916) 673-0106

ATTN: _____

Method of Shipment: _____

Tracking No.: _____

Add Analysis(es) Requested

Container(s)

PFAS by Isotope Dilution

EPA Method 537 (DW only)

Quantity Type Matrix PFOA/PFOS List 6 UCMR3 PFAS List 6 537.1 List 14 or 18 (Circle One) EPA Draft List of 24 OTHER: Please attach analyte list

PFOA/PFOS UCMR3 PFAS List 6 537.1 List of 14 537.1 List of 18

Sample ID	Date	Time	Location/ Sample Description	Quantity	Type	Matrix	PFOA/PFOS List 6	UCMR3 PFAS List 6	537.1 List 14 or 18 (Circle One)	EPA Draft List of 24	OTHER: Please attach analyte list	PFOA/PFOS	UCMR3 PFAS List 6	537.1 List of 14	537.1 List of 18	Comments
<u>Alpena WRP Biosolids</u>	<u>4-27-21</u>	<u>845a</u>		<u>1</u>		<u>X</u>										
<u>Field Blank</u>	<u>4-27-21</u>	<u>845a</u>		<u>1</u>												

Special Instructions/Comment

PFOS Biosolids Michigan 28

SEND DOCUMENTATION AND RESULTS TO:

Name: Robert. Roznowski
 Company: Suez
 Address: 210 Harbor Dr
 City: Alpena State: MI Zip: 49707
 Phone: (989) 854-1402
 Email: robert.roznowski@Suez.com

Container Types: P = HDPE, PJ = HDPE Jar
 PY = Polypropylene, O = Other _____

Bottle Preservation Type:
 TZ = Trizma: _____

Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment,
 SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other _____

Sampling Soils for Per-and Polyfluoroalkyl Substances (PFAS) Using ASTM D7968 and 7968 MOD

FINAL STEPS

- (1) Record the sample location, date and time on the Chain-Of-Custody Record (COC) FORM-N0013A. Ensure this information matches that of the bottle labels.
- (2) Return the bottles and bags back to the cooler in which they were sent. Pack the cooler gently with doubled, resealable bags containing natural ice to preserve the samples between 0°C and 6°C. Place custody seal on cooler. Return the samples promptly to the lab.

ACKNOWLEDGEMENT

I hereby acknowledge that I ____ (Int), HAVE / HAVE NOT (Circle one) collected all submitted samples for Per Fluoro-Alkyl Substances (PFAS) Testing as summarized above. I understand that not collecting samples using ASTM D7968 procedures may jeopardize the validity of any results obtained.



(Signature)

4-17-21

(Date)

Submit this document with the completed Chain-Of-Custody Records that accompanies
samples.

Sample Log-In Checklist

 Page # 1 of 1

 Vista Work Order #: 2104281

 TAT std

Samples Arrival:	Date/Time <u>04/28/21 0930</u>	Initials: <u>WJS</u>	Location: <u>WR-2</u>
	Shelf/Rack: <u>N/A</u>		
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> On Trac
	<input type="radio"/> GLS	<input type="radio"/> DHL	<input type="radio"/> Hand Delivered
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Techni Ice
	<input type="radio"/> Dry Ice	<input type="radio"/> None	
Temp °C: <u>2.8</u> (uncorrected)	Probe used: Y / <input checked="" type="radio"/> N		Thermometer ID: <u>IR-4</u>
Temp °C: <u>2.7</u> (corrected)			

	YES	NO	NA
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Airbill <u> </u> Trk # <u>7735 5847 7267</u>	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Shipping Container	Vista	<input checked="" type="checkbox"/> Client	Retain
			<input checked="" type="checkbox"/> Return
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
Chain of Custody / Sample Documentation Complete?	<u>WJS</u> <u>04/28/21</u> <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Logged In:	Date/Time <u>04/28/21 1459</u>	Initials: <u>WJS/KA</u>	Location: <u>R-13, WR-2</u>
	Shelf/Rack: <u>A-1, E-2</u>		
COC Anomaly/Sample Acceptance Form completed?			
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

 Comments: (2) no sample matrix

WJS 05/10/21

CoC/Label Reconciliation Report WO# 2104281

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2104281-01	A Alpena WRP Biosolids	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> C	27-Apr-21 08:45 <input checked="" type="checkbox"/>	HDPE Bottle, 125 mL	Solid	
2104281-02	A Field Blank	<input checked="" type="checkbox"/>	27-Apr-21 08:45 <input type="checkbox"/> D	HDPE Bottle, 125 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample Custody Seals Intact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Adequate Sample Volume?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Container Type Appropriate for Analysis(es)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: A Reconciled by sample location and sample ID
 D No date /time listed on sample container.
 C Sample contain black Tint.

Preservation Documented: Na₂S₂O₃ Trizma NH₄CH₃CO₂ ☒ None Other

Verified by/Date: 1/20/2021

ANOMALY FORM

Vista Work Order

2104281

Initial/Date The following checked issues were noted during sample receipt and login:

- _____ ☐ 1. The samples were received out of temperature at (WI-PHT): _____
Was Ice present: Yes No Melted Blue Ice
- _____ ☐ 2. The Chain-of-Custody (CoC) was not relinquished properly.
- _____ ☐ 3. The CoC did not include collection time(s). 00:00 will be used unless notified otherwise.
- _____ ☐ 4. The sample(s) did not include a sample collection time. All or Sample Name: _____
- _____ ☐ 5. A sample ID discrepancy was found. See the Reconciliation report.
The CoC Sample ID will be used unless notified otherwise.
- _____ ☐ 6. A sample date and/or time discrepancy was found. See the Reconciliation report.
The CoC Sample date/time will be used unless notified otherwise.
- 4/25/21 ☒ 7. The CoC did not include a sample matrix. The following sample matrix will be used: Biosolid
- _____ ☐ 8. Insufficient volume received for analysis. All or Sample Name: _____
- _____ ☐ 9. The backup bottle was received broken. Sample Name: _____
- _____ ☐ 10. CoC not received, illegible or destroyed.
- _____ ☐ 11. The sample(s) were received out of holding time. All or Sample Name: _____
- _____ ☐ 12. The CoC did not include an analysis. All or Sample Name: _____
- _____ ☐ 13. Sample(s) received without collection date. All or Sample Name: _____
- _____ ☐ 14. Sample(s) not received. All or Sample Name: _____
- _____ ☐ 15. Sample(s) received broken. All or Sample Name: _____
- _____ ☐ 16. An incorrect container-type was used. All or Sample Name: _____
- _____ ☐ 17. Other:

Bolded items require sign-off

Client Contacted: Robert Roznowski

Date of Contact: 4/30/21

Vista Client Manager: KJR

Resolution: Client informed that sample "Alpena WRP Biosolids" will be reported as Biosolid, unless otherwise requested, via email.