15-Feb-2022

Jeff Ranes
Delhi Charter Twp POTW
5961 McCue Rd
Holt, MI 48842-9646

Re: **1st Quarter Biosolids 2022** Work Order: **22011311**

Dear Jeff, Revision: **1**

ALS Environmental received 1 sample on 21-Jan-2022 08:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 51.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Julienn Williams

Bill Carey
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS Group, USA

Date: 15-Feb-22

Client: Delhi Charter Twp POTW
Project: 1st Quarter Biosolids 2022
Work Order: **22011311**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
22011311-01	1st Quarter Biosolids 2022	Sludge		1/20/2022 13:45	1/21/2022 08:00	☐

Client: Delhi Charter Twp POTW
Project: 1st Quarter Biosolids 2022
WorkOrder: **22011311**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
°C	Degrees Celcius
µg/Kg	Micrograms per Kilogram
BTU/lb as recd.	British Thermal Units per Pound as Received
lbs/gallon	Pounds per Gallon
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

Client: Delhi Charter Twp POTW
Project: 1st Quarter Biosolids 2022
Work Order: 22011311

Case Narrative

The attached "Sample Receipt Checklist" documents the date of receipt, status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. A copy of the laboratory's scope of accreditation is available upon request.

Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting.

Any flags on MS/MSD samples not addressed in this narrative are unrelated to samples in this report.

With the following exceptions, all sample analyses achieved analytical criteria.

Batch R337044, Method D240, Sample 1st Quarter Biosolids 2022 (22011311-01B): sample pre dried for analysis

Batch 191561, Method D7968-17a, Sample 1st Quarter Biosolids 2022 (22011311-01D): The Continuing Calibration Verification did not meet acceptance criteria with high bias, however, the sample results were non-detect for the following analytes: PFTeA

Batch 191561, Method D7968-17a, Sample 1st Quarter Biosolids 2022 (22011311-01D): Surrogate high due to matrix interference. See attached QC report.

Batch 191561, Method D7968-17a, Sample 1st Quarter Biosolids 2022 (22011311-01D): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low. See attached QC report.

Batch 190736, Method SW8260C, Sample LCS-190736: The LCS recovery was above the upper control limit. All the sample results in the batch were non-detect. No qualification is necessary for this analyte: methyl iodide

Batch 190715, Method SW6020B, Sample 22011322-03BMS: MS and MSD are for an unrelated sample

Batch 190756, Method A4500-NH3 G-11, Sample 22011328-01A MS: MS and MSD are for an unrelated sample

Batch 190838, Method A4500-NO2 B-11, Sample 22011328-01A MS: MS and MSD are for an unrelated sample

Batch 190715, Method SW6020B, Sample 22011322-03BMS: MS and MSD are for an unrelated sample

Batch 190736, Method SW8260C, Sample 22011329-01A MS: MS and MSD are for an unrelated sample

Batch 190715, Method SW6020B, Sample 22011322-03BMS: MS and MSD are for an unrelated sample

Batch 190715, Method SW6020B, Sample 22011322-03BMS: MS and MSD are for an unrelated sample

Batch 190814, Method E365.1 R2.0, Sample 22011311-01A MS: The MS recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte:

Batch 190814, Method E365.1 R2.0, Sample 22011311-01A MSD: The MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte:

Batch 190805, Method A4500-NH3 G-11, Sample 22011311-01A MSD: The MSD recovery was outside of the control limit. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte:

Batch 191561, Method D7968-17a, Sample LCS1-191561: The LCS recovery was above the upper control limit. The sample results for this analyte may be biased high for this analyte: PFDS (Reporting Limit Check)

Batch 190821, Method SW9056A, Sample 22011311-01A MS: Matrix spike value was outside upper limit of calibration. Processed at equivalent dilution level as the parent. Chloride

Batch 190821, Method SW9056A, Sample 22011311-01A MSD: Matrix spike duplicate value was outside upper limit of calibration. Processed at equivalent dilution level as the parent. Chloride

Batch 191561, Method D7968-17a, Sample LCSD2-191561: The LCSD2 recovery was above the upper control limit. All sample results in the batch were non-detect. No qualification is necessary for this analyte: PFTeA

Batch 191561, Method D7968-17a, Sample LCS3-191561: The LCS recovery was within acceptance criteria, but recovered below the MDL and does not show on the final report. No qualification necessary. Raw data available upon request: HFPO-DA

ALS Group, USA

Date: *15-Feb-2022*

Client: Delhi Charter Twp POTW
Project: 1st Quarter Biosolids 2022
Sample ID: 1st Quarter Biosolids 2022
Collection Date: 1/20/2022 01:45 PM

Work Order: 22011311
Lab ID: 22011311-01
Matrix: SLUDGE

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			**SW7471B**	Prep: SW7471 1/31/22 11:07		Analyst: **EJC**
Mercury	**0.65**		**0.23**	**mg/Kg-dry**	1	1/31/2022 04:56 PM
METALS BY ICP-MS			**SW6020B**	Prep: SW3050B 1/21/22 14:31		Analyst: **STP**
Arsenic	**9.1**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Barium	**340**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Cadmium	ND		2.1	mg/Kg-dry	1	1/21/2022 07:47 PM
Calcium	**27,000**		**510**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Chromium	**83**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Copper	**330**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Iron	**110,000**		**210**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Lead	**5.2**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Magnesium	**2,500**		**210**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Molybdenum	**11**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Nickel	**17**		**5.1**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Potassium	**840**		**210**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Selenium	ND		5.1	mg/Kg-dry	1	1/21/2022 07:47 PM
Silver	ND		5.1	mg/Kg-dry	1	1/21/2022 07:47 PM
Sodium	**1,900**		**310**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
Zinc	**610**		**10**	**mg/Kg-dry**	1	1/21/2022 07:47 PM
PFAS BY LC-MS-MS			**D7968-17A**	Prep: D7968-17a 2/10/22 12:11		Analyst: **AK**
Perfluorobutanoic Acid (PFBA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluoropentanoic Acid (PFPeA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorohexanoic Acid (PFHxA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluoroheptanoic Acid (PFHpA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorooctanoic Acid (PFOA)	**550**		**350**	**ng/Kg-dry**	1	2/10/2022 09:37 PM
Perfluorononanoic Acid (PFNA)	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorodecanoic Acid (PFDA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluoroundecanoic Acid (PFUnA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorododecanoic Acid (PFDoA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorotridecanoic Acid (PFTriA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorotetradecanoic Acid (PFTeA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorobutanesulfonic Acid (PFBS)	**990**		**350**	**ng/Kg-dry**	1	2/10/2022 09:37 PM
Perfluoropentanesulfonic Acid (PFPeS)	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorohexanesulfonic Acid (PFHxS)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorooctanesulfonic Acid (PFOS)	**4,300**		**350**	**ng/Kg-dry**	1	2/10/2022 09:37 PM
Perfluorononanesulfonic Acid (PFNS)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Perfluorodecanesulfonic Acid (PFDS)	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

Client: Delhi Charter Twp POTW
Project: 1st Quarter Biosolids 2022 **Work Order:** 22011311
Sample ID: 1st Quarter Biosolids 2022 **Lab ID:** 22011311-01
Collection Date: 1/20/2022 01:45 PM **Matrix:** SLUDGE

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	**1,900**		**1,700**	**ng/Kg-dry**	1	2/10/2022 09:37 PM
Perfluorooctanesulfonamide (PFOSA)	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM
N-Ethylperfluorooctanesulfonamidoacetic Acid	**5,500**		**1,700**	**ng/Kg-dry**	1	2/10/2022 09:37 PM
N-Methylperfluorooctanesulfonamidoacetic Acid	**9,700**		**1,700**	**ng/Kg-dry**	1	2/10/2022 09:37 PM
11Cl-Pf3OUdS	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM
9Cl-PF3ONS	ND		350	ng/Kg-dry	1	2/10/2022 09:37 PM
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND		1,700	ng/Kg-dry	1	2/10/2022 09:37 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035A 1/21/22 15:56		Analyst: **MF**
Toluene	ND		4,100	µg/Kg	1	1/25/2022 03:16 AM
FECAL COLIFORM			**A9222 D-06**	Prep: EXTRACT 1/21/22 10:30		Analyst: **SG**
Fecal Coliform	ND		1,300	cfu/gram-dry	100	1/22/2022 10:36 AM
BIOCHEMICAL OXYGEN DEMAND (MODIFIED)			**A5210B-11**	Prep: A5210B 1/21/22 12:27		Analyst: **KNC**
Biochemical Oxygen Demand	**92,000**		**260**	**mg/Kg-dry**	1	1/26/2022 11:25 AM
CALORIFIC VALUE (BTUS)			**D240**			Analyst: **RZM**
Calorific Value (BTU)	**6,100**		**100**	**BTU/lb as recd.**	1	1/26/2022 11:45 AM
CYANIDE, TOTAL			**SW9012B**	Prep: SW9012B 1/31/22 12:45		Analyst: **JMT**
Cyanide, Total	ND		0.40	mg/Kg-dry	1	1/31/2022 01:53 PM
CHEMICAL OXYGEN DEMAND			**E410.4 R2.0**	Prep: EXTRACT 1/22/22 10:57		Analyst: **SG**
Chemical Oxygen Demand	**21,000**		**6,500**	**mg/Kg-dry**	1	1/22/2022 03:11 PM
DENSITY			**A2710 F**			Analyst: **RZM**
Density	**8.9**			**lbs/gallon**	1	2/2/2022 04:38 PM
ANIONS BY ION CHROMATOGRAPHY			**SW9056A**	Prep: EXTRACT 1/24/22 17:38		Analyst: **QTN**
Chloride	**2,200**		**130**	**mg/Kg-dry**	1	1/26/2022 02:50 AM
Sulfate	ND		130	mg/Kg-dry	1	1/26/2022 02:50 AM
MOISTURE			**SW3550C**			Analyst: **ALG**
Moisture	**92**		**0.10**	**% of sample**	1	1/21/2022 03:16 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

Client: Delhi Charter Twp POTW
Project: 1st Quarter Biosolids 2022 **Work Order:** 22011311
Sample ID: 1st Quarter Biosolids 2022 **Lab ID:** 22011311-01
Collection Date: 1/20/2022 01:45 PM **Matrix:** SLUDGE

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
AMMONIA AS NITROGEN (DISTILLED)			**A4500-NH3 G-11**	Prep: A4500-NH3 B 1/24/22 14:06		Analyst: **CAC**
Ammonia as Nitrogen	**12,000**		**3,800**	**mg NH3-N/Kg-dry**	20	1/24/2022 04:55 PM
NITROGEN, NITRITE			**A4500-NO2 B-11**	Prep: EXTRACT 1/25/22 10:08		Analyst: **CAC**
Nitrogen, Nitrite	ND		2.8	mg/Kg-dry	1	1/25/2022 04:05 PM
NITROGEN, NITRATE			**E353.2**	Prep: EXTRACT 1/25/22 10:08		Analyst: **CAC**
Nitrogen, Nitrate	**3.7**		**2.6**	**mg/Kg-dry**	1	1/25/2022 12:57 PM
OIL AND GREASE			**SW9071B**	Prep: SW9071B 1/28/22 11:52		Analyst: **JMJ**
Oil and Grease	ND		9,200	mg/Kg-dry	1	1/31/2022
PHOSPHORUS, TOTAL			**E365.1 R2.0**	Prep: E365.1 R2.0 1/24/22 14:35		Analyst: **JMT**
Phosphorus, Total	**43,000**		**12,000**	**mg/Kg-dry**	40	1/25/2022 12:20 PM
SOIL PH MEASURED IN WATER AT NOTED TEMP.			**SW9045D**	Prep: SW9045D 1/21/22 18:26		Analyst: **KNC**
pH	**7.45**		**0.10**	**s.u.**	1	1/24/2022 01:49 PM
Temperature	**20.5**		**0.10**	**°C**	1	1/24/2022 01:49 PM
PHENOLICS, TOTAL			**SW9066**	Prep: SW9066 2/1/22 12:44		Analyst: **RZM**
Phenolics, Total	**7.2**		**6.6**	**mg/Kg-dry**	1	2/1/2022 02:06 PM
NITROGEN, TOTAL KJELDAHL			**A4500-NH3 G-11**	Prep: A4500-N B 1/22/22 14:51		Analyst: **CAC**
Nitrogen, Total Kjeldahl	**43,000**		**31,000**	**mg/Kg-dry**	25	1/24/2022 12:03 PM
TOTAL SOLIDS			**A2540 G-11**			Analyst: **ALG**
Total Solids	**7.6**		**0.050**	**% of sample**	1	1/21/2022 03:16 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group, USA

Date: 15-Feb-22

Client: Delhi Charter Twp POTW

Work Order: 22011311

Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191063** Instrument ID **HG4** Method: **SW7471B**

MBLK Sample ID: **MBLK-191063-191063** Units: **mg/Kg** Analysis Date: **1/31/2022 04:53 PM**

Client ID: Run ID: **HG4_220131A** SeqNo: **8142324** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS Sample ID: **LCS-191063-191063** Units: **mg/Kg** Analysis Date: **1/31/2022 04:55 PM**

Client ID: Run ID: **HG4_220131A** SeqNo: **8142325** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1742	0.020	0.1665	0	105	80-120	0			

MS Sample ID: **22011562-43BMS** Units: **mg/Kg** Analysis Date: **1/31/2022 05:23 PM**

Client ID: Run ID: **HG4_220131A** SeqNo: **8142341** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1937	0.019	0.1573	0.0238	108	75-125	0			

MSD Sample ID: **22011562-43BMSD** Units: **mg/Kg** Analysis Date: **1/31/2022 05:25 PM**

Client ID: Run ID: **HG4_220131A** SeqNo: **8142342** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1969	0.019	0.1561	0.0238	111	75-125	0.1937	1.63	35	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **190715** Instrument ID **ICPMS4** Method: **SW6020B**

MBLK Sample ID: **MBLK-190715-190715** Units: **mg/Kg** Analysis Date: **1/21/2022 07:31 PM**
Client ID: Run ID: **ICPMS4_220121B** SeqNo: **8126046** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.25								
Copper	ND	0.25								
Iron	ND	10								
Lead	ND	0.25								
Magnesium	ND	10								
Molybdenum	ND	0.25								
Nickel	ND	0.25								
Potassium	ND	10								
Selenium	ND	0.25								
Silver	ND	0.25								
Sodium	ND	15								
Zinc	ND	0.50								

LCS Sample ID: **LCS-190715-190715** Units: **mg/Kg** Analysis Date: **1/21/2022 07:32 PM**
Client ID: Run ID: **ICPMS4_220121B** SeqNo: **8126047** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	5.434	0.25	5	0	109	80-120	0			
Barium	4.937	0.25	5	0	98.7	80-120	0			
Cadmium	4.936	0.10	5	0	98.7	80-120	0			
Calcium	502	25	500	0	100	80-120	0			
Chromium	5.651	0.25	5	0	113	80-120	0			
Copper	5.836	0.25	5	0	117	80-120	0			
Iron	563.1	10	500	0	113	80-120	0			
Lead	4.931	0.25	5	0	98.6	80-120	0			
Magnesium	590.4	10	500	0	118	80-120	0			
Molybdenum	4.894	0.25	5	0	97.9	80-120	0			
Nickel	5.614	0.25	5	0	112	80-120	0			
Potassium	590.2	10	500	0	118	80-120	0			
Selenium	4.492	0.25	5	0	89.8	80-120	0			
Silver	5.198	0.25	5	0	104	80-120	0			
Sodium	594.1	15	500	0	119	80-120	0			
Zinc	5.671	0.50	5	0	113	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190715** Instrument ID **ICPMS4** Method: **SW6020B**

MS Sample ID: **22011322-03BMS** Units: **mg/Kg** Analysis Date: **1/21/2022 07:53 PM**

Client ID: Run ID: **ICPMS4_220121B** SeqNo: **8126058** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.57	0.38	7.68	6.594	64.8	75-125	0			S
Barium	55.74	0.38	7.68	125.6	-909	75-125	0			SO
Cadmium	5.393	0.15	7.68	0.2705	66.7	75-125	0			S
Calcium	28360	38	768	22650	744	75-125	0			SEO
Chromium	19.57	0.38	7.68	8.973	138	75-125	0			S
Copper	24.25	0.38	7.68	19.01	68.2	75-125	0			S
Iron	9393	15	768	6468	381	75-125	0			SO
Lead	56.19	0.38	7.68	93.91	-491	75-125	0			SO
Magnesium	7312	15	768	6545	99.8	75-125	0			O
Molybdenum	6.155	0.38	7.68	0.6423	71.8	75-125	0			S
Nickel	15.65	0.38	7.68	6.988	113	75-125	0			
Potassium	1246	15	768	393.1	111	75-125	0			
Selenium	5.054	0.38	7.68	0.192	63.3	75-125	0			S
Silver	4.601	0.38	7.68	0.04355	59.3	75-125	0			S
Sodium	641.4	23	768	62.91	75.3	75-125	0			
Zinc	89.14	0.77	7.68	78.22	142	75-125	0			SO

MSD Sample ID: **22011322-03BMSD** Units: **mg/Kg** Analysis Date: **1/21/2022 07:55 PM**

Client ID: Run ID: **ICPMS4_220121B** SeqNo: **8126059** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	7.872	0.37	7.452	6.594	17.2	75-125	11.57	38.1	20	SR
Barium	28.56	0.37	7.452	125.6	-1300	75-125	55.74	64.5	20	SRO
Cadmium	3.608	0.15	7.452	0.2705	44.8	75-125	5.393	39.7	20	SR
Calcium	36590	37	745.2	22650	1870	75-125	28360	25.4	20	SREO
Chromium	8.689	0.37	7.452	8.973	-3.81	75-125	19.57	77	20	SR
Copper	15.16	0.37	7.452	19.01	-51.6	75-125	24.25	46.1	20	SR
Iron	4533	15	745.2	6468	-260	75-125	9393	69.8	20	SRO
Lead	29.73	0.37	7.452	93.91	-861	75-125	56.19	61.6	20	SRO
Magnesium	5992	15	745.2	6545	-74.2	75-125	7312	19.8	20	SO
Molybdenum	4.08	0.37	7.452	0.6423	46.1	75-125	6.155	40.5	20	SR
Nickel	7.601	0.37	7.452	6.988	8.23	75-125	15.65	69.3	20	SR
Potassium	748.5	15	745.2	393.1	47.7	75-125	1246	49.9	20	SR
Selenium	3.509	0.37	7.452	0.192	44.5	75-125	5.054	36.1	20	SR
Silver	3.17	0.37	7.452	0.04355	42	75-125	4.601	36.8	20	SR
Sodium	441.8	22	745.2	62.91	50.8	75-125	641.4	36.8	20	SR
Zinc	42.48	0.75	7.452	78.22	-480	75-125	89.14	70.9	20	SRO

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

MBLK Sample ID: **MBLK-190849-190849** Units: **µg/Kg** Analysis Date: **2/1/2022 05:09 AM**
Client ID: Run ID: **LCMS1_220131B** SeqNo: **8145094** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid 4:2 (FtS	ND	1.0								
Fluorotelomer Sulphonic Acid 6:2 (FtS	ND	1.0								
Fluorotelomer Sulphonic Acid 8:2 (FtS	ND	1.0								
Fluorotelomer Sulphonic Acid 10:2 (Ft	ND	1.0								
Perfluorobutanesulfonic Acid (PFBS)	ND	1.0								
Perfluorobutanoic Acid (PFBA)	ND	1.0								
Perfluorodecanesulfonic Acid (PFDS)	ND	1.0								
Perfluorodecanoic Acid (PFDA)	ND	1.0								
Perfluorododecanesulfonic Acid (PFDc	ND	1.0								
Perfluorododecanoic Acid (PFDoA)	ND	1.0								
Perfluoroheptanesulfonic Acid (PFHpS	ND	1.0								
Perfluoroheptanoic Acid (PFHpA)	ND	1.0								
Perfluorohexadecanoic Acid (PFHxDA	ND	1.0								
Perfluorohexanesulfonic Acid (PFHxS)	ND	1.0								
Perfluorohexanoic Acid (PFHxA)	ND	1.0								
Perfluorononanesulfonic Acid (PFNS)	ND	1.0								
Perfluorononanoic Acid (PFNA)	ND	1.0								
Perfluorooctadecanoic Acid (PFODA)	ND	1.0								
Perfluorooctanesulfonamide (PFOSA)	ND	1.0								
Perfluorooctanesulfonic Acid (PFOS)	ND	1.0								
Perfluorooctanoic Acid (PFOA)	ND	1.0								
Perfluoropentanesulfonic Acid (PFPeS	ND	1.0								
Perfluoropentanoic Acid (PFPeA)	ND	1.0								
Perfluorotetradecanoic Acid (PFTeA)	ND	1.0								
Perfluorotridecanoic Acid (PFTriA)	ND	1.0								
Perfluoroundecanoic Acid (PFUnA)	ND	1.0								
N-ethylperfluoro-1-octanesulfonamide	ND	1.0								
N-Ethylperfluorooctanesulfonamidoace	ND	1.0								
N-Ethylperfluorooctanesulfonamidoeth	ND	1.0								
N-methylperfluoro-1-octanesulfonamid	ND	1.0								
N-Methylperfluorooctanesulfonamidoa	ND	1.0								
N-Methylperfluorooctanesulfonamidoe	ND	1.0								
Hexafluoropropylene oxide dimer acid	ND	1.0								
4,8-Dioxa-3H-perfluorononanoic Acid (	ND	1.0								
11Cl-Pf3OUdS	ND	1.0								
9Cl-PF3ONS	ND	1.0								
Surr: 13C2-FtS 4:2	*20.66*	0	*18.68*	0	*111*	*50-150*	0			
Surr: 13C2-FtS 6:2	*21.47*	0	*19*	0	*113*	*50-150*	0			
Surr: 13C2-FtS 8:2	*20.54*	0	*19.16*	0	*107*	*50-150*	0			
Surr: 13C2-PFDA	*21.25*	0	*20*	0	*106*	*50-150*	0			
Surr: 13C2-PFDoA	*19.87*	0	*20*	0	*99.3*	*50-150*	0			
Surr: 13C2-PFHxA	*21.24*	0	*20*	0	*106*	*50-150*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxDA	*21.09*	0	*20*	0	*105*	*50-150*	0
Surr: 13C2-PFTeA	*20.35*	0	*20*	0	*102*	*50-150*	0
Surr: 13C2-PFUnA	*23.02*	0	*20*	0	*115*	*50-150*	0
Surr: 13C3-HFPO-DA	*18.48*	0	*20*	0	*92.4*	*50-150*	0
Surr: 13C3-PFBS	*18.15*	0	*18.6*	0	*97.6*	*50-150*	0
Surr: 13C4-PFBA	*20.13*	0	*20*	0	*101*	*50-150*	0
Surr: 13C4-PFHpA	*20.85*	0	*20*	0	*104*	*50-150*	0
Surr: 13C4-PFOA	*22.11*	0	*20*	0	*111*	*50-150*	0
Surr: 13C4-PFOS	*19.31*	0	*19.1*	0	*101*	*50-150*	0
Surr: 13C5-PFNA	*22.7*	0	*20*	0	*113*	*50-150*	0
Surr: 13C5-PFPeA	*19.93*	0	*20*	0	*99.6*	*50-150*	0
Surr: 13C8-FOSA	*19.16*	0	*20*	0	*95.8*	*50-150*	0
Surr: 18O2-PFHxS	*20.18*	0	*18.9*	0	*107*	*50-150*	0
Surr: d5-N-EtFOSA	*17.66*	0	*20*	0	*88.3*	*50-150*	0
Surr: d5-N-EtFOSAA	*23.78*	0	*20*	0	*119*	*50-150*	0
Surr: d9-N-EtFOSE	*21.26*	0	*20*	0	*106*	*50-150*	0
Surr: d3-N-MeFOSA	*20.61*	0	*20*	0	*103*	*50-150*	0
Surr: d3-N-MeFOSAA	*21.32*	0	*20*	0	*107*	*50-150*	0
Surr: d7-N-MeFOSE	*19.34*	0	*20*	0	*96.7*	*50-150*	0

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

LCS Sample ID: **LCS-190849-190849** Units: **µg/Kg** Analysis Date: **2/1/2022 05:01 AM**
Client ID: Run ID: **LCMS1_220131B** SeqNo: **8145093** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid 4:2 (FtS	3.983	1.0	3.736	0	107	62-145	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	3.713	1.0	3.792	0	97.9	64-140	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	4.699	1.0	3.832	0	123	65-137	0			
Fluorotelomer Sulphonic Acid 10:2 (Ft	4.449	1.0	3.856	0	115	40-160	0			
Perfluorobutanesulfonic Acid (PFBS)	3.125	1.0	3.536	0	88.4	72-128	0			
Perfluorobutanoic Acid (PFBA)	4.167	1.0	4	0	104	71-135	0			
Perfluorodecanesulfonic Acid (PFDS)	3.756	1.0	3.856	0	97.4	59-134	0			
Perfluorodecanoic Acid (PFDA)	3.834	1.0	4	0	95.8	69-133	0			
Perfluorododecanesulfonic Acid (PFDc	4.216	1.0	3.872	0	109	69-134	0			
Perfluorododecanoic Acid (PFDoA)	3.55	1.0	4	0	88.8	69-135	0			
Perfluoroheptanesulfonic Acid (PFHpS	4.267	1.0	3.808	0	112	70-132	0			
Perfluoroheptanoic Acid (PFHpA)	3.334	1.0	4	0	83.4	71-131	0			
Perfluorohexadecanoic Acid (PFHxDA	3.846	1.0	4	0	96.1	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	4.152	1.0	3.64	0	114	67-130	0			
Perfluorohexanoic Acid (PFHxA)	3.802	1.0	4	0	95	70-132	0			
Perfluorononanesulfonic Acid (PFNS)	4.182	1.0	3.84	0	109	69-125	0			
Perfluorononanoic Acid (PFNA)	4.076	1.0	4	0	102	72-129	0			
Perfluorooctadecanoic Acid (PFODA)	3.754	1.0	4	0	93.8	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	3.871	1.0	4	0	96.8	67-137	0			
Perfluorooctanesulfonic Acid (PFOS)	4.02	1.0	3.712	0	108	68-136	0			
Perfluorooctanoic Acid (PFOA)	4.209	1.0	4	0	105	69-133	0			
Perfluoropentanesulfonic Acid (PFPeS	3.997	1.0	3.752	0	107	73-123	0			
Perfluoropentanoic Acid (PFPeA)	3.85	1.0	4	0	96.2	69-132	0			
Perfluorotetradecanoic Acid (PFTeA)	3.831	1.0	4	0	95.8	69-133	0			
Perfluorotridecanoic Acid (PFTriA)	3.63	1.0	4	0	90.7	66-139	0			
Perfluoroundecanoic Acid (PFUnA)	4.014	1.0	4	0	100	64-136	0			
N-ethylperfluoro-1-octanesulfonamide	2.998	1.0	4	0	75	70-130	0			
N-Ethylperfluorooctanesulfonamidoace	3.856	1.0	4	0	96.4	61-139	0			
N-Ethylperfluorooctanesulfonamidoeth	3.43	1.0	4	0	85.7	70-130	0			
N-methylperfluoro-1-octanesulfonamid	4.408	1.0	4	0	110	70-130	0			
N-Methylperfluorooctanesulfonamidoa	3.817	1.0	4	0	95.4	63-144	0			
N-Methylperfluorooctanesulfonamidoe	3.25	1.0	4	0	81.2	68-141	0			
Hexafluoropropylene oxide dimer acid	4.19	1.0	4	0	105	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	4.721	1.0	3.768	0	125	70-130	0			
11Cl-Pf3OUdS	3.218	1.0	3.768	0	85.4	70-130	0			
9Cl-PF3ONS	3.478	1.0	3.728	0	93.3	70-130	0			
Surr: 13C2-FtS 4:2	*21.59*	0	*18.68*	0	*116*	*50-150*	0			
Surr: 13C2-FtS 6:2	*21.63*	0	*19*	0	*114*	*50-150*	0			
Surr: 13C2-FtS 8:2	*25.34*	0	*19.16*	0	*132*	*50-150*	0			
Surr: 13C2-PFDA	*24.51*	0	*20*	0	*123*	*50-150*	0			
Surr: 13C2-PFDoA	*30.91*	0	*20*	0	*155*	*50-150*	0			*S*
Surr: 13C2-PFHxA	*21.29*	0	*20*	0	*106*	*50-150*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFHxDA	*25.18*	0	*20*	0	*126*	*50-150*	0
Surr: 13C2-PFTeA	*26.94*	0	*20*	0	*135*	*50-150*	0
Surr: 13C2-PFUnA	*22.28*	0	*20*	0	*111*	*50-150*	0
Surr: 13C3-HFPO-DA	*24.41*	0	*20*	0	*122*	*50-150*	0
Surr: 13C3-PFBS	*21.57*	0	*18.6*	0	*116*	*50-150*	0
Surr: 13C4-PFBA	*22.35*	0	*20*	0	*112*	*50-150*	0
Surr: 13C4-PFHpA	*20.65*	0	*20*	0	*103*	*50-150*	0
Surr: 13C4-PFOA	*19.43*	0	*20*	0	*97.1*	*50-150*	0
Surr: 13C4-PFOS	*20.93*	0	*19.1*	0	*110*	*50-150*	0
Surr: 13C5-PFNA	*21.78*	0	*20*	0	*109*	*50-150*	0
Surr: 13C5-PFPeA	*23.27*	0	*20*	0	*116*	*50-150*	0
Surr: 13C8-FOSA	*24.73*	0	*20*	0	*124*	*50-150*	0
Surr: 18O2-PFHxS	*19.33*	0	*18.9*	0	*102*	*50-150*	0
Surr: d5-N-EtFOSA	*25.43*	0	*20*	0	*127*	*50-150*	0
Surr: d5-N-EtFOSAA	*23.92*	0	*20*	0	*120*	*50-150*	0
Surr: d9-N-EtFOSE	*24.45*	0	*20*	0	*122*	*50-150*	0
Surr: d3-N-MeFOSA	*21.51*	0	*20*	0	*108*	*50-150*	0
Surr: d3-N-MeFOSAA	*23.98*	0	*20*	0	*120*	*50-150*	0
Surr: d7-N-MeFOSE	*26.2*	0	*20*	0	*131*	*50-150*	0

MS Sample ID: **22011385-02A MS** Units: **µg/Kg** Analysis Date: **2/1/2022 12:11 PM**

Client ID: Run ID: **LCMS1_220131C** SeqNo: **8147020** Prep Date: **1/25/2022** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid 6:2 (FtS	233.7	10	3.811	281.1	-1240	64-140	0			SO

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

MS Sample ID: **22011385-02A MS** Units: **µg/Kg** Analysis Date: **2/1/2022 04:02 PM**
Client ID: Run ID: **LCMS1_220131C** SeqNo: **8147045** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid 4:2 (FtS	4.564	1.0	3.755	0.5218	108	62-145	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	5.134	1.0	3.851	0.3471	124	65-137	0			
Fluorotelomer Sulphonic Acid 10:2 (Ft	2.527	1.0	3.875	0	65.2	40-160	0			
Perfluorobutanesulfonic Acid (PFBS)	3.415	1.0	3.554	0	96.1	72-128	0			
Perfluorobutanoic Acid (PFBA)	5.52	1.0	4.02	2.151	83.8	71-135	0			
Perfluorodecanesulfonic Acid (PFDS)	3.222	1.0	3.875	0	83.1	59-134	0			
Perfluorodecanoic Acid (PFDA)	3.711	1.0	4.02	0	92.3	69-133	0			
Perfluorododecanesulfonic Acid (PFDc	3.434	1.0	3.891	0	88.2	69-134	0			
Perfluorododecanoic Acid (PFDoA)	3.861	1.0	4.02	0	96	69-135	0			
Perfluoroheptanesulfonic Acid (PFHpS	3.934	1.0	3.827	0	103	70-132	0			
Perfluoroheptanoic Acid (PFHpA)	6.339	1.0	4.02	2.708	90.3	71-131	0			
Perfluorohexadecanoic Acid (PFHxDA	3.504	1.0	4.02	0	87.2	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	3.305	1.0	3.658	0.05087	88.9	67-130	0			
Perfluorohexanoic Acid (PFHxA)	19.71	1.0	4.02	19.1	15.2	70-132	0			SO
Perfluorononanesulfonic Acid (PFNS)	3.241	1.0	3.859	0	84	69-125	0			
Perfluorononanoic Acid (PFNA)	3.7	1.0	4.02	0.04841	90.8	72-129	0			
Perfluorooctadecanoic Acid (PFODA)	3.897	1.0	4.02	0	96.9	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	3.946	1.0	4.02	0	98.2	67-137	0			
Perfluorooctanesulfonic Acid (PFOS)	4.089	1.0	3.731	0.3733	99.6	68-136	0			
Perfluorooctanoic Acid (PFOA)	3.808	1.0	4.02	0.1046	92.1	69-133	0			
Perfluoropentanesulfonic Acid (PFPeS	3.67	1.0	3.771	0	97.3	73-123	0			
Perfluoropentanoic Acid (PFPeA)	11.14	1.0	4.02	8.165	74.1	69-132	0			
Perfluorotetradecanoic Acid (PFTeA)	3.458	1.0	4.02	0	86	69-133	0			
Perfluorotridecanoic Acid (PFTriA)	3.563	1.0	4.02	0	88.6	66-139	0			
Perfluoroundecanoic Acid (PFUnA)	3.611	1.0	4.02	0	89.8	64-136	0			
N-ethylperfluoro-1-octanesulfonamide	3.825	1.0	4.02	0	95.1	70-130	0			
N-Ethylperfluorooctanesulfonamidoace	4.796	1.0	4.02	0	119	61-139	0			
N-Ethylperfluorooctanesulfonamidoeth	3.451	1.0	4.02	0.05087	84.6	70-130	0			
N-methylperfluoro-1-octanesulfonamid	3.451	1.0	4.02	0	85.8	70-130	0			
N-Methylperfluorooctanesulfonamidoa	4.128	1.0	4.02	0.05744	101	63-144	0			
N-Methylperfluorooctanesulfonamidoe	4.369	1.0	4.02	0.1272	106	68-141	0			
Hexafluoropropylene oxide dimer acid	4.378	1.0	4.02	0	109	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	3.789	1.0	3.787	0	100	70-130	0			
11Cl-Pf3OUdS	3.057	1.0	3.787	0	80.7	70-130	0			
9Cl-PF3ONS	3.246	1.0	3.747	0	86.6	70-130	0			
Surr: 13C2-FtS 4:2	*16.58*	0	*18.77*	0	*88.3*	*50-150*	0			
Surr: 13C2-FtS 6:2	*41.49*	0	*19.1*	0	*217*	*50-150*	0			*S*
Surr: 13C2-FtS 8:2	*29.48*	0	*19.26*	0	*153*	*50-150*	0			*S*
Surr: 13C2-PFDA	*22.23*	0	*20.1*	0	*111*	*50-150*	0			
Surr: 13C2-PFDoA	*24.23*	0	*20.1*	0	*121*	*50-150*	0			
Surr: 13C2-PFHxA	*18.84*	0	*20.1*	0	*93.7*	*50-150*	0			
Surr: 13C2-PFHxDA	*17.69*	0	*20.1*	0	*88*	*50-150*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*20.35*	0	*20.1*	0	*101*	*50-150*	0
Surr: 13C2-PFUnA	*20.96*	0	*20.1*	0	*104*	*50-150*	0
Surr: 13C3-HFPO-DA	*20.13*	0	*20.1*	0	*100*	*50-150*	0
Surr: 13C3-PFBS	*16.27*	0	*18.69*	0	*87*	*50-150*	0
Surr: 13C4-PFBA	*19.75*	0	*20.1*	0	*98.3*	*50-150*	0
Surr: 13C4-PFHpA	*17.19*	0	*20.1*	0	*85.5*	*50-150*	0
Surr: 13C4-PFOA	*17.07*	0	*20.1*	0	*84.9*	*50-150*	0
Surr: 13C4-PFOS	*19.06*	0	*19.2*	0	*99.3*	*50-150*	0
Surr: 13C5-PFNA	*21.33*	0	*20.1*	0	*106*	*50-150*	0
Surr: 13C5-PFPeA	*18.35*	0	*20.1*	0	*91.3*	*50-150*	0
Surr: 13C8-FOSA	*19.86*	0	*20.1*	0	*98.8*	*50-150*	0
Surr: 18O2-PFHxS	*15.78*	0	*19*	0	*83.1*	*50-150*	0
Surr: d5-N-EtFOSA	*15.37*	0	*20.1*	0	*76.5*	*50-150*	0
Surr: d5-N-EtFOSAA	*11.15*	0	*20.1*	0	*55.5*	*50-150*	0
Surr: d9-N-EtFOSE	*15.61*	0	*20.1*	0	*77.7*	*50-150*	0
Surr: d3-N-MeFOSA	*16.34*	0	*20.1*	0	*81.3*	*50-150*	0
Surr: d3-N-MeFOSAA	*10.35*	0	*20.1*	0	*51.5*	*50-150*	0
Surr: d7-N-MeFOSE	*13.97*	0	*20.1*	0	*69.5*	*50-150*	0

DUP Sample ID: **22011385-05A DUP** Units: **µg/Kg** Analysis Date: **2/1/2022 11:39 AM**

Client ID: Run ID: **LCMS1_220131C** SeqNo: **8147017** Prep Date: **1/25/2022** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid 6:2 (FtS	561	10	0	0	0	0-0	518.2	7.93	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

DUP Sample ID: **22011385-05A DUP** Units: **µg/Kg** Analysis Date: **2/1/2022 03:46 PM**

Client ID: Run ID: **LCMS1_220131C** SeqNo: **8147043** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fluorotelomer Sulphonic Acid 4:2 (FtS	2.102	1.0	0	0	0	0-0	2.01	4.46	30	
Fluorotelomer Sulphonic Acid 8:2 (FtS	ND	1.0	0	0	0	0-0	0.5072	0	30	
Fluorotelomer Sulphonic Acid 10:2 (Ft	0.4728	1.0	0	0	0	0-0	0.3128	0	30	J
Perfluorobutanesulfonic Acid (PFBS)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorobutanoic Acid (PFBA)	4.013	1.0	0	0	0	0-0	3.872	3.58	30	
Perfluorodecanesulfonic Acid (PFDS)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorodecanoic Acid (PFDA)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorododecanesulfonic Acid (PFDc	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorododecanoic Acid (PFDoA)	ND	1.0	0	0	0	0-0	0.0472	0	30	
Perfluoroheptanesulfonic Acid (PFHpS	ND	1.0	0	0	0	0-0	0	0	30	
Perfluoroheptanoic Acid (PFHpA)	0.6119	1.0	0	0	0	0-0	0.5976	0	30	J
Perfluorohexadecanoic Acid (PFHxDA	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorohexanesulfonic Acid (PFHxS)	ND	1.0	0	0	0	0-0	0.0632	0	30	
Perfluorohexanoic Acid (PFHxA)	50.41	1.0	0	0	0	0-0	47.04	6.93	30	
Perfluorononanesulfonic Acid (PFNS)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorononanoic Acid (PFNA)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorooctadecanoic Acid (PFODA)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonamide (PFOSA)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorooctanesulfonic Acid (PFOS)	ND	1.0	0	0	0	0-0	0.1012	0	30	
Perfluorooctanoic Acid (PFOA)	0.1705	1.0	0	0	0	0-0	0.1172	0	30	J
Perfluoropentanesulfonic Acid (PFPeS	ND	1.0	0	0	0	0-0	0	0	30	
Perfluoropentanoic Acid (PFPeA)	3.617	1.0	0	0	0	0-0	3.602	0.401	30	
Perfluorotetradecanoic Acid (PFTeA)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluorotridecanoic Acid (PFTriA)	ND	1.0	0	0	0	0-0	0	0	30	
Perfluoroundecanoic Acid (PFUnA)	ND	1.0	0	0	0	0-0	0	0	30	
N-ethylperfluoro-1-octanesulfonamide	ND	1.0	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfonamidoace	ND	1.0	0	0	0	0-0	0	0	30	
N-Ethylperfluorooctanesulfonamidoeth	ND	1.0	0	0	0	0-0	0.046	0	30	
N-methylperfluoro-1-octanesulfonamid	ND	1.0	0	0	0	0-0	0	0	30	
N-Methylperfluorooctanesulfonamidoa	ND	1.0	0	0	0	0-0	0.0892	0	30	
N-Methylperfluorooctanesulfonamidoe	ND	1.0	0	0	0	0-0	0.108	0	30	
Hexafluoropropylene oxide dimer acid	ND	1.0	0	0	0	0-0	0	0	30	
4,8-Dioxa-3H-perfluorononanoic Acid (	ND	1.0	0	0	0	0-0	0	0	30	
11Cl-Pf3OUdS	ND	1.0	0	0	0	0-0	0	0	30	
9Cl-PF3ONS	ND	1.0	0	0	0	0-0	0	0	30	
Surr: 13C2-FtS 4:2	*18.74*	0	*18.77*	0	*99.8*	*50-150*	20.4	*8.52*	*30*	
Surr: 13C2-FtS 6:2	*74.47*	0	*19.1*	0	*390*	*50-150*	71.12	*4.61*	*30*	*S*
Surr: 13C2-FtS 8:2	*15.57*	0	*19.26*	0	*80.8*	*50-150*	17.4	*11.1*	*30*	
Surr: 13C2-PFDA	*7.863*	0	*20.1*	0	*39.1*	*50-150*	10.57	*29.4*	*30*	*S*
Surr: 13C2-PFDoA	*13.34*	0	*20.1*	0	*66.4*	*50-150*	15.46	*14.7*	*30*	
Surr: 13C2-PFHxA	*20.22*	0	*20.1*	0	*101*	*50-150*	21.64	*6.8*	*30*	
Surr: 13C2-PFHxDA	*20.22*	0	*20.1*	0	*101*	*50-150*	20.51	*1.4*	*30*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **190849** Instrument ID **LCMS1** Method: **E537 Mod**

Surr: 13C2-PFTeA	*20.06*	0	*20.1*	0	*99.8*	*50-150*	22.12	*9.77*	*30*
Surr: 13C2-PFUnA	*23.2*	0	*20.1*	0	*115*	*50-150*	24.67	*6.13*	*30*
Surr: 13C3-HFPO-DA	*19.67*	0	*20.1*	0	*97.9*	*50-150*	20.6	*4.64*	*30*
Surr: 13C3-PFBS	*16.96*	0	*18.69*	0	*90.7*	*50-150*	17.47	*3.02*	*30*
Surr: 13C4-PFBA	*20.12*	0	*20.1*	0	*100*	*50-150*	21.08	*4.65*	*30*
Surr: 13C4-PFHpA	*19.73*	0	*20.1*	0	*98.2*	*50-150*	20.01	*1.38*	*30*
Surr: 13C4-PFOA	*15.13*	0	*20.1*	0	*75.3*	*50-150*	14.25	*6*	*30*
Surr: 13C4-PFOS	*19.06*	0	*19.2*	0	*99.3*	*50-150*	19.5	*2.29*	*30*
Surr: 13C5-PFNA	*22.48*	0	*20.1*	0	*112*	*50-150*	23.17	*3.02*	*30*
Surr: 13C5-PFPeA	*20.37*	0	*20.1*	0	*101*	*50-150*	21.09	*3.51*	*30*
Surr: 13C8-FOSA	*20.24*	0	*20.1*	0	*101*	*50-150*	21.2	*4.6*	*30*
Surr: 18O2-PFHxS	*17.43*	0	*19*	0	*91.8*	*50-150*	17.93	*2.8*	*30*
Surr: d5-N-EtFOSA	*15.39*	0	*20.1*	0	*76.6*	*50-150*	17.47	*12.6*	*30*
Surr: d5-N-EtFOSAA	*12.62*	0	*20.1*	0	*62.8*	*50-150*	14.71	*15.3*	*30*
Surr: d9-N-EtFOSE	*15.28*	0	*20.1*	0	*76*	*50-150*	13.86	*9.74*	*30*
Surr: d3-N-MeFOSA	*15.99*	0	*20.1*	0	*79.5*	*50-150*	16.28	*1.84*	*30*
Surr: d3-N-MeFOSAA	*11.81*	0	*20.1*	0	*58.8*	*50-150*	13.27	*11.7*	*30*
Surr: d7-N-MeFOSE	*15.53*	0	*20.1*	0	*77.3*	*50-150*	18.19	*15.8*	*30*

The following samples were analyzed in this batch: 22011311-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

MBLK1	Sample ID: **MBLK1-191561-191561**				Units: **ng/Kg**		Analysis Date: **2/10/2022 08:48 PM**			
Client ID:		Run ID: **LCMS1_220210C**			SeqNo: **8168290**		Prep Date: **2/10/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	ND	120	0	0	0		0			
Perfluoropentanoic Acid (PFPeA)	ND	120	0	0	0		0			
Perfluorohexanoic Acid (PFHxA)	ND	120	0	0	0		0			
Perfluoroheptanoic Acid (PFHpA)	ND	120	0	0	0		0			
Perfluorooctanoic Acid (PFOA)	ND	25	0	0	0		0			
Perfluorononanoic Acid (PFNA)	ND	25	0	0	0		0			
Perfluorodecanoic Acid (PFDA)	ND	120	0	0	0		0			
Perfluoroundecanoic Acid (PFUnA)	ND	120	0	0	0		0			
Perfluorododecanoic Acid (PFDoA)	ND	120	0	0	0		0			
Perfluorotridecanoic Acid (PFTriA)	ND	120	0	0	0		0			
Perfluorotetradecanoic Acid (PFTeA)	ND	120	0	0	0		0			
Perfluorobutanesulfonic Acid (PFBS)	ND	25	0	0	0		0			
Perfluoropentanesulfonic Acid (PFPeS	ND	25	0	0	0		0			
Perfluorohexanesulfonic Acid (PFHxS)	ND	120	0	0	0		0			
Perfluoroheptanesulfonic Acid (PFHpS	ND	120	0	0	0		0			
Perfluorooctanesulfonic Acid (PFOS)	ND	25	0	0	0		0			
Perfluorononanesulfonic Acid (PFNS)	ND	120	0	0	0		0			
Perfluorodecanesulfonic Acid (PFDS)	ND	25	0	0	0		0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	ND	120	0	0	0		0			
Perfluorooctanesulfonamide (PFOSA)	ND	25	0	0	0		0			
N-Ethylperfluorooctanesulfonamidoace	ND	120	0	0	0		0			
N-Methylperfluorooctanesulfonamidoa	ND	120	0	0	0		0			
11Cl-Pf3OUdS	ND	25	0	0	0		0			
4,8-Dioxa-3H-perfluorononanoic Acid (	ND	25	0	0	0		0			
9Cl-PF3ONS	ND	25	0	0	0		0			
Hexafluoropropylene oxide dimer acid	ND	120	0	0	0		0			
Surr: 13C4-PFBA	*388*	0	*400*	0	*97*	*50-130*	0			
Surr: 13C5-PFPeA	*387.6*	0	*400*	0	*96.9*	*50-130*	0			
Surr: 13C2-PFHxA	*406*	0	*400*	0	*101*	*50-130*	0			
Surr: 13C4-PFHpA	*417.1*	0	*400*	0	*104*	*50-130*	0			
Surr: 13C4-PFOA	*326.6*	0	*400*	0	*81.6*	*70-130*	0			
Surr: 13C5-PFNA	*416.8*	0	*400*	0	*104*	*70-130*	0			
Surr: 13C2-PFDA	*452.3*	0	*400*	0	*113*	*70-130*	0			
Surr: 13C2-PFUnA	*376.6*	0	*400*	0	*94.1*	*70-130*	0			
Surr: 13C2-PFDoA	*423*	0	*400*	0	*106*	*70-130*	0			
Surr: 13C2-PFTeA	*440.6*	0	*400*	0	*110*	*50-130*	0			
Surr: 13C3-PFBS	*411.5*	0	*400*	0	*103*	*50-130*	0			
Surr: 18O2-PFHxS	*346.6*	0	*378*	0	*91.7*	*70-130*	0			
Surr: 13C4-PFOS	*386.5*	0	*383*	0	*101*	*70-130*	0			
Surr: 13C2-FtS 4:2	*278.6*	0	*373*	0	*74.7*	*50-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*295.9*	0	*380*	0	*77.9*	*50-130*	0
Surr: 13C2-FtS 8:2	*319*	0	*383*	0	*83.3*	*50-130*	0
Surr: 13C8-FOSA	*384.7*	0	*400*	0	*96.2*	*50-130*	0
Surr: d3-N-MeFOSAA	*392.9*	0	*400*	0	*98.2*	*50-130*	0
Surr: d5-N-EtFOSAA	*468.2*	0	*400*	0	*117*	*50-130*	0
Surr: 13C3-HFPO-DA	*441.5*	0	*400*	0	*110*	*50-130*	0

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

MBLK2 Sample ID: **MBLK2-191561-191561** Units: **ng/Kg** Analysis Date: **2/10/2022 09:04 PM**
Client ID: Run ID: **LCMS1_220210C** SeqNo: **8168292** Prep Date: **2/10/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	ND	120	0	0	0		0			
Perfluoropentanoic Acid (PFPeA)	ND	120	0	0	0		0			
Perfluorohexanoic Acid (PFHxA)	ND	120	0	0	0		0			
Perfluoroheptanoic Acid (PFHpA)	ND	120	0	0	0		0			
Perfluorooctanoic Acid (PFOA)	ND	25	0	0	0		0			
Perfluorononanoic Acid (PFNA)	ND	25	0	0	0		0			
Perfluorodecanoic Acid (PFDA)	ND	120	0	0	0		0			
Perfluoroundecanoic Acid (PFUnA)	ND	120	0	0	0		0			
Perfluorododecanoic Acid (PFDoA)	ND	120	0	0	0		0			
Perfluorotridecanoic Acid (PFTriA)	ND	120	0	0	0		0			
Perfluorotetradecanoic Acid (PFTeA)	ND	120	0	0	0		0			
Perfluorobutanesulfonic Acid (PFBS)	ND	25	0	0	0		0			
Perfluoropentanesulfonic Acid (PFPeS	ND	25	0	0	0		0			
Perfluorohexanesulfonic Acid (PFHxS)	ND	120	0	0	0		0			
Perfluoroheptanesulfonic Acid (PFHpS	ND	120	0	0	0		0			
Perfluorooctanesulfonic Acid (PFOS)	ND	25	0	0	0		0			
Perfluorononanesulfonic Acid (PFNS)	ND	120	0	0	0		0			
Perfluorodecanesulfonic Acid (PFDS)	ND	25	0	0	0		0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	ND	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	ND	120	0	0	0		0			
Perfluorooctanesulfonamide (PFOSA)	ND	25	0	0	0		0			
N-Ethylperfluorooctanesulfonamidoace	ND	120	0	0	0		0			
N-Methylperfluorooctanesulfonamidoa	ND	120	0	0	0		0			
11Cl-Pf3OUdS	ND	25	0	0	0		0			
4,8-Dioxa-3H-perfluorononanoic Acid (	ND	25	0	0	0		0			
9Cl-PF3ONS	ND	25	0	0	0		0			
Hexafluoropropylene oxide dimer acid	ND	120	0	0	0		0			
Surr: 13C4-PFBA	*349.1*	0	*400*	0	*87.3*	*50-130*	0			
Surr: 13C5-PFPeA	*353.5*	0	*400*	0	*88.4*	*50-130*	0			
Surr: 13C2-PFHxA	*337.6*	0	*400*	0	*84.4*	*50-130*	0			
Surr: 13C4-PFHpA	*323.6*	0	*400*	0	*80.9*	*50-130*	0			
Surr: 13C4-PFOA	*341.2*	0	*400*	0	*85.3*	*70-130*	0			
Surr: 13C5-PFNA	*368.6*	0	*400*	0	*92.1*	*70-130*	0			
Surr: 13C2-PFDA	*403.1*	0	*400*	0	*101*	*70-130*	0			
Surr: 13C2-PFUnA	*407.4*	0	*400*	0	*102*	*70-130*	0			
Surr: 13C2-PFDoA	*397.5*	0	*400*	0	*99.4*	*70-130*	0			
Surr: 13C2-PFTeA	*390*	0	*400*	0	*97.5*	*50-130*	0			
Surr: 13C3-PFBS	*381.4*	0	*400*	0	*95.4*	*50-130*	0			
Surr: 18O2-PFHxS	*363.7*	0	*378*	0	*96.2*	*70-130*	0			
Surr: 13C4-PFOS	*365.5*	0	*383*	0	*95.4*	*70-130*	0			
Surr: 13C2-FtS 4:2	*273.2*	0	*373*	0	*73.2*	*50-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*212.1*	0	*380*	0	*55.8*	*50-130*	0
Surr: 13C2-FtS 8:2	*195.4*	0	*383*	0	*51*	*50-130*	0
Surr: 13C8-FOSA	*380.9*	0	*400*	0	*95.2*	*50-130*	0
Surr: d3-N-MeFOSAA	*391.2*	0	*400*	0	*97.8*	*50-130*	0
Surr: d5-N-EtFOSAA	*391.8*	0	*400*	0	*98*	*50-130*	0
Surr: 13C3-HFPO-DA	*355.5*	0	*400*	0	*88.9*	*50-130*	0

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

LCSD2	Sample ID: **LCSD2-191561-191561**				Units: **ng/Kg**		Analysis Date: **2/10/2022 09:29 PM**			
Client ID:		Run ID: **LCMS1_220210C**			SeqNo: **8168295**		Prep Date: **2/10/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	493.9	120	500	0	98.8	50-130	0			
Perfluoropentanoic Acid (PFPeA)	474.2	120	500	0	94.8	70-130	0			
Perfluorohexanoic Acid (PFHxA)	444.7	120	500	0	88.9	50-130	0			
Perfluoroheptanoic Acid (PFHpA)	441.7	120	500	0	88.3	50-130	0			
Perfluorooctanoic Acid (PFOA)	508	25	500	0	102	70-130	0			
Perfluorononanoic Acid (PFNA)	511.3	25	500	0	102	70-130	0			
Perfluorodecanoic Acid (PFDA)	505.6	120	500	0	101	70-130	0			
Perfluoroundecanoic Acid (PFUnA)	516.2	120	500	0	103	70-130	0			
Perfluorododecanoic Acid (PFDoA)	522.1	120	500	0	104	70-130	0			
Perfluorotridecanoic Acid (PFTriA)	545.4	120	500	0	109	70-130	0			
Perfluorotetradecanoic Acid (PFTeA)	709.8	120	500	0	142	70-130	0			S
Perfluorobutanesulfonic Acid (PFBS)	402.1	25	442	0	91	70-130	0			
Perfluoropentanesulfonic Acid (PFPeS	384.4	25	469	0	82	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	437.5	120	455	0	96.2	70-130	0			
Perfluoroheptanesulfonic Acid (PFHpS	494.5	120	476	0	104	70-130	0			
Perfluorooctanesulfonic Acid (PFOS)	440	25	464	0	94.8	70-130	0			
Perfluorononanesulfonic Acid (PFNS)	446.7	120	480	0	93.1	70-130	0			
Perfluorodecanesulfonic Acid (PFDS)	504.2	25	482	0	105	70-130	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	401.2	120	467	0	85.9	70-130	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	463.2	120	474	0	97.7	70-130	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	579.2	120	479	0	121	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	489.8	25	500	0	98	70-130	0			
N-Ethylperfluorooctanesulfonamidoace	542.9	120	500	0	109	70-130	0			
N-Methylperfluorooctanesulfonamidoa	526.7	120	500	0	105	70-130	0			
11Cl-Pf3OUdS	496.6	25	471	0	105	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	471.3	25	471	0	100	70-130	0			
9Cl-PF3ONS	430.5	25	466	0	92.4	70-130	0			
Hexafluoropropylene oxide dimer acid	471.1	120	500	0	94.2	50-130	0			
Surr: 13C4-PFBA	*385.1*	0	*400*	0	*96.3*	*50-130*	0			
Surr: 13C5-PFPeA	*404.8*	0	*400*	0	*101*	*50-130*	0			
Surr: 13C2-PFHxA	*381.8*	0	*400*	0	*95.4*	*50-130*	0			
Surr: 13C4-PFHpA	*360.4*	0	*400*	0	*90.1*	*50-130*	0			
Surr: 13C4-PFOA	*432*	0	*400*	0	*108*	*70-130*	0			
Surr: 13C5-PFNA	*420.1*	0	*400*	0	*105*	*70-130*	0			
Surr: 13C2-PFDA	*439.8*	0	*400*	0	*110*	*70-130*	0			
Surr: 13C2-PFUnA	*402.3*	0	*400*	0	*101*	*70-130*	0			
Surr: 13C2-PFDoA	*446.9*	0	*400*	0	*112*	*70-130*	0			
Surr: 13C2-PFTeA	*425.1*	0	*400*	0	*106*	*50-130*	0			
Surr: 13C3-PFBS	*404.5*	0	*400*	0	*101*	*50-130*	0			
Surr: 18O2-PFHxS	*322.3*	0	*378*	0	*85.3*	*70-130*	0			
Surr: 13C4-PFOS	*354.1*	0	*383*	0	*92.5*	*70-130*	0			
Surr: 13C2-FtS 4:2	*314.8*	0	*373*	0	*84.4*	*50-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*343.7*	0	*380*	0	*90.4*	*50-130*	0
Surr: 13C2-FtS 8:2	*366*	0	*383*	0	*95.6*	*50-130*	0
Surr: 13C8-FOSA	*412.5*	0	*400*	0	*103*	*50-130*	0
Surr: d3-N-MeFOSAA	*411.3*	0	*400*	0	*103*	*50-130*	0
Surr: d5-N-EtFOSAA	*373.9*	0	*400*	0	*93.5*	*50-130*	0
Surr: 13C3-HFPO-DA	*375.3*	0	*400*	0	*93.8*	*50-130*	0

LCS1 Sample ID: **LCS1-191561-191561** Units: **ng/Kg** Analysis Date: **2/10/2022 08:56 PM**

Client ID: Run ID: **LCMS1_220210C** SeqNo: **8168291** Prep Date: **2/10/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanoic Acid (PFOA)	23.27	25	25	0	93.1	35-150	0			J
Perfluorononanoic Acid (PFNA)	23.8	25	25	0	95.2	35-150	0			J
Perfluorobutanesulfonic Acid (PFBS)	26.68	25	22	0	121	35-150	0			
Perfluoropentanesulfonic Acid (PFPeS	16.44	25	23.5	0	70	35-150	0			J
Perfluorooctanesulfonic Acid (PFOS)	19.9	25	23	0	86.5	35-150	0			J
Perfluorodecanesulfonic Acid (PFDS)	36.16	25	24	0	151	35-150	0			S
Perfluorooctanesulfonamide (PFOSA)	21.88	25	25	0	87.5	35-150	0			J
11Cl-Pf3OUdS	26.46	25	23.5	0	113	35-150	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	21.66	25	23.5	0	92.2	35-150	0			J
9Cl-PF3ONS	24.75	25	23	0	108	35-150	0			J
Surr: 13C4-PFBA	*359.4*	0	*400*	0	*89.9*	*50-130*	0			
Surr: 13C5-PFPeA	*376.2*	0	*400*	0	*94.1*	*50-130*	0			
Surr: 13C2-PFHxA	*403.8*	0	*400*	0	*101*	*50-130*	0			
Surr: 13C4-PFHpA	*400*	0	*400*	0	*100*	*50-130*	0			
Surr: 13C4-PFOA	*369.3*	0	*400*	0	*92.3*	*70-130*	0			
Surr: 13C5-PFNA	*393.7*	0	*400*	0	*98.4*	*70-130*	0			
Surr: 13C2-PFDA	*410.6*	0	*400*	0	*103*	*70-130*	0			
Surr: 13C2-PFUnA	*390.2*	0	*400*	0	*97.5*	*70-130*	0			
Surr: 13C2-PFDoA	*429.3*	0	*400*	0	*107*	*70-130*	0			
Surr: 13C2-PFTeA	*437.2*	0	*400*	0	*109*	*50-130*	0			
Surr: 13C3-PFBS	*421.1*	0	*400*	0	*105*	*50-130*	0			
Surr: 18O2-PFHxS	*340.3*	0	*378*	0	*90*	*70-130*	0			
Surr: 13C4-PFOS	*384.8*	0	*383*	0	*100*	*70-130*	0			
Surr: 13C2-FtS 4:2	*259*	0	*373*	0	*69.4*	*50-130*	0			
Surr: 13C2-FtS 6:2	*311.1*	0	*380*	0	*81.9*	*50-130*	0			
Surr: 13C2-FtS 8:2	*316.1*	0	*383*	0	*82.5*	*50-130*	0			
Surr: 13C8-FOSA	*391.7*	0	*400*	0	*97.9*	*50-130*	0			
Surr: d3-N-MeFOSAA	*375.3*	0	*400*	0	*93.8*	*50-130*	0			
Surr: d5-N-EtFOSAA	*406.1*	0	*400*	0	*102*	*50-130*	0			
Surr: 13C3-HFPO-DA	*368.4*	0	*400*	0	*92.1*	*50-130*	0			

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

LCS2	Sample ID: **LCS2-191561-191561**				Units: **ng/Kg**		Analysis Date: **2/10/2022 09:21 PM**			
Client ID:		Run ID: **LCMS1_220210C**			SeqNo: **8168294**		Prep Date: **2/10/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	488.5	120	500	0	97.7	50-130	0			
Perfluoropentanoic Acid (PFPeA)	474	120	500	0	94.8	70-130	0			
Perfluorohexanoic Acid (PFHxA)	453.3	120	500	0	90.7	50-130	0			
Perfluoroheptanoic Acid (PFHpA)	468.2	120	500	0	93.6	50-130	0			
Perfluorooctanoic Acid (PFOA)	494.7	25	500	0	98.9	70-130	0			
Perfluorononanoic Acid (PFNA)	467.7	25	500	0	93.5	70-130	0			
Perfluorodecanoic Acid (PFDA)	469.4	120	500	0	93.9	70-130	0			
Perfluoroundecanoic Acid (PFUnA)	513.5	120	500	0	103	70-130	0			
Perfluorododecanoic Acid (PFDoA)	486.5	120	500	0	97.3	70-130	0			
Perfluorotridecanoic Acid (PFTriA)	522.3	120	500	0	104	70-130	0			
Perfluorotetradecanoic Acid (PFTeA)	622.5	120	500	0	125	70-130	0			
Perfluorobutanesulfonic Acid (PFBS)	425.7	25	442	0	96.3	70-130	0			
Perfluoropentanesulfonic Acid (PFPeS	490.1	25	469	0	104	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	528.4	120	455	0	116	70-130	0			
Perfluoroheptanesulfonic Acid (PFHpS	444.5	120	476	0	93.4	70-130	0			
Perfluorooctanesulfonic Acid (PFOS)	457.7	25	464	0	98.6	70-130	0			
Perfluorononanesulfonic Acid (PFNS)	490.3	120	480	0	102	70-130	0			
Perfluorodecanesulfonic Acid (PFDS)	475.5	25	482	0	98.6	70-130	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	354.9	120	467	0	76	70-130	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	459.7	120	474	0	97	70-130	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	581.8	120	479	0	121	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	446.6	25	500	0	89.3	70-130	0			
N-Ethylperfluorooctanesulfonamidoace	495.6	120	500	0	99.1	70-130	0			
N-Methylperfluorooctanesulfonamidoa	494.7	120	500	0	98.9	70-130	0			
11Cl-Pf3OUdS	486.8	25	471	0	103	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	448.2	25	471	0	95.2	70-130	0			
9Cl-PF3ONS	453.9	25	466	0	97.4	70-130	0			
Hexafluoropropylene oxide dimer acid	425.1	120	500	0	85	50-130	0			
Surr: 13C4-PFBA	*352.7*	0	*400*	0	*88.2*	*50-130*	0			
Surr: 13C5-PFPeA	*383.1*	0	*400*	0	*95.8*	*50-130*	0			
Surr: 13C2-PFHxA	*370.7*	0	*400*	0	*92.7*	*50-130*	0			
Surr: 13C4-PFHpA	*388.4*	0	*400*	0	*97.1*	*50-130*	0			
Surr: 13C4-PFOA	*388.4*	0	*400*	0	*97.1*	*70-130*	0			
Surr: 13C5-PFNA	*398.8*	0	*400*	0	*99.7*	*70-130*	0			
Surr: 13C2-PFDA	*420.9*	0	*400*	0	*105*	*70-130*	0			
Surr: 13C2-PFUnA	*409.6*	0	*400*	0	*102*	*70-130*	0			
Surr: 13C2-PFDoA	*432.9*	0	*400*	0	*108*	*70-130*	0			
Surr: 13C2-PFTeA	*358.5*	0	*400*	0	*89.6*	*50-130*	0			
Surr: 13C3-PFBS	*396.7*	0	*400*	0	*99.2*	*50-130*	0			
Surr: 18O2-PFHxS	*356.2*	0	*378*	0	*94.2*	*70-130*	0			
Surr: 13C4-PFOS	*378.5*	0	*383*	0	*98.8*	*70-130*	0			
Surr: 13C2-FtS 4:2	*266.7*	0	*373*	0	*71.5*	*50-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*256.8*	0	*380*	0	*67.6*	*50-130*	0
Surr: 13C2-FtS 8:2	*320.9*	0	*383*	0	*83.8*	*50-130*	0
Surr: 13C8-FOSA	*383.6*	0	*400*	0	*95.9*	*50-130*	0
Surr: d3-N-MeFOSAA	*426.8*	0	*400*	0	*107*	*50-130*	0
Surr: d5-N-EtFOSAA	*461.4*	0	*400*	0	*115*	*50-130*	0
Surr: 13C3-HFPO-DA	*384.5*	0	*400*	0	*96.1*	*50-130*	0

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

LCS3	Sample ID: **LCS3-191561-191561**				Units: **ng/Kg**		Analysis Date: **2/10/2022 09:12 PM**			
Client ID:		Run ID: **LCMS1_220210C**			SeqNo: **8168293**		Prep Date: **2/10/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	146.6	120	125	0	117	35-150	0			
Perfluoropentanoic Acid (PFPeA)	122.6	120	125	0	98.1	35-150	0			
Perfluorohexanoic Acid (PFHxA)	118.3	120	125	0	94.7	35-150	0			J
Perfluoroheptanoic Acid (PFHpA)	139.3	120	125	0	111	35-150	0			
Perfluorooctanoic Acid (PFOA)	117	25	125	0	93.6	35-150	0			
Perfluorononanoic Acid (PFNA)	112.5	25	125	0	90	35-150	0			
Perfluorodecanoic Acid (PFDA)	126.5	120	125	0	101	35-150	0			
Perfluoroundecanoic Acid (PFUnA)	128.1	120	125	0	103	35-150	0			
Perfluorododecanoic Acid (PFDoA)	126.5	120	125	0	101	35-150	0			
Perfluorotridecanoic Acid (PFTriA)	132.8	120	125	0	106	35-150	0			
Perfluorotetradecanoic Acid (PFTeA)	170.6	120	125	0	136	35-150	0			
Perfluorobutanesulfonic Acid (PFBS)	135.3	25	110	0	123	35-150	0			
Perfluoropentanesulfonic Acid (PFPeS	119.6	25	118	0	101	35-150	0			
Perfluorohexanesulfonic Acid (PFHxS)	92.83	120	115	0	80.7	35-150	0			J
Perfluoroheptanesulfonic Acid (PFHpS	126.7	120	120	0	106	35-150	0			
Perfluorooctanesulfonic Acid (PFOS)	147.9	25	115	0	129	35-150	0			
Perfluorononanesulfonic Acid (PFNS)	123.9	120	120	0	103	35-150	0			
Perfluorodecanesulfonic Acid (PFDS)	136.5	25	120	0	114	35-150	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	70.62	120	118	0	59.8	35-150	0			J
Fluorotelomer Sulphonic Acid 6:2 (FtS	153.8	120	118	0	130	35-150	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	107.2	120	120	0	89.4	35-150	0			J
Perfluorooctanesulfonamide (PFOSA)	135.7	25	125	0	109	35-150	0			
N-Ethylperfluorooctanesulfonamidoace	180.5	120	125	0	144	35-150	0			
N-Methylperfluorooctanesulfonamidoa	133.9	120	125	0	107	35-150	0			
11Cl-Pf3OUdS	135.5	25	118	0	115	35-150	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	124.2	25	118	0	105	35-150	0			
9Cl-PF3ONS	120	25	118	0	102	35-150	0			
Hexafluoropropylene oxide dimer acid	ND	120	125	0	0	35-150	0			S
Surr: 13C4-PFBA	*366.5*	0	*400*	0	*91.6*	*50-130*	0			
Surr: 13C5-PFPeA	*387.6*	0	*400*	0	*96.9*	*50-130*	0			
Surr: 13C2-PFHxA	*437.6*	0	*400*	0	*109*	*50-130*	0			
Surr: 13C4-PFHpA	*397.8*	0	*400*	0	*99.4*	*50-130*	0			
Surr: 13C4-PFOA	*386.3*	0	*400*	0	*96.6*	*70-130*	0			
Surr: 13C5-PFNA	*405.9*	0	*400*	0	*101*	*70-130*	0			
Surr: 13C2-PFDA	*418.3*	0	*400*	0	*105*	*70-130*	0			
Surr: 13C2-PFUnA	*408.9*	0	*400*	0	*102*	*70-130*	0			
Surr: 13C2-PFDoA	*404.5*	0	*400*	0	*101*	*70-130*	0			
Surr: 13C2-PFTeA	*370.8*	0	*400*	0	*92.7*	*50-130*	0			
Surr: 13C3-PFBS	*413.3*	0	*400*	0	*103*	*50-130*	0			
Surr: 18O2-PFHxS	*317.4*	0	*378*	0	*84*	*70-130*	0			
Surr: 13C4-PFOS	*413.7*	0	*383*	0	*108*	*70-130*	0			
Surr: 13C2-FtS 4:2	*267.7*	0	*373*	0	*71.8*	*50-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC BATCH REPORT

Batch ID: **191561** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*309.5*	0	*380*	0	*81.5*	*50-130*	0
Surr: 13C2-FtS 8:2	*328.8*	0	*383*	0	*85.8*	*50-130*	0
Surr: 13C8-FOSA	*396.6*	0	*400*	0	*99.2*	*50-130*	0
Surr: d3-N-MeFOSAA	*426.1*	0	*400*	0	*107*	*50-130*	0
Surr: d5-N-EtFOSAA	*395.2*	0	*400*	0	*98.8*	*50-130*	0
Surr: 13C3-HFPO-DA	*365.7*	0	*400*	0	*91.4*	*50-130*	0

The following samples were analyzed in this batch: 22011311-01D

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190736** Instrument ID **VMS8** Method: **SW8260C**

MBLK Sample ID: **MBLK-190736-190736** Units: **µg/Kg-dry** Analysis Date: **1/24/2022 11:02 PM**
Client ID: Run ID: **VMS8_220124B** SeqNo: **8129044** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Toluene	ND	30								
Surr: 1,2-Dichloroethane-d4	*954.5*	0	*1000*	0	*95.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1018*	0	*1000*	0	*102*	*70-130*	0			
Surr: Dibromofluoromethane	*990*	0	*1000*	0	*99*	*70-130*	0			
Surr: Toluene-d8	*967.5*	0	*1000*	0	*96.8*	*70-130*	0			

LCS Sample ID: **LCS-190736-190736** Units: **µg/Kg-dry** Analysis Date: **1/24/2022 10:07 PM**
Client ID: Run ID: **VMS8_220124B** SeqNo: **8129042** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Toluene	965	30	1000	0	96.5	70-125	0			
Surr: 1,2-Dichloroethane-d4	*974.5*	0	*1000*	0	*97.4*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*995.5*	0	*1000*	0	*99.6*	*70-130*	0			
Surr: Dibromofluoromethane	*1004*	0	*1000*	0	*100*	*70-130*	0			
Surr: Toluene-d8	*988.5*	0	*1000*	0	*98.8*	*70-130*	0			

MS Sample ID: **22011329-01A MS** Units: **µg/Kg-dry** Analysis Date: **1/25/2022 03:34 AM**
Client ID: Run ID: **VMS8_220124B** SeqNo: **8129059** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Toluene	1357	42	1410	0	96.3	70-125	0			H
Surr: 1,2-Dichloroethane-d4	*1324*	0	*1410*	0	*93.9*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1436*	0	*1410*	0	*102*	*70-130*	0			
Surr: Dibromofluoromethane	*1376*	0	*1410*	0	*97.6*	*70-130*	0			
Surr: Toluene-d8	*1366*	0	*1410*	0	*96.9*	*70-130*	0			

MSD Sample ID: **22011329-01A MSD** Units: **µg/Kg-dry** Analysis Date: **1/25/2022 03:52 AM**
Client ID: Run ID: **VMS8_220124B** SeqNo: **8129060** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Toluene	1398	42	1410	0	99.2	70-125	1357	2.92	30	H
Surr: 1,2-Dichloroethane-d4	*1364*	0	*1410*	0	*96.8*	*70-130*	1324	*2.99*	*30*	
Surr: 4-Bromofluorobenzene	*1390*	0	*1410*	0	*98.6*	*70-130*	1436	*3.29*	*30*	
Surr: Dibromofluoromethane	*1395*	0	*1410*	0	*99*	*70-130*	1376	*1.37*	*30*	
Surr: Toluene-d8	*1385*	0	*1410*	0	*98.2*	*70-130*	1366	*1.38*	*30*	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190722** Instrument ID **WETCHEM** Method: **A5210B-11**

MBLK Sample ID: **MBLK-190722-190722** Units: **mg/Kg** Analysis Date: **1/26/2022 11:25 AM**
Client ID: Run ID: **WETCHEM_220126B** SeqNo: **8131883** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	ND	20	0	0	0	0-0	0			

LCS Sample ID: **LCS-190722-190722** Units: **mg/Kg** Analysis Date: **1/26/2022 11:25 AM**
Client ID: Run ID: **WETCHEM_220126B** SeqNo: **8131884** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	1774	20	1980	0	89.6	85-115	0			

DUP Sample ID: **22011311-01A DUP** Units: **mg/Kg** Analysis Date: **1/26/2022 11:25 AM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **WETCHEM_220126B** SeqNo: **8131886** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Biochemical Oxygen Demand	7659	20	0	0	0		6947	9.74	20	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190732** Instrument ID **WETCHEM** Method: **A9222 D-06**

MBLK	Sample ID: **MBLK-190732-190732**				Units: **cfu/gram**			Analysis Date: **1/22/2022 10:36 AM**		
Client ID:	Run ID: **WETCHEM_220122C**				SeqNo: **8126036**		Prep Date: **1/21/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Fecal Coliform	ND	1.0								

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190743** Instrument ID **WETCHEM** Method: **SW9045D**

LCS Sample ID: **LCS-190743-190743** Units: **s.u.** Analysis Date: **1/24/2022 01:49 PM**
Client ID: Run ID: **WETCHEM_220124D** SeqNo: **8128358** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.01	0.10	4	0	100	90-110	0			

DUP Sample ID: **22011311-01A DUP** Units: **s.u.** Analysis Date: **1/24/2022 01:49 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **WETCHEM_220124D** SeqNo: **8128364** Prep Date: **1/21/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.44	0.10	0	0	0	0-0	7.45	0.134	20	
Temperature	20.2	0.10	0	0	0		20.5	1.47		

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190756** Instrument ID **LACHAT2** Method: **A4500-NH3 G-11**

MBLK Sample ID: **MBLK-190756-190756** Units: **mg/Kg** Analysis Date: **1/24/2022 10:40 AM**
Client ID: Run ID: **LACHAT2_220124A** SeqNo: **8126895** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Total Kjeldahl	ND	100								

LCS Sample ID: **LCS-190756-190756** Units: **mg/Kg** Analysis Date: **1/24/2022 10:42 AM**
Client ID: Run ID: **LACHAT2_220124A** SeqNo: **8126896** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Total Kjeldahl	343.4	100	320	0	107	84-114	0			

MS Sample ID: **22011328-01A MS** Units: **mg/Kg** Analysis Date: **1/24/2022 10:45 AM**
Client ID: Run ID: **LACHAT2_220124A** SeqNo: **8126899** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Total Kjeldahl	531.7	89	285.7	352	62.9	84-114	0			S

MSD Sample ID: **22011328-01A MSD** Units: **mg/Kg** Analysis Date: **1/24/2022 10:46 AM**
Client ID: Run ID: **LACHAT2_220124A** SeqNo: **8126900** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Total Kjeldahl	464.9	89	285.7	352	39.5	84-114	531.7	13.4	20	S

LCS2 Sample ID: **LCS2-190756-190756** Units: **mg/Kg** Analysis Date: **1/24/2022 10:43 AM**
Client ID: Run ID: **LACHAT2_220124A** SeqNo: **8126897** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Total Kjeldahl	321.6	100	320	0	100	83-113	0			

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190757** Instrument ID **SPEC-03** Method: **E410.4 R2.0**

MBLK Sample ID: **MBLK-190757-190757** Units: **mg/Kg** Analysis Date: **1/22/2022 03:11 PM**
Client ID: Run ID: **SPEC-03_220122C** SeqNo: **8125758** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	ND	500	0	0	0	0-0	0			

LCS Sample ID: **LCS-190757-190757** Units: **mg/Kg** Analysis Date: **1/22/2022 03:11 PM**
Client ID: Run ID: **SPEC-03_220122C** SeqNo: **8125759** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	5959	500	6000	0	99.3	90-110	0			

MS Sample ID: **22011311-01A MS** Units: **mg/Kg** Analysis Date: **1/22/2022 03:11 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **SPEC-03_220122C** SeqNo: **8125764** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	7264	490	5859	1597	96.7	80-120	0			

MSD Sample ID: **22011311-01A MSD** Units: **mg/Kg** Analysis Date: **1/22/2022 03:11 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **SPEC-03_220122C** SeqNo: **8125765** Prep Date: **1/22/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chemical Oxygen Demand	7108	490	5859	1597	94.1	80-120	7264	2.16	20	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190805** Instrument ID **LACHAT2** Method: **A4500-NH3 G-11**

MBLK Sample ID: **MBLK-190805-190805** Units: **mg NH3-N/Kg** Analysis Date: **1/24/2022 04:18 PM**
Client ID: Run ID: **LACHAT2_220124B** SeqNo: **8128371** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	ND	15								

LCS Sample ID: **LCS-190805-190805** Units: **mg NH3-N/Kg** Analysis Date: **1/24/2022 04:19 PM**
Client ID: Run ID: **LACHAT2_220124B** SeqNo: **8128372** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	48.36	15	50	0	96.7	71-119	0			

MS Sample ID: **22011311-01A MS** Units: **mg NH3-N/Kg** Analysis Date: **1/24/2022 04:56 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **LACHAT2_220124B** SeqNo: **8128403** Prep Date: **1/24/2022** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	951.8	270	45.45	901	112	71-119	0			O

MSD Sample ID: **22011311-01A MSD** Units: **mg NH3-N/Kg** Analysis Date: **1/24/2022 04:58 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **LACHAT2_220124B** SeqNo: **8128404** Prep Date: **1/24/2022** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	1019	270	45.45	901	260	71-119	951.8	6.83	25	SO

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190814** Instrument ID **LACHAT2** Method: **E365.1 R2.0**

MBLK Sample ID: **MBLK-190814-190814** Units: **mg/Kg** Analysis Date: **1/25/2022 11:24 AM**
Client ID: Run ID: **LACHAT2_220125A** SeqNo: **8129775** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total	2.061	5.0								J

LCS Sample ID: **LCS-190814-190814** Units: **mg/Kg** Analysis Date: **1/25/2022 11:25 AM**
Client ID: Run ID: **LACHAT2_220125A** SeqNo: **8129776** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total	12.29	5.0	10	0	123	76-128	0			

MS Sample ID: **22011311-01A MS** Units: **mg/Kg** Analysis Date: **1/25/2022 12:21 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **LACHAT2_220125A** SeqNo: **8129825** Prep Date: **1/24/2022** DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total	2822	930	46.3	3291	-1010	76-128	0			SO

MSD Sample ID: **22011311-01A MSD** Units: **mg/Kg** Analysis Date: **1/25/2022 12:22 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **LACHAT2_220125A** SeqNo: **8129826** Prep Date: **1/24/2022** DF: **40**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total	3237	960	48.08	3291	-112	76-128	2822	13.7	20	SO

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190821** Instrument ID **IC3** Method: **SW9056A**

MBLK Sample ID: **MBLK-190821-190821** Units: **mg/Kg** Analysis Date: **1/26/2022 02:16 AM**
Client ID: Run ID: **IC3_220125A** SeqNo: **8131517** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	3.425	10								J
Sulfate	0.8785	10								J

LCS Sample ID: **LCS-190821-190821** Units: **mg/Kg** Analysis Date: **1/26/2022 02:27 AM**
Client ID: Run ID: **IC3_220125A** SeqNo: **8131518** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	96.82	10	99.6	0	97.2	80-116	0			
Sulfate	99.11	10	99.6	0	99.5	85-114	0			

MS Sample ID: **22011311-01A MS** Units: **mg/Kg** Analysis Date: **1/26/2022 03:01 AM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **IC3_220125A** SeqNo: **8131521** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	276	10	100	164.1	112	80-116	0			E
Sulfate	93.63	10	100	1.607	92	85-114	0			

MSD Sample ID: **22011311-01A MSD** Units: **mg/Kg** Analysis Date: **1/26/2022 03:12 AM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **IC3_220125A** SeqNo: **8131522** Prep Date: **1/24/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	276	10	99.8	164.1	112	80-116	276	0.00507	20	E
Sulfate	93.42	10	99.8	1.607	92	85-114	93.63	0.234	20	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190838** Instrument ID **SPEC-04** Method: **A4500-NO2 B-11**

MBLK	Sample ID: **MBLK-190838-190838**				Units: **mg/Kg**			Analysis Date: **1/25/2022 04:05 PM**			
Client ID:		Run ID: **SPEC-04_220125B**			SeqNo: **8130808**			Prep Date: **1/25/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrite	ND	0.20								

LCS	Sample ID: **LCS-190838-190838**				Units: **mg/Kg**			Analysis Date: **1/25/2022 04:05 PM**			
Client ID:		Run ID: **SPEC-04_220125B**			SeqNo: **8130809**			Prep Date: **1/25/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrite	1.919	0.20	1.992	0	96.3	87-121	0			

MS	Sample ID: **22011328-01A MS**				Units: **mg/Kg**			Analysis Date: **1/25/2022 04:05 PM**			
Client ID:		Run ID: **SPEC-04_220125B**			SeqNo: **8130812**			Prep Date: **1/25/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrite	1.297	0.20	1.972	0.06931	62.2	87-121	0			S

MSD	Sample ID: **22011328-01A MSD**				Units: **mg/Kg**			Analysis Date: **1/25/2022 04:05 PM**			
Client ID:		Run ID: **SPEC-04_220125B**			SeqNo: **8130813**			Prep Date: **1/25/2022**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrite	1.287	0.20	1.976	0.06931	61.6	87-121	1.297	0.796	14	S

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **190839** Instrument ID **LACHAT** Method: **E353.2**

MBLK Sample ID: **MBLK-190839-190839** Units: **mg/Kg** Analysis Date: **1/25/2022 12:55 PM**
Client ID: Run ID: **LACHAT_220125A** SeqNo: **8130735** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate	ND	0.20								

LCS Sample ID: **LCS-190839-190839** Units: **mg/Kg** Analysis Date: **1/25/2022 12:56 PM**
Client ID: Run ID: **LACHAT_220125A** SeqNo: **8130736** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate	25.04	0.20	24.9	0	101	90-110	0			

MS Sample ID: **22011328-01A MS** Units: **mg/Kg** Analysis Date: **1/25/2022 01:00 PM**
Client ID: Run ID: **LACHAT_220125A** SeqNo: **8130739** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate	19.85	0.20	24.41	0.0553	81.1	90-110	0			S

MSD Sample ID: **22011328-01A MSD** Units: **mg/Kg** Analysis Date: **1/25/2022 01:01 PM**
Client ID: Run ID: **LACHAT_220125A** SeqNo: **8130740** Prep Date: **1/25/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Nitrate	22.01	0.19	24.37	0.0553	90.1	90-110	19.85	10.3	20	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191020** Instrument ID **O&G** Method: **SW9071B**

MBLK Sample ID: **MBLK-191020-191020** Units: **mg/Kg** Analysis Date: **1/31/2022**
Client ID: Run ID: **O&G_220128B** SeqNo: **8141195** Prep Date: **1/28/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	ND	180								

LCS Sample ID: **LCS-191020-191020** Units: **mg/Kg** Analysis Date: **1/31/2022**
Client ID: Run ID: **O&G_220128B** SeqNo: **8141194** Prep Date: **1/28/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	1608	180	1600	0	100	78-114	0			

MS Sample ID: **22011409-02A MS** Units: **mg/Kg** Analysis Date: **1/31/2022**
Client ID: Run ID: **O&G_220128B** SeqNo: **8141189** Prep Date: **1/28/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	1264	180	1600	52	75.8	75-125	0			

MSD Sample ID: **22011409-02A MSD** Units: **mg/Kg** Analysis Date: **1/31/2022**
Client ID: Run ID: **O&G_220128B** SeqNo: **8141190** Prep Date: **1/28/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Oil and Grease	1572	180	1600	52	95	75-125	1264	21.7	25	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191100** Instrument ID **LACHAT2** Method: **SW9012B**

MBLK Sample ID: **MBLK-191100-191100** Units: **mg/Kg** Analysis Date: **1/31/2022 01:48 PM**
Client ID: Run ID: **LACHAT2_220131B** SeqNo: **8141454** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	1.463	0.030								

MBLK Sample ID: **MBLK-191100-191100** Units: **mg/Kg** Analysis Date: **1/31/2022 01:49 PM**
Client ID: Run ID: **LACHAT2_220131B** SeqNo: **8141455** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	0.02725	0.030								J

LCS Sample ID: **LCS-191100-191100** Units: **mg/Kg** Analysis Date: **1/31/2022 01:50 PM**
Client ID: Run ID: **LACHAT2_220131B** SeqNo: **8141456** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	1.524	0.030	1.5	0	102	87-115	0			

MS Sample ID: **22011562-49B MS** Units: **mg/Kg** Analysis Date: **1/31/2022 02:03 PM**
Client ID: Run ID: **LACHAT2_220131B** SeqNo: **8141471** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	1.531	0.030	1.5	0.03796	99.5	87-115	0			

MSD Sample ID: **22011562-49B MSD** Units: **mg/Kg** Analysis Date: **1/31/2022 02:04 PM**
Client ID: Run ID: **LACHAT2_220131B** SeqNo: **8141472** Prep Date: **1/31/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Total	1.586	0.030	1.5	0.03796	103	87-115	1.531	3.58	20	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **191153** Instrument ID **SKALAR1** Method: **SW9066**

MBLK Sample ID: **MBLK-191153-191153** Units: **mg/Kg** Analysis Date: **2/1/2022 02:06 PM**
Client ID: Run ID: **SKALAR1_220201B** SeqNo: **8145363** Prep Date: **2/1/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	ND	0.50								

LCS Sample ID: **LCS-191153-191153** Units: **mg/Kg** Analysis Date: **2/1/2022 02:06 PM**
Client ID: Run ID: **SKALAR1_220201B** SeqNo: **8145364** Prep Date: **2/1/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	5.187	0.50	5	0	104	86-116	0			

MS Sample ID: **22011840-01A MS** Units: **mg/Kg** Analysis Date: **2/1/2022 02:06 PM**
Client ID: Run ID: **SKALAR1_220201B** SeqNo: **8145367** Prep Date: **2/1/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	4.884	0.50	4.95	0.2726	93.1	86-116	0			

MSD Sample ID: **22011840-01A MSD** Units: **mg/Kg** Analysis Date: **2/1/2022 02:06 PM**
Client ID: Run ID: **SKALAR1_220201B** SeqNo: **8145368** Prep Date: **2/1/2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	4.702	0.50	5	0.2726	88.6	86-116	4.884	3.8	17	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **R336887** Instrument ID **WETCHEM** Method: **A2540 G-11**

MBLK Sample ID: **MB-R336887-R336887** Units: **% of sample** Analysis Date: **1/21/2022 03:16 PM**
Client ID: Run ID: **WETCHEM_220121L** SeqNo: **8126410** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Solids	ND	0.050								

MBLK Sample ID: **MB-R336887-R336887** Units: **% of sample** Analysis Date: **1/21/2022 03:16 PM**
Client ID: Run ID: **WETCHEM_220121L** SeqNo: **8126419** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.10								

LCS Sample ID: **LCS-R336887-R336887** Units: **% of sample** Analysis Date: **1/21/2022 03:16 PM**
Client ID: Run ID: **WETCHEM_220121L** SeqNo: **8126420** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.10	100	0	100	98-102	0			

DUP Sample ID: **22011311-01A DUP** Units: **% of sample** Analysis Date: **1/21/2022 03:16 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **WETCHEM_220121L** SeqNo: **8126415** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Solids	7.5	0.050	0	0	0	0-0	7.57	0.929	10	

DUP Sample ID: **22011311-01A DUP** Units: **% of sample** Analysis Date: **1/21/2022 03:16 PM**
Client ID: **1st Quarter Biosolids 2022** Run ID: **WETCHEM_220121L** SeqNo: **8126425** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	92.5	0.10	0	0	0	0-0	92.43	0.0757	10	

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **R337044** Instrument ID **WETCHEM** Method: **D240**

LCS	Sample ID: **LCS-R337044-R337044**				Units: **BTU/lb as recd.**		Analysis Date: **1/26/2022 11:45 AM**			
Client ID:		Run ID: **WETCHEM_220126F**			SeqNo: **8132135**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calorific Value (BTU)	11370	100	11370	0	100	80-120	0			

The following samples were analyzed in this batch: 22011311-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: Delhi Charter Twp POTW
Work Order: 22011311
Project: 1st Quarter Biosolids 2022

QC BATCH REPORT

Batch ID: **R337453** Instrument ID **WETCHEM** Method: **A2710 F**

DUP	Sample ID: **22020060-01A DUP**				Units: **lbs/gallon**			Analysis Date: **2/2/2022 04:38 PM**			
Client ID:		Run ID: **WETCHEM_220202I**			SeqNo: **8147558**		Prep Date:		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Density	8.593	0	0	0	0	0-0	8.62	0.311	20		

The following samples were analyzed in this batch: 22011311-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

☐ ALS Laboratory Group
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Form

Page 1 of 1

☐ ALS Laboratory Group
3352 128th Avenue
Holland, Michigan 49424
(Tel) 616.399.6070
(Fax) 616.399.6185

ALS Project Manager: | ALS Work Order #: Z2011311

Customer Information		Project Information	
Purchase Order	40350	Project Name	1st quarter Biosolids 2022
Work Order		Project Number	
Company Name	Delhi Charter Township	Bill To Company	
Send Report To	Jeff Ranes	Invoice Attn.	
Address	5961 McCue	Address	
City/State/Zip	Holt, MI 48842	City/State/Zip	
Phone	517-699-3873	Phone	517-749-6326 Cell
Fax	517-694-1490	Fax	
e-Mail Address	jeff.ranes@delhitownship.com		

Parameter/Method Request for Analysis

A	Chloride, Sulfate, Density, Total Solids, TSS
B	Ammonia N, TKN, Nitrate N, Nitrite N, Total P
C	As, Ba, Cd, Ca, Cr, Cu, Pb, Mg, Mo, Ni, K, Se, Ag, Na, Zn, & Hg
D	pH
E	BTU Value
F	cyanide
G	phenol/ Toluene
H	BOD, COD
I	FOG
J	PFOS EPA 537 Modified
K	Fecals

No.	Sample Description	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	G	H	I	J	K	Hold
1	First Quarter Biosolids	1/20/2022	1:45pm	BioS	8	2	x	x	x	x	x	x		x	X		x	
2	First Quarter Biosolids	1/20/2022	1:45pm	BioS	7,8	4							X					
3	First Quarter Biosolids	1/20/2022	1:45pm	BioS	8	2										X		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Sampler(s): Please Print & Sign
Noah Trigo

Shipment Method: UPS

Required Turnaround Time: (Check Box) ☑ 10 Wk Days ☐ 5 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Noah Trigo	1/20/2022	2:45pm	UPS	1/20/2022	2:45pm
UPS	1/21/22	0800			
Logged by (Laboratory): KLJ	1/21/22	0955	Checked by (Laboratory): CC		

Notes:

ALS Cooler ID	Cooler Temp
IR3	4.9°

QC Package: (Check Box Below)
☐ Level II: Standard QC ☐ Level III: Raw Data
☐ TRRP LRC ☐ TRRP Level IV
☐ Level IV: SW846 Methods/CLP like
☐ Other: _____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS.

JEFF RANES
5176993874
DELHI CHARTER TOWNSHIP DPS
5961 MCCUE ROAD
HOLT MI 48842

35 LBS
AH

1 OF 1

SHIP TO:
BILL CAREY
616 3996070
ALS LABS
3352 128TH STREET
HOLLAND MI 49424

MI 495 9-04

UPS NEXT DAY AIR EARLY **1+**

TRACKING #: 1Z V4X 305 15 9212 0018

BILLING: P/P

XOL 22.01.25 NV45 4.0A 01/2022*

TM

ALS Group, USA

Sample Receipt Checklist

Client Name: **DELHITWP** Date/Time Received: **21-Jan-22 08:00**

Work Order: **22011311** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 21-Jan-22 (Date) Reviewed by: Bill Carey (eSignature) 24-Jan-22 (Date)

Matrices: Sludge

Carrier name: UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.9/5.9 C	IR3	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/21/2022 9:55:15 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

Revision: 1