17-Jun-2021

Rodney Schwartz
City of Gladstone WWTP
1100 Delta Avenue
Gladstone, MI 49878

Re: **Sludge Analyses** Work Order: **21060817**

Dear Rodney,

ALS Environmental received 1 sample on 08-Jun-2021 10:00 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 21.

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: Bill Carey

Bill Carey
Project Manager

Report of Laboratory Analysis

Certificate No: MN 026-999-449

ALS Group, USA

Date: 17-Jun-21

Client: City of Gladstone WWTP
Project: Sludge Analyses
Work Order: **21060817**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
21060817-01	35286 Digested Sludge	Sludge		6/7/2021 13:00	6/8/2021 10:00	☐

ALS Group, USA

Date: 17-Jun-21

Client: City of Gladstone WWTP
Project: Sludge Analyses
WorkOrder: **21060817**

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

Client: City of Gladstone WWTP
Project: Sludge Analyses
Work Order: 21060817

Case Narrative

Batch 178178, Method D7968-17a, Sample 35286 Digested Sludge (21060817-01A): One or more surrogate recoveries were below the lower control limits. The sample results may be biased low, 13C2-PFDoA, 13C2-PFTeA, 13C8-FOSA

Batch 178178, Method D7968-17a, Sample 35286 Digested Sludge (21060817-01A): One or more surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed. 13C2-FtS 4:2, 13C2-FtS 6:2, 13C2-FtS 8:2

Batch 178178, Method D7968-17a, Sample LCS1-178178: The LCS recovery was above the upper control limit. All sample results in the batch were non-detect. No qualification is necessary for this analyte: PFDS, PFPeS

ALS Group, USA

Date: *17-Jun-21*

Client: City of Gladstone WWTP
Project: Sludge Analyses
Sample ID: 35286 Digested Sludge
Collection Date: 6/7/2021 01:00 PM

Work Order: 21060817
Lab ID: 21060817-01
Matrix: SLUDGE

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PFAS BY LC-MS-MS		Method: **D7968-17A**			Prep: D7968-17a / 6/8/21		Analyst: **SK**
Perfluorobutanoic Acid (PFBA)	U		1,100	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluoropentanoic Acid (PFPeA)	U		420	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorohexanoic Acid (PFHxA)	**1,200**	J	**390**	**3,200**	**ng/Kg-dry**	1	6/9/2021 16:00
Perfluoroheptanoic Acid (PFHpA)	U		420	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorooctanoic Acid (PFOA)	**380**	J	**280**	**630**	**ng/Kg-dry**	1	6/9/2021 16:00
Perfluorononanoic Acid (PFNA)	**380**	J	**320**	**630**	**ng/Kg-dry**	1	6/9/2021 16:00
Perfluorodecanoic Acid (PFDA)	**840**	J	**490**	**3,200**	**ng/Kg-dry**	1	6/9/2021 16:00
Perfluoroundecanoic Acid (PFUnA)	U		540	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorododecanoic Acid (PFDoA)	U		660	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorotridecanoic Acid (PFTriA)	U		720	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorotetradecanoic Acid (PFTeA)	U		1,000	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorobutanesulfonic Acid (PFBS)	U		420	630	ng/Kg-dry	1	6/9/2021 16:00
Perfluoropentanesulfonic Acid (PFPeS)	U		350	630	ng/Kg-dry	1	6/9/2021 16:00
Perfluorohexanesulfonic Acid (PFHxS)	U		600	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluoroheptanesulfonic Acid (PFHpS)	U		550	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorooctanesulfonic Acid (PFOS)	**6,400**		**260**	**630**	**ng/Kg-dry**	1	6/9/2021 16:00
Perfluorononanesulfonic Acid (PFNS)	U		550	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorodecanesulfonic Acid (PFDS)	**1,400**		**330**	**630**	**ng/Kg-dry**	1	6/9/2021 16:00
Fluorotelomer Sulphonic Acid 4:2 (FtS 4:2)	U		710	3,200	ng/Kg-dry	1	6/9/2021 16:00
Fluorotelomer Sulphonic Acid 6:2 (FtS 6:2)	U		1,200	3,200	ng/Kg-dry	1	6/9/2021 16:00
Fluorotelomer Sulphonic Acid 8:2 (FtS 8:2)	U		1,500	3,200	ng/Kg-dry	1	6/9/2021 16:00
Perfluorooctanesulfonamide (PFOSA)	U		210	630	ng/Kg-dry	1	6/9/2021 16:00
N-Ethylperfluorooctanesulfonamidoacetic Acid	**2,800**	J	**1,200**	**3,200**	**ng/Kg-dry**	1	6/9/2021 16:00
N-Methylperfluorooctanesulfonamidoacetic Acid	**9,000**		**770**	**3,200**	**ng/Kg-dry**	1	6/9/2021 16:00
11Cl-Pf3OUdS	U		260	630	ng/Kg-dry	1	6/9/2021 16:00
4,8-Dioxa-3H-perfluorononanoic Acid (DONA)	U		150	630	ng/Kg-dry	1	6/9/2021 16:00
9Cl-PF3ONS	U		120	630	ng/Kg-dry	1	6/9/2021 16:00
Hexafluoropropylene oxide dimer acid (HFPO-DA)	U		2,500	3,200	ng/Kg-dry	1	6/9/2021 16:00
MOISTURE		Method: **SW3550C**					Analyst: **KTP**
Moisture	**96**		**0.10**	**0.10**	**% of sample**	1	6/10/2021 14:53

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

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

MBLK1 Sample ID: **MBLK1-178178-178178** Units: **ng/Kg** Analysis Date: **6/8/2021 02:34 PM**

Client ID: Run ID: **LCMS1_210608B** SeqNo: **7470083** Prep Date: **6/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	U	120	0	0	0		0			
Perfluoropentanoic Acid (PFPeA)	U	120	0	0	0		0			
Perfluorohexanoic Acid (PFHxA)	U	120	0	0	0		0			
Perfluoroheptanoic Acid (PFHpA)	U	120	0	0	0		0			
Perfluorooctanoic Acid (PFOA)	U	25	0	0	0		0			
Perfluorononanoic Acid (PFNA)	U	25	0	0	0		0			
Perfluorodecanoic Acid (PFDA)	U	120	0	0	0		0			
Perfluoroundecanoic Acid (PFUnA)	U	120	0	0	0		0			
Perfluorododecanoic Acid (PFDoA)	U	120	0	0	0		0			
Perfluorotridecanoic Acid (PFTriA)	U	120	0	0	0		0			
Perfluorotetradecanoic Acid (PFTeA)	U	120	0	0	0		0			
Perfluorobutanesulfonic Acid (PFBS)	U	25	0	0	0		0			
Perfluoropentanesulfonic Acid (PFPeS	U	25	0	0	0		0			
Perfluorohexanesulfonic Acid (PFHxS)	U	120	0	0	0		0			
Perfluoroheptanesulfonic Acid (PFHpS	U	120	0	0	0		0			
Perfluorooctanesulfonic Acid (PFOS)	U	25	0	0	0		0			
Perfluorononanesulfonic Acid (PFNS)	U	120	0	0	0		0			
Perfluorodecanesulfonic Acid (PFDS)	U	25	0	0	0		0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	U	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	U	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	U	120	0	0	0		0			
Perfluorooctanesulfonamide (PFOSA)	U	25	0	0	0		0			
N-Ethylperfluorooctanesulfonamidoace	U	120	0	0	0		0			
N-Methylperfluorooctanesulfonamidoa	U	120	0	0	0		0			
11Cl-Pf3OUdS	U	25	0	0	0		0			
4,8-Dioxa-3H-perfluorononanoic Acid (	U	25	0	0	0		0			
9Cl-PF3ONS	U	25	0	0	0		0			
Hexafluoropropylene oxide dimer acid	U	120	0	0	0		0			
Surr: 13C4-PFBA	*401.4*	0	*400*	0	*100*	*50-130*	0			
Surr: 13C5-PFPeA	*418.4*	0	*400*	0	*105*	*50-130*	0			
Surr: 13C2-PFHxA	*437.6*	0	*400*	0	*109*	*50-130*	0			
Surr: 13C4-PFHpA	*392.1*	0	*400*	0	*98*	*50-130*	0			
Surr: 13C4-PFOA	*455.4*	0	*400*	0	*114*	*70-130*	0			
Surr: 13C5-PFNA	*393.6*	0	*400*	0	*98.4*	*70-130*	0			
Surr: 13C2-PFDA	*411.8*	0	*400*	0	*103*	*70-130*	0			
Surr: 13C2-PFUnA	*394.5*	0	*400*	0	*98.6*	*70-130*	0			
Surr: 13C2-PFDoA	*478.8*	0	*400*	0	*120*	*70-130*	0			
Surr: 13C2-PFTeA	*430*	0	*400*	0	*108*	*50-130*	0			
Surr: 13C3-PFBS	*365.1*	0	*400*	0	*91.3*	*50-130*	0			
Surr: 18O2-PFHxS	*383.3*	0	*378*	0	*101*	*70-130*	0			
Surr: 13C4-PFOS	*364.6*	0	*383*	0	*95.2*	*70-130*	0			

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

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 4:2	*272.2*	0	*373*	0	*73*	*50-130*	0
Surr: 13C2-FtS 6:2	*362*	0	*380*	0	*95.3*	*50-130*	0
Surr: 13C2-FtS 8:2	*348.6*	0	*383*	0	*91*	*50-130*	0
Surr: 13C8-FOSA	*398.2*	0	*400*	0	*99.5*	*50-130*	0
Surr: d3-N-MeFOSAA	*400.1*	0	*400*	0	*100*	*50-130*	0
Surr: d5-N-EtFOSAA	*432.1*	0	*400*	0	*108*	*50-130*	0
Surr: 13C3-HFPO-DA	*418.4*	0	*400*	0	*105*	*50-130*	0

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

MBLK2	Sample ID: **MBLK2-178178-178178**				Units: **ng/Kg**			Analysis Date: **6/8/2021 03:16 PM**			
Client ID:		Run ID: **LCMS1_210608B**			SeqNo: **7470087**			Prep Date: **6/8/2021**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	U	120	0	0	0		0			
Perfluoropentanoic Acid (PFPeA)	U	120	0	0	0		0			
Perfluorohexanoic Acid (PFHxA)	U	120	0	0	0		0			
Perfluoroheptanoic Acid (PFHpA)	U	120	0	0	0		0			
Perfluorooctanoic Acid (PFOA)	U	25	0	0	0		0			
Perfluorononanoic Acid (PFNA)	U	25	0	0	0		0			
Perfluorodecanoic Acid (PFDA)	19.88	120	0	0	0		0			J
Perfluoroundecanoic Acid (PFUnA)	U	120	0	0	0		0			
Perfluorododecanoic Acid (PFDoA)	U	120	0	0	0		0			
Perfluorotridecanoic Acid (PFTriA)	U	120	0	0	0		0			
Perfluorotetradecanoic Acid (PFTeA)	U	120	0	0	0		0			
Perfluorobutanesulfonic Acid (PFBS)	U	25	0	0	0		0			
Perfluoropentanesulfonic Acid (PFPeS	U	25	0	0	0		0			
Perfluorohexanesulfonic Acid (PFHxS)	U	120	0	0	0		0			
Perfluoroheptanesulfonic Acid (PFHpS	U	120	0	0	0		0			
Perfluorooctanesulfonic Acid (PFOS)	U	25	0	0	0		0			
Perfluorononanesulfonic Acid (PFNS)	U	120	0	0	0		0			
Perfluorodecanesulfonic Acid (PFDS)	U	25	0	0	0		0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	U	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	U	120	0	0	0		0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	U	120	0	0	0		0			
Perfluorooctanesulfonamide (PFOSA)	U	25	0	0	0		0			
N-Ethylperfluorooctanesulfonamidoace	U	120	0	0	0		0			
N-Methylperfluorooctanesulfonamidoa	U	120	0	0	0		0			
11Cl-Pf3OUdS	U	25	0	0	0		0			
4,8-Dioxa-3H-perfluorononanoic Acid (	U	25	0	0	0		0			
9Cl-PF3ONS	U	25	0	0	0		0			
Hexafluoropropylene oxide dimer acid	U	120	0	0	0		0			
Surr: 13C4-PFBA	*387.5*	0	*400*	0	*96.9*	*50-130*	0			
Surr: 13C5-PFPeA	*410.4*	0	*400*	0	*103*	*50-130*	0			
Surr: 13C2-PFHxA	*423.6*	0	*400*	0	*106*	*50-130*	0			
Surr: 13C4-PFHpA	*397.4*	0	*400*	0	*99.3*	*50-130*	0			
Surr: 13C4-PFOA	*433.4*	0	*400*	0	*108*	*70-130*	0			
Surr: 13C5-PFNA	*392.2*	0	*400*	0	*98.1*	*70-130*	0			
Surr: 13C2-PFDA	*396.2*	0	*400*	0	*99.1*	*70-130*	0			
Surr: 13C2-PFUnA	*396.7*	0	*400*	0	*99.2*	*70-130*	0			
Surr: 13C2-PFDoA	*435.5*	0	*400*	0	*109*	*70-130*	0			
Surr: 13C2-PFTeA	*398*	0	*400*	0	*99.5*	*50-130*	0			
Surr: 13C3-PFBS	*372.3*	0	*400*	0	*93.1*	*50-130*	0			
Surr: 18O2-PFHxS	*362*	0	*378*	0	*95.8*	*70-130*	0			
Surr: 13C4-PFOS	*358.7*	0	*383*	0	*93.7*	*70-130*	0			
Surr: 13C2-FtS 4:2	*274.6*	0	*373*	0	*73.6*	*50-130*	0			

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

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*265.3*	0	*380*	0	*69.8*	*50-130*	0
Surr: 13C2-FtS 8:2	*309.7*	0	*383*	0	*80.9*	*50-130*	0
Surr: 13C8-FOSA	*395.3*	0	*400*	0	*98.8*	*50-130*	0
Surr: d3-N-MeFOSAA	*411.2*	0	*400*	0	*103*	*50-130*	0
Surr: d5-N-EtFOSAA	*428.8*	0	*400*	0	*107*	*50-130*	0
Surr: 13C3-HFPO-DA	*383.6*	0	*400*	0	*95.9*	*50-130*	0

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

MS	Sample ID: **21060641-02A MS**				Units: **ng/Kg**		Analysis Date: **6/8/2021 03:26 PM**			
Client ID:		Run ID: **LCMS1_210608B**			SeqNo: **7470088**		Prep Date: **6/8/2021**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	536.5	120	500	175.9	72.1	50-130	0			
Perfluoropentanoic Acid (PFPeA)	496.7	120	500	31.76	93	70-130	0			
Perfluorohexanoic Acid (PFHxA)	516.5	120	500	0	103	50-130	0			
Perfluoroheptanoic Acid (PFHpA)	494.3	120	500	12.18	96.4	50-130	0			
Perfluorooctanoic Acid (PFOA)	537.6	25	500	30.29	101	70-130	0			
Perfluorononanoic Acid (PFNA)	500.2	25	500	16.87	96.7	70-130	0			
Perfluorodecanoic Acid (PFDA)	522.3	120	500	25.05	99.4	70-130	0			
Perfluoroundecanoic Acid (PFUnA)	489.6	120	500	2.666	97.4	70-130	0			
Perfluorododecanoic Acid (PFDoA)	509.6	120	500	15.12	98.9	70-130	0			
Perfluorotridecanoic Acid (PFTriA)	245.6	120	500	12.33	46.6	70-130	0			S
Perfluorotetradecanoic Acid (PFTeA)	195.6	120	500	0	39.1	70-130	0			S
Perfluorobutanesulfonic Acid (PFBS)	426.7	25	442	31.11	89.5	70-130	0			
Perfluoropentanesulfonic Acid (PFPeS	394.3	25	469	0	84.1	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	436.4	120	455	0	95.9	70-130	0			
Perfluoroheptanesulfonic Acid (PFHpS	430	120	476	0	90.3	70-130	0			
Perfluorooctanesulfonic Acid (PFOS)	597.7	25	464	196.8	86.4	70-130	0			
Perfluorononanesulfonic Acid (PFNS)	461.2	120	480	0	96.1	70-130	0			
Perfluorodecanesulfonic Acid (PFDS)	391.2	25	482	0	81.2	70-130	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	1590	120	467	0	340	70-130	0			S
Fluorotelomer Sulphonic Acid 6:2 (FtS	1991	120	474	0	420	70-130	0			S
Fluorotelomer Sulphonic Acid 8:2 (FtS	1938	120	479	0	405	70-130	0			S
Perfluorooctanesulfonamide (PFOSA)	418.6	25	500	12.79	81.2	70-130	0			
N-Ethylperfluorooctanesulfonamidoace	977.6	120	500	347.7	126	70-130	0			
N-Methylperfluorooctanesulfonamidoa	889.7	120	500	297.3	118	70-130	0			
11Cl-Pf3OUdS	333.1	25	471	0	70.7	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	409.7	25	471	0	87	70-130	0			
9Cl-PF3ONS	376.2	25	466	0	80.7	70-130	0			
Hexafluoropropylene oxide dimer acid	617.5	120	500	86.72	106	50-130	0			
Surr: 13C4-PFBA	*367.4*	0	*400*	0	*91.8*	*50-130*	0			
Surr: 13C5-PFPeA	*406*	0	*400*	0	*101*	*50-130*	0			
Surr: 13C2-PFHxA	*423.9*	0	*400*	0	*106*	*50-130*	0			
Surr: 13C4-PFHpA	*389.6*	0	*400*	0	*97.4*	*50-130*	0			
Surr: 13C4-PFOA	*448.6*	0	*400*	0	*112*	*70-130*	0			
Surr: 13C5-PFNA	*405.8*	0	*400*	0	*101*	*70-130*	0			
Surr: 13C2-PFDA	*441.9*	0	*400*	0	*110*	*70-130*	0			
Surr: 13C2-PFUnA	*403.9*	0	*400*	0	*101*	*70-130*	0			
Surr: 13C2-PFDoA	*407.1*	0	*400*	0	*102*	*70-130*	0			
Surr: 13C2-PFTeA	*134.9*	0	*400*	0	*33.7*	*50-130*	0			*S*
Surr: 13C3-PFBS	*467*	0	*400*	0	*117*	*50-130*	0			
Surr: 18O2-PFHxS	*348.5*	0	*378*	0	*92.2*	*70-130*	0			
Surr: 13C4-PFOS	*347.1*	0	*383*	0	*90.6*	*70-130*	0			
Surr: 13C2-FtS 4:2	*1151*	0	*373*	0	*308*	*50-130*	0			*S*

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178**	Instrument ID **LCMS1**		Method: **D7968-17a**					
Surr: 13C2-FtS 6:2	*1334*	0	*380*	0	*351*	*50-130*	0	*S*
Surr: 13C2-FtS 8:2	*1425*	0	*383*	0	*372*	*50-130*	0	*S*
Surr: 13C8-FOSA	*349.3*	0	*400*	0	*87.3*	*50-130*	0	
Surr: d3-N-MeFOSAA	*524.3*	0	*400*	0	*131*	*50-130*	0	*S*
Surr: d5-N-EtFOSAA	*588.4*	0	*400*	0	*147*	*50-130*	0	*S*
Surr: 13C3-HFPO-DA	*355.7*	0	*400*	0	*88.9*	*50-130*	0	

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

MSD Sample ID: **21060641-02A MSD** Units: **ng/Kg** Analysis Date: **6/8/2021 03:37 PM**
Client ID: Run ID: **LCMS1_210608B** SeqNo: **7470089** Prep Date: **6/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	538.2	120	500	175.9	72.5	50-130	536.5	0.324	30	
Perfluoropentanoic Acid (PFPeA)	497.6	120	500	31.76	93.2	70-130	496.7	0.185	30	
Perfluorohexanoic Acid (PFHxA)	524.3	120	500	0	105	50-130	516.5	1.5	30	
Perfluoroheptanoic Acid (PFHpA)	491.7	120	500	12.18	95.9	50-130	494.3	0.518	30	
Perfluorooctanoic Acid (PFOA)	527.7	25	500	30.29	99.5	70-130	537.6	1.85	30	
Perfluorononanoic Acid (PFNA)	510.8	25	500	16.87	98.8	70-130	500.2	2.11	30	
Perfluorodecanoic Acid (PFDA)	528.1	120	500	25.05	101	70-130	522.3	1.12	30	
Perfluoroundecanoic Acid (PFUnA)	479.9	120	500	2.666	95.5	70-130	489.6	1.99	30	
Perfluorododecanoic Acid (PFDoA)	479.3	120	500	15.12	92.8	70-130	509.6	6.12	30	
Perfluorotridecanoic Acid (PFTriA)	216.9	120	500	12.33	40.9	70-130	245.6	12.4	30	S
Perfluorotetradecanoic Acid (PFTeA)	169.4	120	500	0	33.9	70-130	195.6	14.4	30	S
Perfluorobutanesulfonic Acid (PFBS)	431.6	25	442	31.11	90.6	70-130	426.7	1.15	30	
Perfluoropentanesulfonic Acid (PFPeS	420.6	25	469	0	89.7	70-130	394.3	6.46	30	
Perfluorohexanesulfonic Acid (PFHxS)	428.4	120	455	0	94.2	70-130	436.4	1.85	30	
Perfluoroheptanesulfonic Acid (PFHpS	379.8	120	476	0	79.8	70-130	430	12.4	30	
Perfluorooctanesulfonic Acid (PFOS)	613.4	25	464	196.8	89.8	70-130	597.7	2.58	30	
Perfluorononanesulfonic Acid (PFNS)	414	120	480	0	86.3	70-130	461.2	10.8	30	
Perfluorodecanesulfonic Acid (PFDS)	408.7	25	482	0	84.8	70-130	391.2	4.36	30	
Fluorotelomer Sulphonic Acid 4:2 (FtS	1572	120	467	0	337	70-130	1590	1.12	30	S
Fluorotelomer Sulphonic Acid 6:2 (FtS	1866	120	474	0	394	70-130	1991	6.5	30	S
Fluorotelomer Sulphonic Acid 8:2 (FtS	2112	120	479	0	441	70-130	1938	8.6	30	S
Perfluorooctanesulfonamide (PFOSA)	406.6	25	500	12.79	78.8	70-130	418.6	2.91	30	
N-Ethylperfluorooctanesulfonamidoace	868	120	500	347.7	104	70-130	977.6	11.9	30	
N-Methylperfluorooctanesulfonamidoa	915.3	120	500	297.3	124	70-130	889.7	2.84	30	
11Cl-Pf3OUdS	325.3	25	471	0	69.1	70-130	333.1	2.36	30	S
4,8-Dioxa-3H-perfluorononanoic Acid (	409	25	471	0	86.8	70-130	409.7	0.165	30	
9Cl-PF3ONS	369.6	25	466	0	79.3	70-130	376.2	1.78	30	
Hexafluoropropylene oxide dimer acid	599.5	120	500	86.72	103	50-130	617.5	2.96	30	
Surr: 13C4-PFBA	*369.2*	0	*400*	0	*92.3*	*50-130*	367.4	*0.499*	*30*	
Surr: 13C5-PFPeA	*401.2*	0	*400*	0	*100*	*50-130*	406	*1.18*	*30*	
Surr: 13C2-PFHxA	*406.5*	0	*400*	0	*102*	*50-130*	423.9	*4.21*	*30*	
Surr: 13C4-PFHpA	*384.4*	0	*400*	0	*96.1*	*50-130*	389.6	*1.36*	*30*	
Surr: 13C4-PFOA	*430.9*	0	*400*	0	*108*	*70-130*	448.6	*4.02*	*30*	
Surr: 13C5-PFNA	*394.3*	0	*400*	0	*98.6*	*70-130*	405.8	*2.86*	*30*	
Surr: 13C2-PFDA	*424.2*	0	*400*	0	*106*	*70-130*	441.9	*4.09*	*30*	
Surr: 13C2-PFUnA	*406.3*	0	*400*	0	*102*	*70-130*	403.9	*0.593*	*30*	
Surr: 13C2-PFDoA	*381.9*	0	*400*	0	*95.5*	*70-130*	407.1	*6.37*	*30*	
Surr: 13C2-PFTeA	*113*	0	*400*	0	*28.3*	*50-130*	134.9	*17.6*	*30*	*S*
Surr: 13C3-PFBS	*478.6*	0	*400*	0	*120*	*50-130*	467	*2.44*	*30*	
Surr: 18O2-PFHxS	*337.5*	0	*378*	0	*89.3*	*70-130*	348.5	*3.21*	*30*	
Surr: 13C4-PFOS	*339.9*	0	*383*	0	*88.8*	*70-130*	347.1	*2.09*	*30*	
Surr: 13C2-FtS 4:2	*1096*	0	*373*	0	*294*	*50-130*	1151	*4.84*	*30*	*S*

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

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

Surr: 13C2-FtS 6:2	*1279*	0	*380*	0	*337*	*50-130*	1334	*4.18*	*30*	*S*
Surr: 13C2-FtS 8:2	*1437*	0	*383*	0	*375*	*50-130*	1425	*0.834*	*30*	*S*
Surr: 13C8-FOSA	*344.9*	0	*400*	0	*86.2*	*50-130*	349.3	*1.28*	*30*	
Surr: d3-N-MeFOSAA	*494.5*	0	*400*	0	*124*	*50-130*	524.3	*5.87*	*30*	
Surr: d5-N-EtFOSAA	*597.3*	0	*400*	0	*149*	*50-130*	588.4	*1.5*	*30*	*S*
Surr: 13C3-HFPO-DA	*352.2*	0	*400*	0	*88*	*50-130*	355.7	*1*	*30*	

LCS1 Sample ID: **LCS1-178178-178178** Units: **ng/Kg** Analysis Date: **6/8/2021 02:44 PM**

Client ID: Run ID: **LCMS1_210608B** SeqNo: **7470084** Prep Date: **6/8/2021** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorooctanoic Acid (PFOA)	32.67	25	25	0	131	35-150	0			
Perfluorononanoic Acid (PFNA)	34.12	25	25	0	136	35-150	0			
Perfluorobutanesulfonic Acid (PFBS)	29.49	25	22	0	134	35-150	0			
Perfluoropentanesulfonic Acid (PFPeS	35.61	25	23.5	0	152	35-150	0			S
Perfluorooctanesulfonic Acid (PFOS)	26.78	25	23	0	116	35-150	0			
Perfluorodecanesulfonic Acid (PFDS)	42.89	25	24	0	179	35-150	0			S
Perfluorooctanesulfonamide (PFOSA)	25.88	25	25	0	104	35-150	0			
11Cl-Pf3OUdS	27.76	25	23.5	0	118	35-150	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	27.61	25	23.5	0	117	35-150	0			
9Cl-PF3ONS	24.84	25	23	0	108	35-150	0			J
Surr: 13C4-PFBA	*374.9*	0	*400*	0	*93.7*	*50-130*	0			
Surr: 13C5-PFPeA	*405.4*	0	*400*	0	*101*	*50-130*	0			
Surr: 13C2-PFHxA	*428.2*	0	*400*	0	*107*	*50-130*	0			
Surr: 13C4-PFHpA	*394.3*	0	*400*	0	*98.6*	*50-130*	0			
Surr: 13C4-PFOA	*435.1*	0	*400*	0	*109*	*70-130*	0			
Surr: 13C5-PFNA	*381.2*	0	*400*	0	*95.3*	*70-130*	0			
Surr: 13C2-PFDA	*395.7*	0	*400*	0	*98.9*	*70-130*	0			
Surr: 13C2-PFUnA	*387.8*	0	*400*	0	*97*	*70-130*	0			
Surr: 13C2-PFDoA	*455.8*	0	*400*	0	*114*	*70-130*	0			
Surr: 13C2-PFTeA	*432.9*	0	*400*	0	*108*	*50-130*	0			
Surr: 13C3-PFBS	*369.8*	0	*400*	0	*92.5*	*50-130*	0			
Surr: 18O2-PFHxS	*333*	0	*378*	0	*88.1*	*70-130*	0			
Surr: 13C4-PFOS	*357.1*	0	*383*	0	*93.2*	*70-130*	0			
Surr: 13C2-FtS 4:2	*253.9*	0	*373*	0	*68.1*	*50-130*	0			
Surr: 13C2-FtS 6:2	*316*	0	*380*	0	*83.2*	*50-130*	0			
Surr: 13C2-FtS 8:2	*357.3*	0	*383*	0	*93.3*	*50-130*	0			
Surr: 13C8-FOSA	*393.7*	0	*400*	0	*98.4*	*50-130*	0			
Surr: d3-N-MeFOSAA	*419.4*	0	*400*	0	*105*	*50-130*	0			
Surr: d5-N-EtFOSAA	*469.3*	0	*400*	0	*117*	*50-130*	0			
Surr: 13C3-HFPO-DA	*388.5*	0	*400*	0	*97.1*	*50-130*	0			

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

LCS2	Sample ID: **LCS2-178178-178178**				Units: **ng/Kg**			Analysis Date: **6/8/2021 03:05 PM**			
Client ID:		Run ID: **LCMS1_210608B**			SeqNo: **7470086**			Prep Date: **6/8/2021**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	475.5	120	500	0	95.1	50-130	0			
Perfluoropentanoic Acid (PFPeA)	515	120	500	0	103	70-130	0			
Perfluorohexanoic Acid (PFHxA)	527.6	120	500	0	106	50-130	0			
Perfluoroheptanoic Acid (PFHpA)	499.6	120	500	0	99.9	50-130	0			
Perfluorooctanoic Acid (PFOA)	496.4	25	500	0	99.3	70-130	0			
Perfluorononanoic Acid (PFNA)	477.6	25	500	0	95.5	70-130	0			
Perfluorodecanoic Acid (PFDA)	490.6	120	500	0	98.1	70-130	0			
Perfluoroundecanoic Acid (PFUnA)	456.1	120	500	0	91.2	70-130	0			
Perfluorododecanoic Acid (PFDoA)	571.5	120	500	0	114	70-130	0			
Perfluorotridecanoic Acid (PFTriA)	472.5	120	500	0	94.5	70-130	0			
Perfluorotetradecanoic Acid (PFTeA)	611	120	500	0	122	70-130	0			
Perfluorobutanesulfonic Acid (PFBS)	456.3	25	442	0	103	70-130	0			
Perfluoropentanesulfonic Acid (PFPeS	441.4	25	469	0	94.1	70-130	0			
Perfluorohexanesulfonic Acid (PFHxS)	427.9	120	455	0	94	70-130	0			
Perfluoroheptanesulfonic Acid (PFHpS	478.2	120	476	0	100	70-130	0			
Perfluorooctanesulfonic Acid (PFOS)	443.7	25	464	0	95.6	70-130	0			
Perfluorononanesulfonic Acid (PFNS)	473.4	120	480	0	98.6	70-130	0			
Perfluorodecanesulfonic Acid (PFDS)	519.9	25	482	0	108	70-130	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	436.8	120	467	0	93.5	70-130	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	506.2	120	474	0	107	70-130	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	480	120	479	0	100	70-130	0			
Perfluorooctanesulfonamide (PFOSA)	470.1	25	500	0	94	70-130	0			
N-Ethylperfluorooctanesulfonamidoace	426.3	120	500	0	85.3	70-130	0			
N-Methylperfluorooctanesulfonamidoa	442.2	120	500	0	88.4	70-130	0			
11Cl-Pf3OUdS	438.7	25	471	0	93.1	70-130	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	423.2	25	471	0	89.8	70-130	0			
9Cl-PF3ONS	409.3	25	466	0	87.8	70-130	0			
Hexafluoropropylene oxide dimer acid	533.6	120	500	0	107	50-130	0			
Surr: 13C4-PFBA	*383.6*	0	*400*	0	*95.9*	*50-130*	0			
Surr: 13C5-PFPeA	*401.4*	0	*400*	0	*100*	*50-130*	0			
Surr: 13C2-PFHxA	*409.9*	0	*400*	0	*102*	*50-130*	0			
Surr: 13C4-PFHpA	*381.6*	0	*400*	0	*95.4*	*50-130*	0			
Surr: 13C4-PFOA	*426.9*	0	*400*	0	*107*	*70-130*	0			
Surr: 13C5-PFNA	*381.6*	0	*400*	0	*95.4*	*70-130*	0			
Surr: 13C2-PFDA	*398.3*	0	*400*	0	*99.6*	*70-130*	0			
Surr: 13C2-PFUnA	*384.4*	0	*400*	0	*96.1*	*70-130*	0			
Surr: 13C2-PFDoA	*449*	0	*400*	0	*112*	*70-130*	0			
Surr: 13C2-PFTeA	*405.3*	0	*400*	0	*101*	*50-130*	0			
Surr: 13C3-PFBS	*366.6*	0	*400*	0	*91.6*	*50-130*	0			
Surr: 18O2-PFHxS	*365.9*	0	*378*	0	*96.8*	*70-130*	0			
Surr: 13C4-PFOS	*374.5*	0	*383*	0	*97.8*	*70-130*	0			
Surr: 13C2-FtS 4:2	*270.4*	0	*373*	0	*72.5*	*50-130*	0			

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

QC BATCH REPORT

Batch ID: **178178**	Instrument ID **LCMS1**		Method: **D7968-17a**				
Surr: 13C2-FtS 6:2	*306.9*	0	*380*	0	*80.8*	*50-130*	0
Surr: 13C2-FtS 8:2	*335.4*	0	*383*	0	*87.6*	*50-130*	0
Surr: 13C8-FOSA	*397.8*	0	*400*	0	*99.5*	*50-130*	0
Surr: d3-N-MeFOSAA	*394.1*	0	*400*	0	*98.5*	*50-130*	0
Surr: d5-N-EtFOSAA	*431.4*	0	*400*	0	*108*	*50-130*	0
Surr: 13C3-HFPO-DA	*389*	0	*400*	0	*97.3*	*50-130*	0

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178** Instrument ID **LCMS1** Method: **D7968-17a**

LCS3	Sample ID: **LCS3-178178-178178**				Units: **ng/Kg**			Analysis Date: **6/8/2021 02:55 PM**			
Client ID:		Run ID: **LCMS1_210608B**			SeqNo: **7470085**			Prep Date: **6/8/2021**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Perfluorobutanoic Acid (PFBA)	123.4	120	125	0	98.7	35-150	0			
Perfluoropentanoic Acid (PFPeA)	147.8	120	125	0	118	35-150	0			
Perfluorohexanoic Acid (PFHxA)	124.1	120	125	0	99.3	35-150	0			
Perfluoroheptanoic Acid (PFHpA)	127	120	125	0	102	35-150	0			
Perfluorooctanoic Acid (PFOA)	133.7	25	125	0	107	35-150	0			
Perfluorononanoic Acid (PFNA)	122.9	25	125	0	98.3	35-150	0			
Perfluorodecanoic Acid (PFDA)	126.8	120	125	0	101	35-150	0			
Perfluoroundecanoic Acid (PFUnA)	123.1	120	125	0	98.4	35-150	0			
Perfluorododecanoic Acid (PFDoA)	136	120	125	0	109	35-150	0			
Perfluorotridecanoic Acid (PFTriA)	124.3	120	125	0	99.4	35-150	0			
Perfluorotetradecanoic Acid (PFTeA)	154.1	120	125	0	123	35-150	0			
Perfluorobutanesulfonic Acid (PFBS)	103.1	25	110	0	93.8	35-150	0			
Perfluoropentanesulfonic Acid (PFPeS	117.8	25	118	0	99.8	35-150	0			
Perfluorohexanesulfonic Acid (PFHxS)	99.65	120	115	0	86.7	35-150	0			J
Perfluoroheptanesulfonic Acid (PFHpS	110.8	120	120	0	92.3	35-150	0			J
Perfluorooctanesulfonic Acid (PFOS)	99.76	25	115	0	86.7	35-150	0			
Perfluorononanesulfonic Acid (PFNS)	94.01	120	120	0	78.3	35-150	0			J
Perfluorodecanesulfonic Acid (PFDS)	121.9	25	120	0	102	35-150	0			
Fluorotelomer Sulphonic Acid 4:2 (FtS	122.6	120	118	0	104	35-150	0			
Fluorotelomer Sulphonic Acid 6:2 (FtS	136	120	118	0	115	35-150	0			
Fluorotelomer Sulphonic Acid 8:2 (FtS	121.3	120	120	0	101	35-150	0			
Perfluorooctanesulfonamide (PFOSA)	133.5	25	125	0	107	35-150	0			
N-Ethylperfluorooctanesulfonamidoace	136.3	120	125	0	109	35-150	0			
N-Methylperfluorooctanesulfonamidoa	117.8	120	125	0	94.3	35-150	0			J
11Cl-Pf3OUdS	110.3	25	118	0	93.4	35-150	0			
4,8-Dioxa-3H-perfluorononanoic Acid (	110.8	25	118	0	93.9	35-150	0			
9Cl-PF3ONS	110	25	118	0	93.2	35-150	0			
Hexafluoropropylene oxide dimer acid	136.7	120	125	0	109	35-150	0			
Surr: 13C4-PFBA	*395.1*	0	*400*	0	*98.8*	*50-130*	0			
Surr: 13C5-PFPeA	*410.5*	0	*400*	0	*103*	*50-130*	0			
Surr: 13C2-PFHxA	*435.8*	0	*400*	0	*109*	*50-130*	0			
Surr: 13C4-PFHpA	*398.4*	0	*400*	0	*99.6*	*50-130*	0			
Surr: 13C4-PFOA	*444.7*	0	*400*	0	*111*	*70-130*	0			
Surr: 13C5-PFNA	*406.9*	0	*400*	0	*102*	*70-130*	0			
Surr: 13C2-PFDA	*421.9*	0	*400*	0	*105*	*70-130*	0			
Surr: 13C2-PFUnA	*409.5*	0	*400*	0	*102*	*70-130*	0			
Surr: 13C2-PFDoA	*451.9*	0	*400*	0	*113*	*70-130*	0			
Surr: 13C2-PFTeA	*415.8*	0	*400*	0	*104*	*50-130*	0			
Surr: 13C3-PFBS	*382*	0	*400*	0	*95.5*	*50-130*	0			
Surr: 18O2-PFHxS	*374.7*	0	*378*	0	*99.1*	*70-130*	0			
Surr: 13C4-PFOS	*381.6*	0	*383*	0	*99.6*	*70-130*	0			
Surr: 13C2-FtS 4:2	*278.1*	0	*373*	0	*74.6*	*50-130*	0			

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **178178**	Instrument ID **LCMS1**		Method: **D7968-17a**				
Surr: 13C2-FtS 6:2	*337.8*	0	*380*	0	*88.9*	*50-130*	0
Surr: 13C2-FtS 8:2	*349.1*	0	*383*	0	*91.1*	*50-130*	0
Surr: 13C8-FOSA	*406.9*	0	*400*	0	*102*	*50-130*	0
Surr: d3-N-MeFOSAA	*424.8*	0	*400*	0	*106*	*50-130*	0
Surr: d5-N-EtFOSAA	*465*	0	*400*	0	*116*	*50-130*	0
Surr: 13C3-HFPO-DA	*381.6*	0	*400*	0	*95.4*	*50-130*	0

The following samples were analyzed in this batch: 21060817-01A

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

Client: City of Gladstone WWTP
Work Order: 21060817
Project: Sludge Analyses

QC BATCH REPORT

Batch ID: **R319558** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **MB-R319558-R319558** Units: **% of sample** Analysis Date: **6/10/2021 02:53 PM**
Client ID: Run ID: **MOIST_210610B** SeqNo: **7479072** Prep Date: DF: **1**

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

LCS Sample ID: **LCS-R319558-R319558** Units: **% of sample** Analysis Date: **6/10/2021 02:53 PM**
Client ID: Run ID: **MOIST_210610B** SeqNo: **7479073** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	99.99	0.10	100	0	100	98-102	0			

DUP Sample ID: **21060698-11B DUP** Units: **% of sample** Analysis Date: **6/10/2021 02:53 PM**
Client ID: Run ID: **MOIST_210610B** SeqNo: **7479084** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	7.8	0.10	0	0	0	0-0	7.72	1.03	10	

DUP Sample ID: **21060817-01B DUP** Units: **% of sample** Analysis Date: **6/10/2021 02:53 PM**
Client ID: **35286 Digested Sludge** Run ID: **MOIST_210610B** SeqNo: **7479089** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	95.88	0.10	0	0	0	0-0	96.23	0.364	10	

The following samples were analyzed in this batch: 21060817-01B

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

Cincinnati, OH +1 513 733 5336
Everett, WA +1 425 356 2600
Fort Collins, CO +1 970 490 1511
Holland, MI +1 616 399 6070
Houston, TX +1 281 530 5656
Middletown, PA +1 717 944 5541
Spring City, PA +1 610 948 4903
Salt Lake City, UT +1 801 266 7700
South Charleston, WV +1 304 356 3168
York, PA +1 717 505 5280

Chain of Custody Form

Page _____ of _____

COC ID: 230820

ALS Project Manager: | ALS Work Order #: 21660817

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name		A	PFAS
Work Order		Project Number		B	
Company Name	City of Gladstone WWTP	Bill To Company	City of Gladstone WWTP	C	
Send Report To	Rodney Schwartz	Invoice Attn		D	
Address	1100 Delta Avenue	Address	1100 Delta Avenue	E	
				F	
City/State/Zip	Gladstone, MI 49878	City/State/Zip	Gladstone, MI 49878	G	
Phone	(906) 428-1757	Phone	(906) 428-1757	H	
Fax	(906) 428-3122	Fax	(906) 428-3122	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	35286 Digested Sludge	6-7-21	1:00pm				X										
2	35286 Digested Sludge	6-7-21	1:00pm				X										
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Jason Swanson Jason Swanson

Shipment Method: UPS

Required Turnaround Time: (Check Box) ☐ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

Relinquished by: Jason Swanson	Date: 6-7-21	Time: 1:30pm	Received by: UPS	
Relinquished by: UPS	Date: 6/8/21	Time: 1000	Received by (Laboratory):	
Logged by (Laboratory): Ke	Date: 6/8/21	Time: 1555	Checked by (Laboratory):	

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 9-5035

Notes:

Cooler ID	Cooler Temp.
121	5.8°C

QC Package: (Check One Box Below)
- ☑ Level II Std QC
- ☐ Level III Std QC/Raw Data
- ☐ Level IV SW846/CLP
- ☐ Other
- ☐ TRRP CheckList
- ☐ TRRP Level IV

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

5.8°C

Custody Seal

http: /www.alsglobal.com

ALS Environmental
3352 128th Avenue
Holland, Michigan 49424-9263
Phone: 616-399-6070
Attn: Sample Receiving

Company: City of Gladstone
Name: Lesha Swanson
Date: 6-7-21

CITY OF GLADSTONE
(906) 428-1701
1100 DELTA AVE
GLADSTONE MI 49837-1434

7 LBS 1 OF 1
SHP WT: 7 LBS
DATE: 07 JUN 2021
AH

SHIP ALS GROUP USA CORP
TO: 3352 128TH AVE

HOLLAND MI 49424-9263

MI 495 9-04

UPS NEXT DAY AIR 1

TRACKING #: 1Z 746 W68 01 7418 4396

BILLING: P/P

ISH 13.80F ZZP 450 45.5A 04/2021

ALS Group, USA

Sample Receipt Checklist

Client Name: **GLADWWTP** Date/Time Received: **08-Jun-21 10:00**

Work Order: **21060817** Received by: **KRW**

Checklist completed by Keith Wierenga (eSignature) 08-Jun-21 (Date) Reviewed by: Bill Carey (eSignature) 09-Jun-21 (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):	5.8/5.8 C	IR1	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	6/8/2021 3:56:02 PM		
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: