

## ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC  
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Lancaster, PA 17601  
Tel: (717)656-2300

Laboratory Job ID: 410-10191-1  
Client Project/Site: PSU Airport R20-0340.000.07

For:  
Skelly & Loy Inc  
449 Eisenhower Blvd.  
Suite 300  
Harrisburg, Pennsylvania 17111

Attn: Doug Hess



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Authorized for release by:  
8/18/2020 8:13:59 PM

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*Results relate only to the items tested and the sample(s) as received by the laboratory.*



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Mary Kate Izzo  
Project Manager  
8/18/2020 8:13:59 PM

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# Definitions/Glossary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

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## Job ID: 410-10191-1

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Laboratory: Eurofins Lancaster Laboratories Env, LLC

### Narrative

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**Job Narrative**  
**410-10191-1**

### Receipt

The sample was received on 8/7/2020 5:33 PM; the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.2°C

### LCMS

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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# Detection Summary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

**Client Sample ID: GAT**

**Lab Sample ID: 410-10191-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	16		1.7	0.43	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	100		1.7	0.43	ng/L	1		537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

# Client Sample Results

Client: Skelly & Loy Inc  
 Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

**Client Sample ID: GAT**

**Lab Sample ID: 410-10191-1**

**Date Collected: 08/06/20 11:10**

**Matrix: Water**

**Date Received: 08/07/20 17:33**

**Method: 537 IDA - EPA 537 Isotope Dilution**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid	16		1.7	0.43	ng/L		08/10/20 09:34	08/11/20 13:39	1
Perfluorooctanesulfonic acid	100		1.7	0.43	ng/L		08/10/20 09:34	08/11/20 13:39	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	96		49 - 127				08/10/20 09:34	08/11/20 13:39	1
13C8 PFOS	75		49 - 126				08/10/20 09:34	08/11/20 13:39	1

# Isotope Dilution Summary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

**Method: 537 IDA - EPA 537 Isotope Dilution**

**Matrix: Water**

**Prep Type: Total/NA**

## Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	C8PFOA (49-127)	C8PFOS (49-126)
410-10191-1	GAT	96	75
LCS 410-31308/2-A	Lab Control Sample	92	94
LCSD 410-31308/3-A	Lab Control Sample Dup	119	124
MB 410-31308/1-A	Method Blank	105	109

### Surrogate Legend

C8PFOA = 13C8 PFOA

C8PFOS = 13C8 PFOS



# QC Sample Results

Client: Skelly & Loy Inc  
 Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

## Method: 537 IDA - EPA 537 Isotope Dilution

**Lab Sample ID: MB 410-31308/1-A**  
**Matrix: Water**  
**Analysis Batch: 31805**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 31308**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid	ND		2.0	0.50	ng/L		08/10/20 09:34	08/11/20 10:46	1
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		08/10/20 09:34	08/11/20 10:46	1
Isotope Dilution	MB	MB	Limits			D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
13C8 PFOA	105		49 - 127				08/10/20 09:34	08/11/20 10:46	1
13C8 PFOS	109		49 - 126				08/10/20 09:34	08/11/20 10:46	1

**Lab Sample ID: LCS 410-31308/2-A**  
**Matrix: Water**  
**Analysis Batch: 31805**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 31308**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid	24.5	23.9		ng/L		98	51 - 126
Isotope Dilution	LCS	LCS	Limits				
	%Recovery	Qualifier					
13C8 PFOA	92		49 - 127				
13C8 PFOS	94		49 - 126				

**Lab Sample ID: LCSD 410-31308/3-A**  
**Matrix: Water**  
**Analysis Batch: 31805**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 31308**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
								RPD	Limit
Perfluorooctanoic acid	25.6	30.0		ng/L		117	65 - 136	3	30
Perfluorooctanesulfonic acid	24.5	23.9		ng/L		97	51 - 126	0	30
Isotope Dilution	LCSD	LCSD	Limits						
	%Recovery	Qualifier							
13C8 PFOA	119		49 - 127						
13C8 PFOS	124		49 - 126						

# QC Association Summary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

## LCMS

### Prep Batch: 31308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10191-1	GAT	Total/NA	Water	537 IDA	
MB 410-31308/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-31308/2-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-31308/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

### Analysis Batch: 31805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-10191-1	GAT	Total/NA	Water	537 IDA	31308
MB 410-31308/1-A	Method Blank	Total/NA	Water	537 IDA	31308
LCS 410-31308/2-A	Lab Control Sample	Total/NA	Water	537 IDA	31308
LCSD 410-31308/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	31308



# Lab Chronicle

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

**Client Sample ID: GAT**

**Lab Sample ID: 410-10191-1**

**Date Collected: 08/06/20 11:10**

**Matrix: Water**

**Date Received: 08/07/20 17:33**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537 IDA			31308	08/10/20 09:34	NF	ELLE
Total/NA	Analysis	537 IDA		1	31805	08/11/20 13:39	MT26	ELLE

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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# Accreditation/Certification Summary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

## Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Pennsylvania	NELAP	36-00037	01-31-21

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# Method Summary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

Method	Method Description	Protocol	Laboratory
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



# Sample Summary

Client: Skelly & Loy Inc  
Project/Site: PSU Airport R20-0340.000.07

Job ID: 410-10191-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-10191-1	GAT	Water	08/06/20 11:10	08/07/20 17:33	

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# Login Sample Receipt Checklist

Client: Skelly & Loy Inc

Job Number: 410-10191-1

**Login Number: 10191**

**List Source: Eurofins Lancaster Laboratories Env**

**List Number: 1**

**Creator: Foreman, Leah M**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ( $\leq 6^{\circ}\text{C}$ , not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	N/A	