

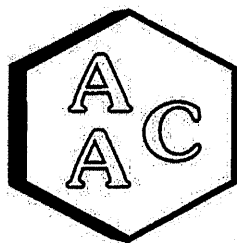
# **Volatile Organic Compound Analysis Results for Samples Collected in Nuiqsut, Alaska**

Sample Location: Nuiqsut Ambient Air Quality Monitoring Station

Date Sample Collected: 3/16/2022

Analysis Conducted by: Atmospheric Analysis & Consulting, Inc.

Analysis Method: EPA Method TO-12/PAMS Protocol by GC/MS/FID



## Atmospheric Analysis & Consulting, Inc.

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CLIENT : SLR International Corporation  
PROJECT NAME : CD1 Incident Management  
PROJECT NO. : 105.00006.22009/0300  
AAC PROJECT NO. : 220569  
REPORT DATE : 03/21/2022

On March 18, 2022, Atmospheric Analysis & Consulting, Inc. received two (2) Six-Liter Silonite Canisters for hydrocarbons analysis (C<sub>2</sub>-C<sub>12</sub>) by EPA method TO-12M/PAMS Protocol by GC/MS/FID. Upon receipt, each sample was assigned a unique Laboratory ID number as follows:

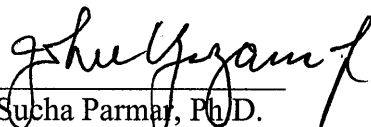
Client ID	Lab No.	Receipt Pressure (mmHg)
NUI	220569-29142	668.0
NUI DUP	220569-29143	658.0

**This analysis is performed in accordance with AAC's Quality Manual.** Test results apply to the sample(s) as received. For detailed information pertaining to specific EPA, NCASI, ASTM and SCAQMD methods & analytes, please visit our website at [www.aaclab.com](http://www.aaclab.com).

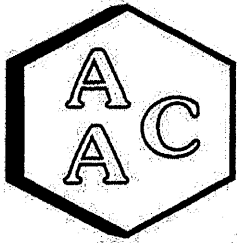
I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples.

The Technical Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy report.

If you have any questions or require further explanation of data results, please contact the undersigned.

  
\_\_\_\_\_  
Sucha Parmar, Ph.D.  
Technical Director

This report consists of 7 pages.



# Atmospheric Analysis & Consulting, Inc.

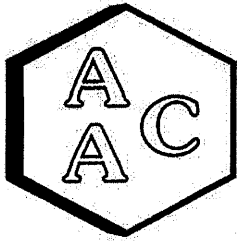
## Laboratory Analysis Report

**CLIENT** : SLR International Corporation  
**PROJECT NO** : 220569  
**MATRIX** : AIR  
**UNITS** : ppb (v/v)

**DATE RECEIVED** : 03/18/2022  
**DATE REPORTED** : 03/21/2022

### HYDROCARBONS (C2-C12) SPECIATED

Client ID AAC ID	NUI 220569-29142			Sample Reporting Limit (SRL) (MRLxDFs)	NUI DUP 220569-29143			Sample Reporting Limit (SRL) (MRLxDFs)	Method Reporting Limit (MRL)
Date Sampled	03/16/2022				03/16/2022				
Date Analyzed	03/18/2022				03/18/2022				
Can Dilution Factor	1.54				1.55				
	Result	Qualifier	Analysis DF		Result	Qualifier	Analysis DF		
Ethylene	<SRL	U	1	0.77	<SRL	U	1	0.78	0.50
Acetylene	<SRL	U	1	0.77	<SRL	U	1	0.78	0.50
Ethane	15.9		1	0.77	4.88		1	0.78	0.50
Propylene	<SRL	U	1	0.51	<SRL	U	1	0.52	0.33
Propane	1.51		1	0.51	1.29		1	0.52	0.33
Isobutane	<SRL	U	1	0.38	<SRL	U	1	0.39	0.25
1-Butene	<SRL	U	1	0.38	<SRL	U	1	0.39	0.25
n-Butane	<SRL	U	1	0.38	<SRL	U	1	0.39	0.25
trans-2-Butene	<SRL	U	1	0.38	<SRL	U	1	0.39	0.25
cis-2-Butene	<SRL	U	1	0.38	<SRL	U	1	0.39	0.25
Isopentane	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
1-Pentene	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
n-Pentane	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
Isoprene	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
trans-2-Pentene	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
cis-2-Pentene	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
2,2-Dimethylbutane	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
Cyclopentane	<SRL	U	1	0.31	<SRL	U	1	0.31	0.20
2,3-Dimethylbutane	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
2-Methylpentane	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
3-Methylpentane	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
1-Hexene	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
n-Hexane	0.61		1	0.26	0.28		1	0.26	0.17
Methylcyclopentane	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
2,4-Dimethylpentane	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14
Benzene	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
Cyclohexane	<SRL	U	1	0.26	<SRL	U	1	0.26	0.17
2-Methylhexane	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14
2,3-Dimethylpentane	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14
3-Methylhexane	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14
2,2,4-Trimethylpentane	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13
n-Heptane	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14
Methylcyclohexane	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14
2,3,4-Trimethylpentane	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13



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## Laboratory Analysis Report

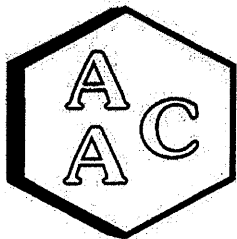
**CLIENT** : SLR International Corporation  
**PROJECT NO** : 220569  
**MATRIX** : AIR  
**UNITS** : ppb (v/v)

**DATE RECEIVED** : 03/18/2022  
**DATE REPORTED** : 03/21/2022

### HYDROCARBONS (C2-C12) SPECIATED

Client ID AAC ID	NUI			Sample Reporting Limit (SRL) (MRLxDFs)	NUI DUP			Sample Reporting Limit (SRL) (MRLxDFs)	Method Reporting Limit (MRL)	
	Date Sampled	Date Analyzed	Can Dilution Factor		220569-29142	03/16/2022	03/18/2022			220569-29143
		Result	Qualifier	Analysis DF			Result	Qualifier	Analysis DF	
		1.54			1.55					
Toluene	<SRL	U	1	0.22	<SRL	U	1	0.22	0.14	
2-Methylheptane	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
3-Methylheptane	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
n-Octane	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
Ethylbenzene	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
m/p-Xylenes	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
Styrene	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
o-Xylene	<SRL	U	1	0.19	<SRL	U	1	0.19	0.13	
Nonane	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
Isopropylbenzene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
n-Propylbenzene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
m-Ethyltoluene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
p-Ethyltoluene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
1,3,5-Trimethylbenzene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
o-Ethyltoluene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
1,2,4-Trimethylbenzene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
n-Decane	<SRL	U	1	0.15	<SRL	U	1	0.16	0.10	
1,2,3-Trimethylbenzene	<SRL	U	1	0.17	<SRL	U	1	0.17	0.11	
m-Diethylbenzene	<SRL	U	1	0.15	<SRL	U	1	0.16	0.10	
p-Diethylbenzene	<SRL	U	1	0.15	<SRL	U	1	0.16	0.10	
n-Undecane	<SRL	U	1	0.14	<SRL	U	1	0.14	0.09	
n-Dodecane	<SRL	U	1	0.13	<SRL	U	1	0.13	0.08	

U - Compound was analyzed for, but was not detected at or above the SRL.



# Atmospheric Analysis & Consulting, Inc.

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## Quality Control/Quality Assurance Report PAMS Calibration Verification Analysis

Initial Calibration Date : 02/11/2022  
Standard ID : MS1-020922-01

Instrument ID : MS01  
Analysis Date : 03/14/2022  
Analyst : RB

### Continuing Calibration Verification

Propane	xRF	Daily RF	RPD*
	698	691	1.04

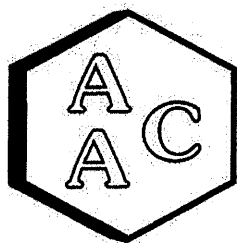
\* Must be <10%

### Laboratory Control Spike (LCS) / Laboratory Control Spike Duplicate (LCSD)

Propane	Sample Conc. (ppbC)	Spike Added (ppbC)	Recovery (ppbC)		% Recovery**		RPD***
			LCS	LCSD	LCS	LCSD	
	0.00	4.24	4.19	4.18	98.8	98.6	0.24

\*\* Must be 80-120%

\*\*\* Must be <25%



# Atmospheric Analysis & Consulting, Inc

## Quality Control/Quality Assurance Report

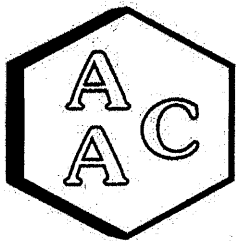
### PAMS Method Blank Analysis

Matrix : Air  
Units : ppbC

Instrument ID : MS01  
Analysis Date : 03/14/2022  
Analyst : RB

Analyte	Result	PQL
Ethylene	<PQL	1.0
Acetylene	<PQL	1.0
Ethane	<PQL	1.0
Propylene	<PQL	1.0
Propane	<PQL	1.0
Isobutane	<PQL	1.0
1-Butene	<PQL	1.0
n-Butane	<PQL	1.0
trans-2-Butene	<PQL	1.0
cis-2-Butene	<PQL	1.0
Isopentane	<PQL	1.0
1-Pentene	<PQL	1.0
n-Pentane	<PQL	1.0
Isoprene	<PQL	1.0
trans-2-Pentene	<PQL	1.0
cis-2-Pentene	<PQL	1.0
2,2-Dimethylbutane	<PQL	1.0
Cyclopentane	<PQL	1.0
2,3-Dimethylbutane	<PQL	1.0
2-Methylpentane	<PQL	1.0
3-Methylpentane	<PQL	1.0
1-Hexene	<PQL	1.0
n-Hexane	<PQL	1.0
Methylcyclopentane	<PQL	1.0
2,4-Dimethylpentane	<PQL	1.0
Benzene	<PQL	1.0
Cyclohexane	<PQL	1.0
2-Methylhexane	<PQL	1.0
2,3-Dimethylpentane	<PQL	1.0
3-Methylhexane	<PQL	1.0
2,2,4-Trimethylpentane	<PQL	1.0
n-Heptane	<PQL	1.0
Methylcyclohexane	<PQL	1.0
2,3,4-Trimethylpentane	<PQL	1.0

Analyte	Result	PQL
Toluene	<PQL	1.0
2-Methylheptane	<PQL	1.0
3-Methylheptane	<PQL	1.0
n-Octane	<PQL	1.0
Ethylbenzene	<PQL	1.0
m/p-Xylenes	<PQL	1.0
Styrene	<PQL	1.0
o-Xylene	<PQL	1.0
Nonane	<PQL	1.0
Isopropylbenzene	<PQL	1.0
n-Propylbenzene	<PQL	1.0
m-Ethyltoluene	<PQL	1.0
p-Ethyltoluene	<PQL	1.0
1,3,5-Trimethylbenzene	<PQL	1.0
o-Ethyltoluene	<PQL	1.0
1,2,4-Trimethylbenzene	<PQL	1.0
n-Decane	<PQL	1.0
1,2,3-Trimethylbenzene	<PQL	1.0
m-Diethylbenzene	<PQL	1.0
p-Diethylbenzene	<PQL	1.0
n-Undecane	<PQL	1.0
n-Dodecane	<PQL	1.0
TNMHC (ppbC)	<PQL	20



# Atmospheric Analysis & Consulting, Inc

## Quality Control/Quality Assurance Report PAMS Duplicate Analysis

AAC ID : 220507-28820

Matrix : Air

Units : ppbC

Instrument ID : MS01

Analysis Date : 03/14/2022

Analyst : RB

Analyte	Sample Analysis	Sample Duplicate	RPD
Ethylene	<PQL	<PQL	NA
Acetylene	<PQL	<PQL	NA
Ethane	4.69	5.25	11
Propylene	<PQL	<PQL	NA
Propane	2.79	2.96	5.9
Isobutane	<PQL	<PQL	NA
1-Butene	<PQL	<PQL	NA
n-Butane	<PQL	<PQL	NA
trans-2-Butene	<PQL	<PQL	NA
cis-2-Butene	<PQL	<PQL	NA
Isopentane	<PQL	<PQL	NA
1-Pentene	<PQL	<PQL	NA
n-Pentane	<PQL	<PQL	NA
Isoprene	<PQL	<PQL	NA
trans-2-Pentene	<PQL	<PQL	NA
cis-2-Pentene	<PQL	<PQL	NA
2,2-Dimethylbutane	<PQL	<PQL	NA
Cyclopentane	<PQL	<PQL	NA
2,3-Dimethylbutane	<PQL	<PQL	NA
2-Methylpentane	<PQL	<PQL	NA
3-Methylpentane	<PQL	<PQL	NA
1-Hexene	<PQL	<PQL	NA
n-Hexane	<PQL	<PQL	NA
Methylcyclopentane	<PQL	<PQL	NA
2,4-Dimethylpentane	<PQL	<PQL	NA
Benzene	<PQL	<PQL	NA
Cyclohexane	<PQL	<PQL	NA
2-Methylhexane	<PQL	<PQL	NA
2,3-Dimethylpentane	<PQL	<PQL	NA
3-Methylhexane	<PQL	<PQL	NA
2,2,4-Trimethylpentane	<PQL	<PQL	NA
n-Heptane	<PQL	<PQL	NA
Methylcyclohexane	<PQL	<PQL	NA
2,3,4-Trimethylpentane	<PQL	<PQL	NA
Toluene	<PQL	<PQL	NA
2-Methylheptane	<PQL	<PQL	NA
3-Methylheptane	<PQL	<PQL	NA
n-Octane	<PQL	<PQL	NA
Ethylbenzene	<PQL	<PQL	NA
m/p-Xylenes	<PQL	<PQL	NA
Styrene	<PQL	<PQL	NA
o-Xylene	<PQL	<PQL	NA
Nonane	<PQL	<PQL	NA
Isopropylbenzene	<PQL	<PQL	NA
n-Propylbenzene	<PQL	<PQL	NA
m-Ethyltoluene	<PQL	<PQL	NA
p-Ethyltoluene	<PQL	<PQL	NA

Analyte	Sample Analysis	Sample Duplicate	RPD
1,3,5-Trimethylbenzene	<PQL	<PQL	NA
o-Ethyltoluene	<PQL	<PQL	NA
1,2,4-Trimethylbenzene	<PQL	<PQL	NA
n-Decane	<PQL	<PQL	NA
1,2,3-Trimethylbenzene	<PQL	<PQL	NA
m-Diethylbenzene	<PQL	<PQL	NA
p-Diethylbenzene	<PQL	<PQL	NA
n-Undecane	<PQL	<PQL	NA
n-Dodecane	<PQL	<PQL	NA
Total PAMS (ppbC)	7.47	8.20	9.3
TNMHC (ppbC)	30.6	34.9	13