



ANALYTICAL REPORT

Amended-20210129

Report Date: January 29, 2021

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Workorder: **34-2100925**

Client Project ID: Yorke Engineering
Purchase Order: NA
Project Manager: Paul Pope

Analytical Results

Sample ID: FS-55 QFF 520 08	Collected: 01/06/2021
Lab ID: 2100925001	Received: 01/09/2021
Method: NIOSH 7300 Mod., Air	Media: Quartz Fiber Filter
	Instrument: ICP13
	Prepared: 01/15/2021 (273899)
	Analyzed: 01/18/2021 (273967)
	Sampling Location: Yorke Engineering
	Sampling Parameter: Air Volume 1832180 L

Analyte	Result (ug/sample)	Result (mg/m³)	RL (ug/sample)
Aluminum	770	0.00042	240
Arsenic	<120	<0.000065	120
Barium	65	0.000035	12
Beryllium	<0.60	<0.00000033	0.60
Cadmium	<3.6	<0.0000020	3.6
Calcium	1400	0.00078	720
Chromium	<60	<0.000033	60
Cobalt	<10	<0.0000056	10
Copper	560	0.00031	24
Iron	1400	0.00074	240
Lead	<24	<0.000013	24
Lithium	<48	<0.000026	48
Magnesium	490	0.00027	60
Manganese	22	0.000012	6.0
Molybdenum	19	0.000010	18
Nickel	<6.0	<0.0000033	6.0
Phosphorus	<240	<0.00013	240
Selenium	<120	<0.000065	120
Silver	<12	<0.0000065	12
Sodium	1500	0.00081	180
Tellurium	<60	<0.000033	60
Thallium	<60	<0.000033	60
Titanium	60	0.000033	3.6
Vanadium	<3.6	<0.0000020	3.6
Yttrium	<3.6	<0.0000020	3.6
Zinc	110	0.000061	24

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		Sampling Parameter: Air Volume 1832180 L	Prepared: 01/15/2021 (273899)
			Analyzed: 01/18/2021 (273967)
Analyte	Result (ug/sample)	Result (mg/m ³)	RL (ug/sample)
Zirconium	<24	<0.000013	24
Method: Total Suspended Particulates		Media: Quartz Fiber Filter	Instrument: GRAV04
		Sampling Parameter: Air Volume 1832180 L	Analyzed: 01/14/2021 (273841)
Analyte	Result (mg/sample)	Result (mg/m ³)	RL (mg/sample)
Total Suspended Particulate	50	0.027	8.0

Sample ID: Rattlesnake QFF 520 07		Collected: 01/06/2021	
Lab ID: 2100925002		Received: 01/09/2021	
Method: NIOSH 7300 Mod., Air		Media: Quartz Fiber Filter	Instrument: ICP13
		Sampling Parameter: Air Volume 1827490 L	Prepared: 01/15/2021 (273899)
			Analyzed: 01/18/2021 (273967)
Analyte	Result (ug/sample)	Result (mg/m ³)	RL (ug/sample)
Aluminum	790	0.00043	240
Arsenic	<120	<0.000066	120
Barium	87	0.000048	12
Beryllium	<0.60	<0.00000033	0.60
Cadmium	<3.6	<0.0000020	3.6
Calcium	2000	0.0011	720
Chromium	<60	<0.000033	60
Cobalt	<10	<0.0000056	10
Copper	320	0.00017	24
Iron	1900	0.0010	240
Lead	<24	<0.000013	24
Lithium	<48	<0.000026	48
Magnesium	570	0.00031	60
Manganese	33	0.000018	6.0
Molybdenum	<18	<0.0000098	18
Nickel	<6.0	<0.0000033	6.0
Phosphorus	<240	<0.00013	240
Selenium	<120	<0.000066	120
Silver	<12	<0.0000066	12
Sodium	1300	0.00070	180
Tellurium	<60	<0.000033	60
Thallium	<60	<0.000033	60
Titanium	81	0.000044	3.6
Vanadium	<3.6	<0.0000020	3.6

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Workorder: **34-2100925**

Client Project ID: Yorke Engineering

Purchase Order: NA

Project Manager: Paul Pope

Analytical Results

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Lab ID: 2100925002		Received: 01/09/2021	
Method: NIOSH 7300 Mod., Air		Media: Quartz Fiber Filter	Instrument: ICP13
		Sampling Parameter: Air Volume 1827490 L	Prepared: 01/15/2021 (273899)
			Analyzed: 01/18/2021 (273967)
Analyte	Result (ug/sample)	Result (mg/m ³)	RL (ug/sample)
Yttrium	<3.6	<0.000020	3.6
Zinc	120	0.000067	24
Zirconium	<24	<0.000013	24
Method: Total Suspended Particulates		Media: Quartz Fiber Filter	Instrument: GRAV04
		Sampling Parameter: Air Volume 1827490 L	Analyzed: 01/14/2021 (273841)
Analyte	Result (mg/sample)	Result (mg/m ³)	RL (mg/sample)
Total Suspended Particulate	75	0.041	8.0

Comments

Workorder: 2100925

NIOSH 7300 Mod: The results for quartz fiber filter field samples were calculated according to 40 CFR Pt. 50, App. G modified for QFF filters and Panel B metals. There are 12 strips per sample. A single strip of each sample was digested and analyzed for Panel B metals so a factor 12 was placed in the dilution field in Horizon for these samples to calculate total sample result.

Amended(01/29/2021): Correct Air Volumes

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
NIOSH 7300 Mod., Air	/S/ Peter P. Steen 01/18/2021 14:21	/S/ Kristie F. Bitner 01/18/2021 16:38
Total Suspended Particulates	/S/ Brian S. Stites 01/14/2021 16:01	/S/ Karley Neilson 01/14/2021 16:48

Laboratory Contact Information

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General Lab Comments

The results provided in this report relate only to the items tested.

Samples were received in acceptable condition unless otherwise noted.

The following was provided by the client: Sample ID, Collection Date, Sampling Location, Media Type, Sampling Parameter.

Collection Date, Media Type, and Sampling Parameter can potentially affect the validity of the results.

Samples have not been blank corrected unless otherwise noted.

This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body (Standard)	Certificate Number	Website
Environmental	PJLA (DoD ELAP)	L20-57	http://www.pjlabs.com
	PJLA (ISO 17025)	L20-58	http://www.pjlabs.com
Industrial Hygiene	AIHA (ISO 17025 & AIHA IHLAP)	101574	http://www.aihaaccreditedlabs.org
	DOECAP-AP	L20-59	http://www.pjlabs.com
	Washington	C596	https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Laboratory-Accreditation
Dietary Supplements	PJLA (ISO 17025)	L20-58	http://www.pjlabs.com

Definitions

LOD = Limit of Detection = MDL = Method Detection Limit, A statistical estimate of method/media/instrument sensitivity.

LOQ = Limit of Quantitation = RL = Reporting Limit, A verified value of method/media/instrument sensitivity.

ND = Not Detected, Testing result not detected above the LOD or LOQ.

NA = Not Applicable.

** No result could be reported, see sample comments for details.

< Means this testing result is less than the numerical value.

() This testing result is between the LOD and LOQ and has higher analytical uncertainty than values at or above the LOQ.