Naval Facilities Engineering Systems Command Southwest
BRAC PMO West
San Diego, CA

AIR MONITORING SUMMARY REPORT 01 FOR PARCEL C RADIOLOGICAL CONFIRMATION SAMPLING AND SURVEY

HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA

December 5th through December 22nd, 2022

Approved for public release; distribution is unlimited

DCN: GESL-0005-5305-0064

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Prepared for:

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Contract Number: N62473-17-D-0005; Task Order No. N6247318F5305

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Acronyms and Abbreviations

AMSR ..... *Air Monitoring Summary Report*
ASRC ..... *Artic Slope Regional Corporation*
Cal/OSHA ..... *California Occupational Safety and Health Administration*
Cfm ..... *cubic feet per minute*
CFR ..... *Code of Federal Regulations*
CTO ..... *Contract Task Order*
DMAMP ..... *Dust Management and Air Monitoring Plan*
EPA ..... *United States Environmental Protection Agency*
fiber/cm3 ..... *fiber per cubic centimeter*
Gilbane ..... *Gilbane Federal*
HPNS ..... *Hunters Point Naval Shipyard*
L/min ..... *liters per minute*
mg/m3 ..... *milligrams per cubic meter*
Navy ..... *U.S. Department of the Navy*
NIOSH ..... *National Institute for Occupational Safety and Health*
PEL ..... *permissible exposure limit*
PM10 ..... *particulate matter less than 10 microns in diameter*
TSP ..... *total suspended particulates*
TWA ..... *time-weighted average*
µg/m3 ..... *micrograms per cubic meter*
WP ..... *work plan*

1.0 Introduction

This Air Monitoring Summary Report (AMSR) was prepared by GES as requested by the United States Department of the Navy (Navy) under Radiological Environmental Multiple Award Contract N62473-17-D-0005, Contract Task Order (CTO) N6247318F5305. GES is performing air monitoring at Hunters Point Naval Shipyard (HPNS) in accordance with the Final Dust Management and Air Monitoring Plan (DMAMP), included as Appendix E to *Final Work Plan Parcel C Removal Site Evaluation, Hunters Point Naval Shipyard, San Francisco, California* (WP; Gilbane, 2022). The DMAMP describes the procedures that minimize dust during work activities and requires air monitoring to ensure these procedures are effective. The methods and procedures detailed in the DMAMP help to prevent exposure of residents and construction crews to potential airborne chemicals of concern, and dust from the work area.

This summary report describes the following:

- Where and how air monitoring samples were collected.
- What test methods were used to analyze air monitoring samples.
- How air monitoring data were evaluated.

This AMSR summarizes the air monitoring activities conducted by GES at HPNS Parcel C from December 5th, 2022 and December 23rd, 2022 compares the results with the established action levels presented in the DMAMP (Appendix E of the WP [Gilbane, 2022]).

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2.0 Monitoring Site Locations

Air monitoring stations were deployed at one upwind and downwind location from the work area whenever active soil handling operations were in progress. Additional radiological air monitors may be placed within the daily work areas to monitor for worker health and safety. Based on past meteorological data, the prevalent wind direction at HPNS was from the west or west-southwest. The locations of Parcel C air monitoring stations are presented on **Figure 2-1**.

Air monitoring was performed to estimate and assess the impact of field activities. The locations of air monitoring stations were determined based on the prevailing wind direction and were modified as needed for accessibility and worker safety considerations. Wind direction was monitored daily using a windsock and confirmed with the prevalent wind direction recorded for the APTIM HPNS - KCASANFR1504 or Bayview Manor - KCASANFR1775 published at Weather Underground (www.wunderground.com).

Upwind/downwind station designations were assigned based on the prevalent wind direction. Atmospheric parameters were checked daily at www.wunderground.com (see **Attachment 1**). Monitoring stations remained stationary while sampling was conducted. Each monitoring station included four different monitoring systems:

1. Asbestos
2. Particulate matter less than 10 microns in diameter (PM10) and Metals (Lead and Manganese)
3. Total suspended particulates (TSP)
4. Radionuclides

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3.0 Analytical Methods

3.1 Asbestos

Air samples were sampled and analyzed in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400, from the NIOSH Manual of Analytical Methods (NIOSH, 1994). Method 7400 requires that samples be collected on three-piece cellulose ester filters fitted with conductive cowlings at a sampling rate of between 0.5 liters per minute (L/min) and 16 L/min. Each sample was collected over the course of a period not to exceed 25 hours and submitted to A&B Laboratories of Houston, TX for analysis. Asbestos results were reviewed for anomalies and compliance with the action levels listed below.

3.2 PM10, Lead and Manganese

Filter-based PM10 data are collected to ensure the protection of public health and safety during construction operations. Filter-based PM10 data are generated by sampling with calibrated air monitoring equipment that are operated continuously over the course of a period not to exceed 25 hours in accordance with the U.S. Environmental Protection Agency (EPA) reference sampling method for PM10 as described in Title 40 Code of Federal Regulations (CFR), Part 50, Subpart J (EPA, 1999a). During the sampling, measurements are taken to precisely calculate the volume of air that has passed through the filter media sample. The period sampled is dependent on the duration of the work activity. The sample is then shipped to Eurofins, West Sacramento, CA or Eurofins Environment Analytics, Ashland, VA for analysis. The concentration is gravimetrically determined. The sample results are reviewed for field and laboratory anomalies to provide confidence in the data and compared to air quality criteria to ensure compliance with the action levels listed below. In this way the precise amount of PM10 present in each cubic meter of air is determined.

Once the PM10 concentration was gravimetrically determined, the filter was analyzed for manganese and lead in accordance with EPA Method 6020 (equivalent to IO-3.5 in the Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air [EPA, 1999b]).

3.3 TSP

TSP samples were collected with a high-volume (39 to 60 cubic feet per minute [cfm]) air sampler in accordance with EPA's reference sampling method for TSP, described in 40 CFR 50, Subpart B. Each sample was collected on a filter over the course of a period not to exceed 25 hours (depending on the duration of the work activity). The sample is then shipped to Eurofins, West Sacramento, CA or Eurofins Environment Analytics, Ashland, VA for analysis. The filter was then weighed to determine the amount of TSP collected. The resulting concentration was compared to the HPNS Basewide level

listed below to minimize permissible dust releases from the site.

3.4 Radionuclides of Concern

Radiological air samples were collected on filter media with a LV-1 low-volume air sampler. The air filter concentration is counted onsite following a decay period and are compared with public air concentration limits published in 10 CFR Part 20. Radiological air sampling methods and procedures are detailed in Gilbane Radiological Procedure PR-RP-150 *Radiological Survey and Sampling* (Gilbane, 2019).

Perimeter samples for ROCs were analyzed at ARS Aleut Analytical, of Port Allen, LA by the radiological methods listed below.

- Gamma Spectroscopy by EPA Method 901.1
- Alpha Spectroscopy/Eichrom Resin Separation by HASL 300 Pu-02RC and Eichrom ACW10
- Alpha Emitting Isotopes by EPA Method 9315
- Gas Flow Proportional Counting/Eichrom Resin Separation by EPA 905.0

The calculated airborne concentration in microcuries per filter was then compared to the effluent concentration limit specified in Table 2 of Appendix B to 10 CFR 20. The effluent concentration of a given radionuclide is the minimum concentration in air which, if inhaled continuously over the course of a year, results in an exposure equal to the annual regulatory limit specified in 10 CFR 20.1302. The threshold for radiological effluent concentration in air samples is 10 percent of the effluent concentration, which ensures work practices are evaluated and modified as necessary to ensure the limit is not reached.

The equipment specifications and sampling procedures have complied with the specifications provided in the regulations for the sampler, filter media, accuracy, calibration, and quality assurance.

4.0 Air Monitoring Data Interpretation and Action Levels

To facilitate the comparison to project action levels, the delta between the upwind and downwind PM10 and TSP analytical results was calculated for detected values. Calculated negative values indicating that the upwind concentration was greater than the downwind concentration and non-detected values where no delta was calculated, are interpreted as acceptable.

The resulting deltas for PM10 and TSP and analytical data from air monitoring metals and radiological samples were compared with the threshold criteria listed in **Table 4-1** reproduced from Table 1; and radionuclide activities were compared to the airborne concentration action levels listed in Table 2 of the approved DMAMP (Appendix E of the WP [Gilbane, 2022]. The PM10 delta was additionally compared to the criterion taken from the *Final Basewide Dust Control Plan, Revision 1, Hunters Point Shipyard, San Francisco, California* (Tetra Tech EC, 2010) of 50 micrograms per cubic meter (ug/m^3).

Table 4-1: Air Monitoring Threshold Criteria

Test Parameter	Threshold Criteria	Threshold Criteria Reference
Asbestos	0.1 fiber/cm^3	Cal/OSHA PEL (on-site workers)
PM10[a]	50 µg/m^3	DTSC HERO developed action level (residents and public receptors)[a]
	5,000 µg/m^3	Cal/OSHA PEL (on-site workers)[b]
TSP	0.5 mg/m^3	Basewide HPNS Level selected to minimize overall permissible dust release from sites
Lead	0.050 mg/m^3	Cal/OSHA PEL (on-site workers)
Manganese	0.200 mg/m^3	Cal/OSHA PEL (on-site workers) 10 CFR, Part 20, Appendix B, Table 2 Column 1 adjusted from 50 mrem per year to maximum annual exposure of 10 mrem per year at the receptor (public receptor)[c]
Cesium-137	4.00E-11µCi/mL	
Plutonium-239	4.00E-15 µCi/mL	
Radium-226	1.80E-13 µCi/mL	
Strontium-90	1.20E-12 µCi/mL	
Cobalt-60	1.00E-11 µCi/mL	
Thorium-232	1.20E-15 µCi/mL	

Notes:

[a] = The DTSC HERO action level is based on the CSAAQS. The CSAAQS is designed to protect the general public from airborne particulates generated in the urban, suburban, and rural environments. The CSAAQS is not meant to be applied to general project-specific construction actions and related air quality. Rather, the standard is used to attain city- or regional-wide ambient air quality goals for the benefit of the general public. The current CSAAQS for PM10 is 50 µg/m3 average per 24-hour day. The City and County of San Francisco is currently a nonattainment area for the CSAAQS for PM10.

[b] = The Cal/OSHA PEL for particulates not otherwise regulated (respiratory) is used for PM10 comparison.

[c] = Results may be evaluated using 40 CFR Appendix E to Part 61 to demonstrate compliance with the National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

µCi/mL microcurie per milliliter

µg/m^3 = micrograms per cubic meter

Cal/OSHA = California Division of Occupational Safety and Health Administration

DTSC HERO = California Department of Toxic Substances Control, Human and Ecological Risk Office

fiber/cm^3 = fibers per cubic centimeter
HPNS = Hunters Point Naval Shipyard
mg/m^3 = milligrams per cubic meter
PEL = permissible exposure limit
PM10 = particulate matter less than 10 microns in diameter
TSP = total suspended particulates

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5.0 Air Monitoring Results

Weather information (including ambient pressure and temperature data) is presented in the table included as **Attachment 1**. Meteorological data for Stations 1 and 2 were sourced from the Weather Underground (wunderground.com) station APTIM HPNS - KCASANFR1504 and Bayview Manor - KCASANFR1775. **Table 5-1** displays each air monitoring report and the associated dates covered in the report.

Air monitoring results are presented in the following attachments:

- Asbestos – **Attachment 2**
- PM10 – **Attachment 3**
- Lead and Manganese – **Attachment 4**
- TSP – **Attachment 5**
- Radiological – **Attachment 6**

Laboratory reports are included as **Attachment 7** and were subjected to cursory review by the Project Chemist. Radiological data were qualified for low-level contamination below the required detection limit (RDL) in the field filter blanks, negative results, or for minimum detectable concentrations (MDCs) above the RDL. PM10 and metals had some data estimated due to low-level particulates collected on the field blank media. Data, as qualified are considered usable for their intended purposes.

Due to the nature of radiological laboratory analysis, radiological data will be presented as the contractor receives it. Ultimately the radiological results will be slightly delayed in comparison to the Asbestos, PM10, TSP, Lead, and Manganese results.

Table 5-1: Air Monitoring Report Summary

Air Monitoring Report Number	Data Date Range
01	12/05/22 – 12/22/22

5.1 Report 01

Air monitoring analytical results did not exceed project-specific screening criteria during this reporting period's site operations. The delta was taken by switching the upwind and downwind results due to the change in wind direction for sample end dates 12/15/22, 12/21/22, and 12/22/22.

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6.0 References

California Department of Toxic Substances Control (DTSC), 2021. Human and Ecological Risk Office (HERO) Memorandum, Dust Action Levels for Parcel C, Hunters Point Naval Shipyard, San Francisco, California, July.

National Institute for Occupational Safety and Health, (NIOSH), 1994. Manual of Analytical Methods.

United States Environmental Protection Agency (EPA), 1999a. Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods.

EPA, 1999b. Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air.

Gilbane Federal (Gilbane), 2019. *PR-RP-150* “Radiological Survey and Sampling”. November.

Gilbane, 2022. Final Parcel C Removal Site Evaluation Work Plan, Hunters Point Naval Shipyard, San Francisco, California. July

Tetra Tech EC, 2010, *Final Basewide Dust Control Plan, Revision 1, Hunters Point Shipyard, San Francisco, California*, November 29.

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FIGURES

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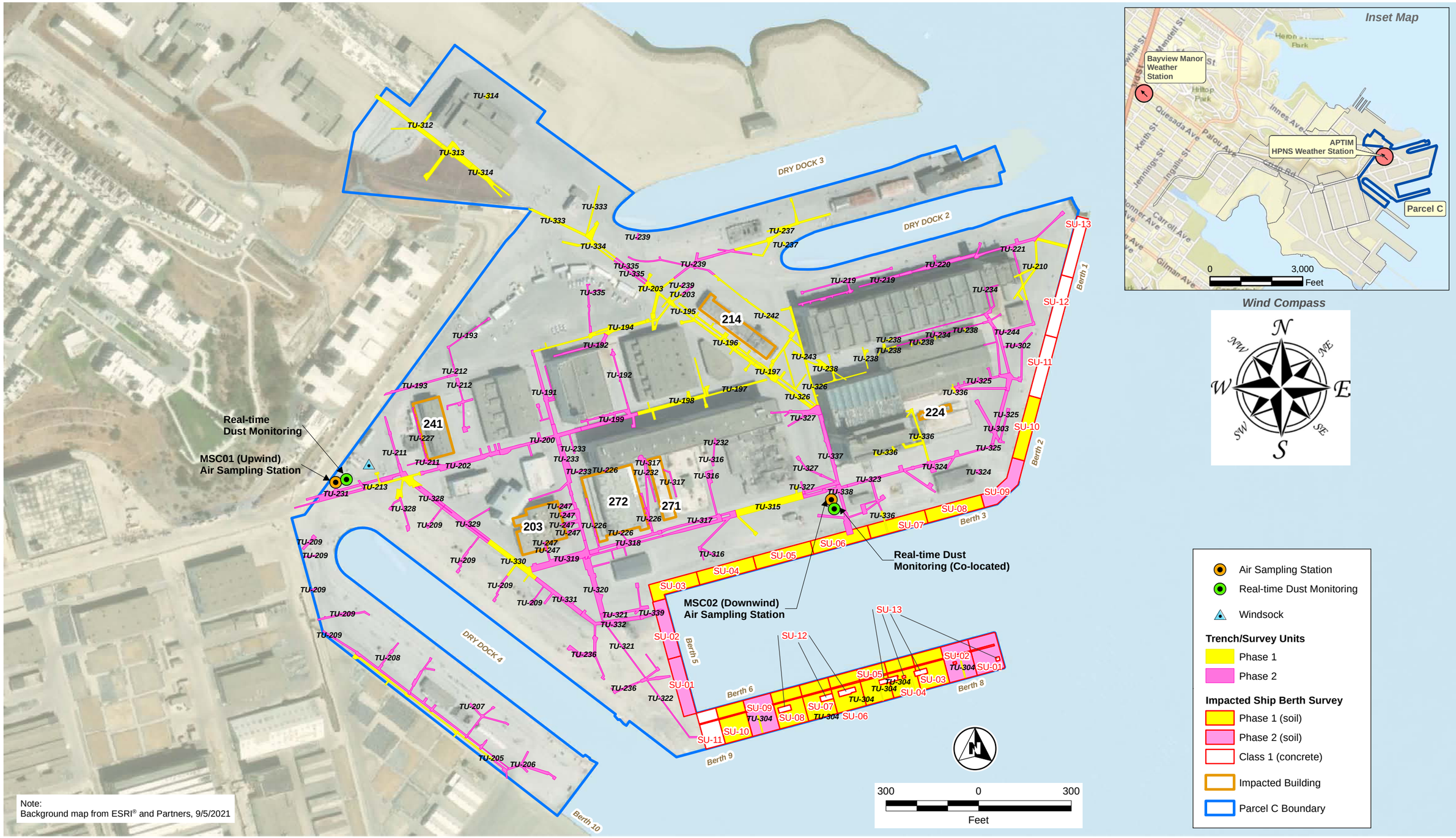

Removal Site Evaluation Work Plan
Radiological Investigation, Survey, and Reporting at Parcel C
Hunters Point Naval Shipyard
San Francisco, California

Figure 2-1
Air Sampling and Dust Monitoring Locations

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ATTACHMENT 1

AMBIENT PRESSURE, TEMPERATURE, AND PREVALENT WIND DIRECTION MONITORING RESULTS

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Attachment 1: Ambient Pressure, Temperature, and Prevalent Wind Direction Monitoring Results

Start Date	Ambient Pressure (in Hg)	Ambient Temperature (°F)	Prevalent Wind Direction
12/6/2022[1]	30.09	49.95	ESE
12/7/2022[1]	30.25	49.27	S
12/8/2022[1]	30.25	49.27	SSE
12/12/2022[1]	30.01	46.32	NNW
12/13/2022[1]	30.16	46.70	SE
12/14/2022[1]	30.21	46.47	NNE
12/19/2022[1]	30.30	44.40	NNW
12/20/2022[1]	30.31	48.36	E
12/21/2022[1]	30.20	50.77	N

Notes:

[1]Data collected using wunderground.com from Bayview Manor - KCASANFR1775

[2]Data collected using wunderground.com from APTIM HPNS - KCASANFR1504

°F = degree Fareheit

in Hg = inches of mercury

E = East

N = North

S = South

W = West

ATTACHMENT 2
ASBESTOS MONITORING RESULTS

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Attachment 2: Asbestos Monitoring Results

Sample, Date and Station Information			Sampler Run Information			Asbestos Fibers		
Sample ID	Sample End Date[1]	Monitoring Station	Ave Flow Rate (l/min)	Duration of Run (min)	Total Air Volume Monitored (L)	Asbestos (fibers)	Conc Asbestos (fibers/cm^3)	Exceedance (Yes/No)
MSC01-120622	12/07/22	1	3.7	1,334	4935	8.5	0.001	No
MSC02-120622	12/07/22	2	3.7	1,353	5006	9.0	0.001	No
MSC01-120722	12/08/22	1	3.5	1,443	5050	6.0	0.001	No
MSC02-120722	12/08/22	2	3.7	1,442	5335	3.0	< 0.001	No
MSC01-120822	12/08/22[2]	1	3.3	382	1260	5.0	< 0.002	No
MSC02-120822	12/08/22[2]	2	3.4	383	1302	3.0	< 0.002	No
MSC01-121222	12/13/22	1	3.6	1,435	5166	9.5	0.001	No
MSC02-121222	12/13/22	2	3.3	1,433	4728	5.5	0.001	No
MSC01-121322	12/14/22	1	3.5	1,454	5089.0	5.0	< 0.001	No
MSC02-121322	12/14/22	2	3.3	1,456	4804	5.5	0.001	No
MSC01-121422	12/15/22	1	3.6	1,434	5162	7.5	0.001	No
MSC02-121422	12/15/22	2	3.3	1,432	4725	4.0	< 0.001	No
MSC01-121922	12/20/22	1	3.6	1,439	5180	4.0	< 0.001	No
MSC02-121922	12/20/22	2	3.4	1,430	4862	0.5	< 0.001	No
MSC01-122022	12/21/22	1	3.7	1,430	5291	3.0	< 0.001	No
MSC02-122022	12/21/22	2	3.7	1,443	5339	4.5	< 0.001	No
MSC01-122122	12/22/22	1	3.7	1,446	5350	7.0	0.001	No
MSC02-122122	12/22/22	2	3.7	1,447	5353	8.0	0.001	No

Notes:

[1]Sample "end" date indicates the date upon which sample collection ended.

[2]Air sample was taken down during the afternoon after field activities ceased.

Sample locations are shown on Figure 2-1

l/min = liters per minute

L = liter

min = minutes

fibers/cm^3 = fibers per cubic centimeter

< = below detection limit

ATTACHMENT 3
PARTICULATE MATTER, SMALLER THAN TEN MICRONS

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Attachment 3: Particulate Matter, Smaller than Ten Microns (PM10) Monitoring Results

Sample, Date and Station Information			Sampler Run Information	PM10						
Sample ID	Monitoring Station	Sample End Date[1]	Total Air Volume Monitored (m^3)	Concentration in Air (mg/m^3)	PM10 Perimeter Concentration (Downwind - Upwind) (mg/m^3)	PM10 Perimeter Concentration (Downwind - Upwind) (ug/m^3)	Cal/OSHA PEL (ug/m^3)	Exceedance (Yes/No)	HERO Action Level[3] (ug/m^3)	Exceedance (Yes/No)[2]
GESPM101722-640	MSC01	12/7/22	1507.84	0.011	0.0040	4.000	5,000	No	50	No
GESPM101722-641	MSC02	12/7/22	1621.97	0.015						
GESPM101722-642	MSC01	12/8/22	1591.23	0.013	0	0.000	5,000	No	50	No
GESPM101722-643	MSC02	12/8/22	1712.70	0.013						
GESPM101722-644	MSC01	12/8/22[2]	442.87	0.014	0.005	5.000	5,000	No	50	No
GESPM101722-645	MSC02	12/8/22[2]	480.23	0.019						
GESPM101722-647	MSC01	12/13/22	1614.39	0.013	0.0030	3.000	5,000	No	50	No
GESPM101722-648	MSC02	12/13/22	1709.14	0.016						
GESPM101722-649	MSC01	12/14/22	1629.43	0.014	0.002	2.000	5,000	No	50	No
GESPM101722-650	MSC02	12/14/22	1729.85	0.016						
GESPM101722-651	MSC01	12/15/22	1635.44	0.024	0.002	2.000	5,000	No	50	No
GESPM101722-652	MSC02	12/15/22	1716.53	0.022						
PM113022-03	MSC01	12/20/22	1668.08	0.024 J+	0.001	1.000	5,000	No	50	No
PM113022-05	MSC02	12/20/22	1694.70	0.025 J+						
PM113022-07	MSC01	12/21/22	1698.07	0.030 J+	0.001	1.000	5,000	No	50	No
PM113022-09	MSC02	12/21/22	1704.09	0.029 J+						
PM113022-11	MSC01	12/22/22	1525.86	0.102 J+	0.0176	17.648	5,000	No	50	No
PM113022-13	MSC02	12/22/22	1619.58	0.085 J+						

Notes:

[1]Air sample was not collected on days with rain.

[2]PM10 data is additionally compared to the recommended dust action level of 50 ug/m3 for total PM10 in accordance with the DTSC Human and Ecological Risk Office (HERO) Parcel E Memorandum dated April 29, 2019 (DTSC, 2019) for informational purposes only.

[2]Air sample was taken down during the afternoon after field activities ceased.

Sample locations are shown on Figure 2-1

min = minutes

Cal/OSHA = California Division of Occupational Safety and Health

HERO = Human and Ecological Risk Office

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

J+ = estimated concentration biased high

ATTACHMENT 4
LEAD AND MANGANESE MONITORING RESULTS

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Attachment 4: Lead and Manganese Monitoring Results

Sample, Date and Station Information			Sampler Run Information	Lead		Manganese	
Sample ID	Monitoring Station	Sample End Date[1]	Total Air Volume Monitored (m^3)	Concentration in Air (mg/m^3)	Exceedance (Yes/No)	Concentration in Air (mg/m^3)	Exceedance (Yes/No)
GESPM101722-640	MSC01	12/7/22	1507.84	0.0000017	No	0.0000032	No
GESPM101722-641	MSC02	12/7/22	1621.97	0.0000014	No	0.0000034	No
GESPM101722-642	MSC01	12/8/22	1591.23	0.0000009	No	0.0000028	No
GESPM101722-643	MSC02	12/8/22	1712.70	0.00000091	No	0.0000026 J	No
GESPM101722-644	MSC01	12/8/22[2]	442.87	0.0000032	No	0.0000079	No
GESPM101722-645	MSC02	12/8/22[2]	480.23	0.0000019 J	No	0.0000046	No
GESPM101722-647	MSC01	12/13/22	1614.39	0.0000012	No	0.0000027	No
GESPM101722-648	MSC02	12/13/22	1709.14	0.000001	No	0.0000023	No
GESPM101722-649	MSC01	12/14/22	1629.43	0.0000011	No	0.0000036	No
GESPM101722-650	MSC02	12/14/22	1729.85	0.00000095	No	0.0000027	No
GESPM101722-651	MSC01	12/15/22	1635.44	0.0000024	No	0.0000073	No
GESPM101722-652	MSC02	12/15/22	1716.53	0.000002	No	0.0000041	No
PM113022-03	MSC01	12/20/22	1668.08	< 0.00000839	No	< 0.00005875	No
PM113022-05	MSC02	12/20/22	1694.70	< 0.00000826	No	< 0.00005783	No
PM113022-07	MSC01	12/21/22	1698.07	< 0.00000824	No	< 0.00005771	No
PM113022-09	MSC02	12/21/22	1704.09	< 0.00000822	No	< 0.00005751	No
PM113022-11	MSC01	12/22/22	1525.86	< 0.00000918	No	< 0.00006423	No
PM113022-13	MSC02	12/22/22	1619.58	< 0.00000864	No	< 0.00006051	No

Notes:

[1]Air sample was not collected on days with rain.

[2]Air sample was taken down during the afternoon after field activities ceased.

Sample locations are shown on Figure 2-1

m^3 = cubic meters

mg/m^3 = milligrams per cubic meter

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

< = below detection limit

< = below detection limit

ATTACHMENT 5

TOTAL SUSPENDED PARTICULATES MONITORING RESULTS

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Attachment 5: Total Suspended Particulates Monitoring Results

Sample, Date and Station Information			Sampler Run Information	TSP						
Sample ID	Monitoring Station	Sample End Date[1]	Total Air Volume Monitored (m^3)	Concen-tration in Air (mg/m^3)	TSP Perimeter Concentration (Downwind - Upwind) (mg/m^3)	TSP Perimeter Concentration (Downwind - Upwind) (ug/m^3)	Cal/OSHA PEL (ug/m^3)	Exceedance (Yes/No)	HERO Action Level (ug/m^3)	Exceedance (Yes/No)
GESTSP101722-640	MSC01	12/7/22	1528.50	0.0154	0.004200	4.200	5,000	No	50	No
GESTSP101722-641	MSC02	12/7/22	1774.67	0.0196						
GESTSP101722-642	MSC01	12/8/22	1612.07	0.0217	0.0000	0.000	5,000	No	50	No
GESTSP101722-643	MSC02	12/8/22	1814.62	0.0217						
GESTSP101722-644	MSC01	12/8/22[2]	450.97	0.0495	-0.0189	-18.900	5,000	No	50	No
GESTSP101722-645	MSC02	12/8/22[2]	506.50	0.0306						
GESTSP101722-647	MSC01	12/13/22	1630.62	0.0248	-0.003500	-3.500	5,000	No	50	No
GESTSP101722-648	MSC02	12/13/22	1809.55	0.0213						
GESTSP101722-649	MSC01	12/14/22	1634.67	0.0304	-0.010	-10.400	5,000	No	50	No
GESTSP101722-650	MSC02	12/14/22	1835.58	0.020						
GESTSP101722-651	MSC01	12/15/22	1615.77	0.0549	0.024	24.000	5,000	No	50	No
GESTSP101722-652	MSC02	12/15/22	1823.15	0.0309						
TSP113022-04	MSC01	12/20/22	1682.18	0.0838	-0.0505	-50.500	5,000	No	50	No
TSP113022-06	MSC02	12/20/22	1798.10	0.0333						
TSP113022-08	MSC01	12/21/22	1720.20	0.0368	-0.0001	-0.100	5,000	No	50	No
TSP113022-010	MSC02	12/21/22	1808.38	0.0369						
TSP113022-12	MSC01	12/22/22	1537.10	0.0485	-0.0675	-67.500	5,000	No	50	No
TSP113022-12	MSC02	12/22/22	1720.94	0.116						

Notes:

[1]Air sample was not collected on days with rain or when contaminated soil was not disturbed.

[2]Air sample was taken down during the afternoon after field activities ceased.

Sample locations are shown on Figure 2-1

HPNS = Hunters Point Naval Shipyard

m^3 = cubic meters

mg/m^3 = milligrams per cubic meter

ATTACHMENT 6
RADIONUCLIDES OF CONCERN AIR SAMPLING RESULTS

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Attachment 6: Radionuclides of Concern Air Sampling Results

Date	Sample Location	Duration of Run (min)	Cesium-137	Plutonium-239/240	Radium-226	Strontium-90	Cobalt-60	Thorium-232	Exceedance (Yes/No)
Action Level			4.00E-11	4.00E-15	1.80E-13	1.20E-12	1.00E-11	1.20E-15	
Units			µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	µCi/mL	
12/6/22 -12/8/22	1	3178	3.91E-15 U	7.24E-16 UJ	4.57E-15 U	2.1E-14 U	5.28E-15 U	3.94E-16 U	No
	2	3189	4.13E-15 U	1.61E-15 UJ	5.73E-15 J	1.9E-14 U	4.91E-15 U	1.24E-16	No
12/12/22-12/15/22	1	4747	2.85E-15 U	6.01E-16 UJ	2.42E-15 U	1.69E-14 U	2.8E-15 U	2.75E-16 U	No
	2	4777	2.91E-15 U	9.2E-16 UJ	4.84E-15 J	1.39E-14 U	2.77E-15 U	2.63E-16	No
12/19/22-12/22/22	1	4342	2.63E-15 U	6.31E-16 UJ	5.32E-15 J	1.9E-14 U	3.6E-15 U	2.64E-16 J	No
	2	4348	7.16E-15 U	6.72E-16 UJ	4.65E-15 J	1.6E-14 U	7.04E-15 U	2.92E-16 UJ	No

Notes:

* = duplicate sample

J = result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value

min = minutes

U = activity is less than the MDC

UJ = estimated MDC

µCi/mL= microcuries per milliliter

ATTACHMENT 7
LABORATORY REPORTS

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Laboratory Analysis Report

Job ID : 22121391

10100 East Freeway, Suite 100, Houston, TX 77029 tel: 713-453-6060, fax: 713-453-6091, http://www.ablabs.com

Client Project Name :
J310000900 / Hunters Point Shipyard, Parcel C Removal Site Evaluation

Report To :	Client Name:	GES - ASRC Industrial	Total Number of Pages:	8
	Attn:	[redacted]	P.O.#. :	J310000900-005
	Client Address:	1501 West Fountainhead Parkway, Ste. #550	Date Received :	12/14/2022 16:47
	City, State, Zip:	Tempe, Arizona, 85282	Sample Collected By :	

A&B Labs has analyzed the following samples...

Client Sample ID	Sample Collection Date & Time	Matrix	A&B Job Sample ID
FB-120622	12/6/2022 8:00	Cassette	22121391.01
MSC01-120622	12/7/2022 7:51	Cassette	22121391.02
MSC02-120622	12/7/2022 7:38	Cassette	22121391.03
MSC01-120722	12/8/2022 7:55	Cassette	22121391.04
MSC02-120722	12/8/2022 7:41	Cassette	22121391.05
MSC01-120822	12/8/2022 14:18	Cassette	22121391.06
MSC02-120822	12/8/2022 14:05	Cassette	22121391.07

[redacted]

Released By: [redacted]

Title: Vice President Operations

Analyst: [redacted]

ANALYSIS OF AIRBORNE FIBER SAMPLING
SAMPLING PERFORMED BY CLIENT
ANALYSIS CONDUCTED BY A & B ENVIRONMENTAL SERVICES, INC.
AIHA Lab Accreditation # 101470 TDH PLM/PCM Lab License # 300080

Date 12/21/202

Job ID : 22121391
Analytical Method: NIOSH 7400-I2-Aug1994

Client: GES - ASRC Industrial Project: J310000900 / Hunters Point Shipyard, Parcel C Removal Site Evaluation Attn: [redacted]

A&B Sample ID	Client Sample ID	Collected Date	Area/Person	Flow Rate L/m	Time On	Time Off	Total Time (min)	Volume (Liters)	Total Fields	Total Fibers	F/mm2	Fiber/cc	8 Hour TWA	Analysis Date	Analyzed By
22121391.01	FB-120622	12/06/2022						0	100	3	3.822			12/20/22	[redacted]
22121391.02	MSC01-120622	12/07/2022	Area	3.7			1334	4935.	100	8.5	10.828	0.001		12/20/22	[redacted]
22121391.03	MSC02-120622	12/07/2022	Area	3.7			1353	5006.	100	9.0	11.465	0.001		12/20/22	[redacted]
22121391.04	MSC01-120722	12/08/2022	Area	3.5			1443	5050.	100	6.0	7.643	0.001		12/20/22	[redacted]
22121391.05	MSC02-120722	12/08/2022	Area	3.7			1442	5335.	100	3.0	3.822	< 0.001		12/20/22	[redacted]
22121391.06	MSC01-120822	12/08/2022	Area	3.3			382	1260.	100	5	6.369	< 0.002		12/20/22	[redacted]
22121391.07	MSC02-120822	12/08/2022	Area	3.4			383	1302.	100	3	3.822	< 0.002		12/20/22	[redacted]

Detection limit of this method is estimated at 7 f/mm2 (5.5 fibers per 100 fields)

Sr Value

(Fiber Range*; Sr Value): (5-20; Sr = 0.06), (20-50; Sr = 0.05), (50-100; Sr = 0.04), (>100; Sr = 0.04)

*Fiber Range = # of Fibers / 100 Counts

Intralaboratory Sr 5-20:0.06 20-50:0.04 50-100:0.02

Sample Condition Checklist

A&B JobID : **22121391**	Date Received : **12/14/2022**	Time Received : **4:47PM**
Client Name : **GES - ASRC Industrial**		
Temperature : **23.1°C**	Sample pH : **NA**	
Thermometer ID : **IR4**	pH Paper ID : **NA**	
Perservative :		

	Check Points	Yes	No	N/A
1.	**Cooler Seal present and signed.**	X		
2.	**Sample(s) in a cooler.**		X	
3.	**If yes, ice in cooler.**			X
4.	**Sample(s) received with chain-of-custody.**	X		
5.	**C-O-C signed and dated.**	X		
6.	**Sample(s) received with signed sample custody seal.**		X	
7.	**Sample containers arrived intact. (If No comment)**	X		
8.	**Matrix:** Water ☐ Soil ☐ Liquid ☐ Sludge ☐ Solid ☐ Cassette ☑ Tube ☐ Bulk ☐ Badge ☐ Food ☐ Other ☐			
9.	**Samples were received in appropriate container(s)**	X		
10.	**Sample(s) were received with Proper preservative**			X
11.	**All samples were tagged or labeled.**	X		
12.	**Sample ID labels match C-O-C ID's.**	X		
13.	**Bottle count on C-O-C matches bottles found.**	X		
14.	**Sample volume is sufficient for analyses requested.**	X		
15.	**Samples were received with in the hold time.**	X		
16.	**VOA vials completely filled.**			X
17.	**Sample accepted.**	X		
18.	**Has client been contacted about sub-out**			X

Comments : Include actions taken to resolve discrepancies/problem:

No cooler was received, however samples are received in a box with a custody seal. ~[redacted] 12/15/22

Received by : [redacted]

Check in by/date : [redacted] / 12/15/2022

ab-s005-0321

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # KT121422ASBC

GES

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000600	POC [redacted]	
WBS Code: J310000600	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Job ID:22121391

12/14/2022 GES - ASRC Industrial ACH

Equipment:

Analytical Test Method: Asbestos

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	1	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	FB-120622	AQ	12/06/2022	0800	[redacted]	x	FB	FB	FB1	0.00	1	01A
2	MSC01-120622	A	12/07/2022	0751		x	MSC01	N	N1	0.00	1	02A
3	MSC02-120622	A	12/07/2022	0738		x	MSC02	N	N1	0.00	1	03A
4						[redacted] 12/13/22						
5												
6												
7												
8												
9												
10												
11												

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/13/22	1500	Fedex	12/13/22	1500	Shipping Date: 12/13/22 / FEDEX 7705 0210 8083
FEDEX			[redacted]	12/14/22	1647	**Received by Laboratory:** *(Signature, Date, Time)* **& condition**

23.1°C IR4

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # KT121422 ASBC

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000600	POC [redacted]	
WBS Code: J310000600	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: Asbestos (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	MSC01-120722	A	12/08/22	0755	[redacted]	x	MSC01	N	N1	0.00	1	
2	MSC02-120722	A	12/08/22	0741		x	MSC02	N	N1	0.00	1	
3												
4												
5												
6												
7												
8												
9												
10												
11												

[redacted] 12/13/22

09A
05A

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/13/22	1500	FedEx	12/13/22	1500	Shipping Date: 12/13/22 / FEDEX 7705 0210 8083
FEDEX						[redacted]
						12/14/22 1647

23.1 °C
IR4

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID #KT121422ASBC

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: Asbestos (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	MSC01-120822	A	12/08/22	1418	[redacted]	x	MSC01	N	N1	0.00	1	
2	MSC02-120822	A	12/08/22	1405		x	MSC02	N	N1	0.00	1	
3												
4												
5												
6												
7												
8												
9												
10												
11												

06A
07A

[redacted] 12/13/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/13/22	1500	Fedex	12/13/22	1500	Shipping Date: 12/13/22 / FEDEX 7705 0210 8083
FEDEX						[redacted]
						12/14/22 1647

23.1°C
IR4

COC ID # MC121422ASBC

Project Name: Hunters Point Shipyard, Parcel B Removal Site Evaluation
Project Number: J310000900
WBS Code: J310000900

Sample ID	End Date	End Time	Flow Rate (L/min), Total Time (mins)
FB-120622	12/06/22	8:00	NA
MSC01-120622	12/07/22	7:51	3.7; 1334
MSC02-120622	12/07/22	7:38	3.7; 1353
MSC01-120722	12/08/22	7:55	3.5; 1443
MSC02-120722	12/08/22	7:41	3.7; 1442
MSC01-120822	12/08/22	14:18	3.3; 382
MSC02-120822	12/08/22	14:05	3.4; 383

ORIGIN ID:JCCA [redacted]
GES-AIS
200 FISCHER AVE

SAN FRANCISCO, CA 94124
UNITED STATES US

SHIP DATE: 16NOV22
ACTWGT: 1.00 LB
CAD: 254128867/INET4530

BILL SENDER

TO [redacted]

A&B LABS
10100 EAST FREEWAY, SUITE 100

HOUSTON TX 77029
(713) 453-6060 REF: J31000 900 00 03 14
INV:
PO: DEPT:

5B1 J6/E4B6/FE2D

FedEx Express

J224222101801uw

THU - 17 NOV 4:30P
STANDARD OVERNIGHT

TRK# 0201 **7705 0210 8083**

77029
IAH

UL HBYA

TX-US

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Laboratory Analysis Report

Job ID : 22121736

10100 East Freeway, Suite 100, Houston, TX 77029 tel: 713-453-6060, fax: 713-453-6091, http://www.ablabs.com

Client Project Name :
J310000600 / Hunters Point Shipyard, Parcel C Removal Site Evaluation

Report To :	Client Name:	GES - ASRC Industrial	Total Number of Pages:	10
	Attn:	[redacted]	P.O.#. :	J310000600-006
	Client Address:	1501 West Fountainhead Parkway, Ste. #550	Date Received :	12/19/2022 09:22
	City, State, Zip:	Tempe, Arizona, 85282	Sample Collected By :	

A&B Labs has analyzed the following samples...

Client Sample ID	Sample Collection Date & Time	Matrix	A&B Job Sample ID
FB-121222	12/12/2022 8:00	Cassette	22121736.01
MSC01-121222	12/13/2022 7:39	Cassette	22121736.02
MSC02-121222	12/13/2022 7:24	Cassette	22121736.03
MSC01-121322	12/14/2022 7:54	Cassette	22121736.04
MSC02-121322	12/14/2022 7:41	Cassette	22121736.05
MSC01-121422	12/15/2022 7:49	Cassette	22121736.06
MSC02-121422	12/15/2022 7:33	Cassette	22121736.07

[redacted]

Released By: [redacted]

Title: Senior Project Manager

Analyst: [redacted]

ANALYSIS OF AIRBORNE FIBER SAMPLING
SAMPLING PERFORMED BY CLIENT
ANALYSIS CONDUCTED BY A & B ENVIRONMENTAL SERVICES, INC.
AIHA Lab Accreditation # 101470 TDH PLM/PCM Lab License # 300080

Date 2/7/2023

Job ID : 22121736
Analytical Method: NIOSH 7400-I2-Aug1994

Client: GES - ASRC Industrial Project: J310000600 / Hunters Point Shipyard, Parcel C Removal Site Evaluation Attn: [redacted]

A&B Sample ID	Client Sample ID	Collected Date	Area/Person	Flow Rate L/m	Time On	Time Off	Total Time (min)	Volume (Liters)	Total Fields	Total Fibers	F/mm2	Fiber/cc	8 Hour TWA	Analysis Date	Analyzed By
22121736.01	FB-121222	12/12/2022						0	100	2	2.548			12/27/22	[redacted]
22121736.02	MSC01-121222	12/13/2022	Area	3.6			1435	5166	100	9.5	12.102	0.001		12/27/22	[redacted]
22121736.03	MSC02-121222	12/13/2022	Area	3.3			1433	4728.	100	5.5	7.006	0.001		12/27/22	[redacted]
22121736.04	MSC01-121322	12/14/2022	Area	3.5			1454	5089	100	5.0	6.369	< 0.001		12/27/22	[redacted]
22121736.05	MSC02-121322	12/14/2022	Area	3.3			1456	4804.	100	5.5	7.006	0.001		12/27/22	[redacted]
22121736.06	MSC01-121422	12/15/2022	Area	3.6			1434	5162.	100	7.5	9.554	0.001		12/27/22	[redacted]
22121736.07	MSC02-121422	12/15/2022	Area	3.3			1432	4725.	100	4.0	5.096	< 0.001		12/27/22	[redacted]

Detection limit of this method is estimated at 7 f/mm2 (5.5 fibers per 100 fields)

Sr Value

(Fiber Range*; Sr Value): (5-20; Sr = 0.06), (20-50; Sr = 0.05), (50-100; Sr = 0.04), (>100; Sr = 0.04)

*Fiber Range = # of Fibers / 100 Counts

OUTR = Overload,Unable To Read

Intralaboratory Sr 5-20:0.06 20-50:0.04 50-100:0.02

Sample Condition Checklist

A&B JobID : **22121736**	Date Received : **12/19/2022**	Time Received : **9:22AM**
Client Name : **GES - ASRC Industrial**		
Temperature : **22.1°C**	Sample pH : **NA**	
Thermometer ID : **IR4**	pH Paper ID : **NA**	
Perservative :		

	Check Points	Yes	No	N/A
1.	**Cooler Seal present and signed.**	X		
2.	**Sample(s) in a cooler.**		X	
3.	**If yes, ice in cooler.**			X
4.	**Sample(s) received with chain-of-custody.**	X		
5.	**C-O-C signed and dated.**	X		
6.	**Sample(s) received with signed sample custody seal.**		X	
7.	**Sample containers arrived intact. (If No comment)**	X		
8.	**Matrix:** Water ☐ Soil ☐ Liquid ☐ Sludge ☐ Solid ☐ Cassette ☑ Tube ☐ Bulk ☐ Badge ☐ Food ☐ Other ☐			
9.	**Samples were received in appropriate container(s)**	X		
10.	**Sample(s) were received with Proper preservative**			X
11.	**All samples were tagged or labeled.**	X		
12.	**Sample ID labels match C-O-C ID's.**	X		
13.	**Bottle count on C-O-C matches bottles found.**	X		
14.	**Sample volume is sufficient for analyses requested.**	X		
15.	**Samples were received with in the hold time.**	X		
16.	**VOA vials completely filled.**			X
17.	**Sample accepted.**	X		
18.	**Has client been contacted about sub-out**			X

Comments : Include actions taken to resolve discrepancies/problem:

No cooler was received, however samples are received in a box with a custody seal. Received black cassettes. ~[redacted] 12/19/2022

Received by : [redacted]

Check in by/date : [redacted] / 12/19/2022

ab-s005-0321

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # [redacted]21622ASBC

GES

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000900	POC: [redacted]	
WBS Code: J310000900	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Job ID:22121736

12/19/2022 GES - ASRC Industrial ACH

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method 22 Asbestos 1	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
01A	1 FB-121222	AQ	12/12/2022	0840	[redacted]	x	FB	FB	FB1	0.00	1	
02A	2 MSC01-121222	A	12/13/2022	0739		x	MSC01	N	N1	0.00	1	
03A	3 MSC02-121222	A	12/13/2022	0724		x	MSC02	N	N1	0.00	1	
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											

[redacted] 12/16/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/16/22	1200	Fed Ex	12/16/22	1200	Shipping Date: 12/16/22 / FEDEX ~~7707 2100 0142~~ [redacted] 7707 7990 2197 12/16/22
Fedex	12/19/22	9:22	[redacted]	12/19/22	9:22	**Received by Laboratory:** *(Signature, Date, Time)* **& condition**

22.1°C
TR4
[redacted]

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # [redacted]121622ASBC

GES

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000900	POC: [redacted]	
WBS Code: J310000900	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: Asbestos (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
04A	1 MSC01-121322	A	12/14/2022	0754	[redacted]	x	MSC01	N	N1	0.00	1	
05A	2 MSC02-121322	A	12/14/2022	0741		x	MSC02	N	N1	0.00	1	
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											

[redacted]
12/14/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/16/22	1200	FedEx	12/16/22	1200	Shipping Date: 12/16/22 / FEDEX ~~7707 2100 0142~~ [redacted] 7707 T990 2197 12/16/22
Fedex	12/19/22	9:22	[redacted]	12/19/22	9:22	**Received by Laboratory:** *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # [redacted]121622ASBC

GES

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: Asbestos (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
06A	1 MSC01-121422	A	12/15/2022	0749	[redacted]	x	MSC01	N	N1	0.00	1	
07A	2 MSC02-121422	A	12/15/2022	0733		x	MSC02	N	N1	0.00	1	
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											

12/16/22 [redacted]

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/16/22	1200	Fedex	12/16/22	1200	Shipping Date: 12/16/22 / FEDEX ~~7707 2100 0142~~ [redacted] 7707 7990 2197 12/16/22
Fedex	12/19/22	9:22	[redacted]	12/19/22	9:22	**Received by Laboratory:** *(Signature, Date, Time)* **& condition**

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # [redacted]121622ASBC

GES

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000900	POC [redacted]	
WBS Code: J310000900	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: Asbestos (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	MSC01-121522	A	12/15/2022	1437	[redacted]	x	MSC01	N	N1	0.00	1	
2	MSC02-121522	A	12/15/2022	1437	[redacted]	x	MSC02	N	N1	0.00	1	
3												
4												
5												
6												
7												
8												
9												
10												
11												

08A
09A

[redacted] 12/16/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/16/22	1200	Fed Ex	12/16/22	1200	Shipping Date: 12/16/22 / FEDEX ~~7707 2100 0142~~ [redacted] 7707 7990 2197 12/16/22
Fedex	12/19/22	9:22	[redacted]	12/19/22	9:22	**Received by Laboratory:** *(Signature, Date, Time)* **& condition**

Sample ID	End Date	End Time	Flow Rate (L/min), Total Time (mins)
FB-121222	12/12/2022	8:00	0
MSC01-121222	12/13/2022	7:39	3.6; 1435
MSC02-121222	12/13/2022	7:24	3.3; 1433
MSC01-121322	12/14/2022	7:54	3.5; 1454
MSC02-121322	12/14/2022	7:41	3.3; 1456
MSC01-121422	12/15/2022	7:49	3.6; 1434
MSC02-121422	12/15/2022	7:33	3.3; 1432
MSC01-121522	12/15/2022	14:37	3.7; 407
MSC02-121522	12/15/2022	14:37	3.4; 423

ORIGIN ID:JCCA [redacted]

GES-AIS
200 FISCHER AVE

SAN FRANCISCO, CA 94124
UNITED STATES US

SHIP DATE: 16DEC22
ACTWGT: 1.00 LB
CAD: 254128867/INET4530

BILL SENDER

TO [redacted]

A&B LABS
10100 EAST FREEWAY, SUITE 100

HOUSTON TX 77029
(713) 453-6060 REF: J31000 900 00 03 14
INV
PO DEPT

581J3/9A97/FE20

FedEx Express

E

J224222101801uv

SATURDAY 9:30A
FIRST OVERNIGHT

TRK# 0201 **7707 7990 2197**

X0 HBYA

TX-US **77029 IAH**

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Gmail [redacted]

Modified Report Needed SDG 22121736

1 message

[redacted] Mon, Feb 6, 2023 at 7:08 PM

Hi [redacted]

May we have a modified report for SDG 22121736?

We need the data for the following samples excluded:

- MSC01-121522
- MSC02-121522

Please include this email as an attachment in the modified laboratory report.

Please let me know if you have any questions.

Thank you,

[redacted]
Chemist I
GES | MBE
6790 S Dawson Cir
Centennial, CO 80112
[redacted]
GES-AIS.COM

22121736.pdf
1126K

Laboratory Analysis Report

Job ID : 22122772

10100 East Freeway, Suite 100, Houston, TX 77029 tel: 713-453-6060, fax: 713-453-6091, http://www.ablabs.com

Client Project Name :
J310000600 / Hunters Point Shipyard, Parcel C Removal Site Evaluation

Report To :	Client Name:	GES - ASRC Industrial	Total Number of Pages:	8
	Attn:	[redacted]	P.O.#. :	J310000600-006
	Client Address:	1501 West Fountainhead Parkway, Ste. #550	Date Received :	12/29/2022 15:06
	City, State, Zip:	Tempe, Arizona, 85282	Sample Collected By :	

A&B Labs has analyzed the following samples...

Client Sample ID	Sample Collection Date & Time	Matrix	A&B Job Sample ID
FBC-121922	12/19/2022 8:00	Cassette	22122772.01
MSC01-121922	12/20/2022 7:57	Cassette	22122772.02
MSC02-121922	12/20/2022 7:35	Cassette	22122772.03
MSC01-122022	12/21/2022 7:48	Cassette	22122772.04
MSC02-122022	12/21/2022 7:39	Cassette	22122772.05
MSC01-122122	12/22/2022 7:55	Cassette	22122772.06
MSC02-122122	12/22/2022 7:47	Cassette	22122772.07

[redacted]

Released By: [redacted]

Title: Vice President Operations

Analyst: [redacted]

ANALYSIS OF AIRBORNE FIBER SAMPLING
SAMPLING PERFORMED BY CLIENT
ANALYSIS CONDUCTED BY A & B ENVIRONMENTAL SERVICES, INC.
AIHA Lab Accreditation # 101470 TDH PLM/PCM Lab License # 300080

Date 1/6/2023

Job ID : 22122772
Analytical Method: NIOSH 7400-I2-Aug1994

Client: GES - ASRC Industrial Project: J310000600 / Hunters Point Shipyard, Parcel C Removal Site Evaluation Attn: [redacted]

A&B Sample ID	Client Sample ID	Collected Date	Area/Person	Flow Rate L/m	Time On	Time Off	Total Time (min)	Volume (Liters)	Total Fields	Total Fibers	F/mm2	Fiber/cc	8 Hour TWA	Analysis Date	Analyzed By
22122772.01	FBC-121922	12/19/2022						0	100	2	2.548			01/06/23	[redacted]
22122772.02	MSC01-121922	12/20/2022	Area	3.6			1439	5180.	100	4.0	5.096	< 0.001		01/06/23	[redacted]
22122772.03	MSC02-121922	12/20/2022	Area	3.4			1430	4862	100	0.5	0.637	< 0.001		01/06/23	[redacted]
22122772.04	MSC01-122022	12/21/2022	Area	3.7			1430	5291	100	3	3.822	< 0.001		01/06/23	[redacted]
22122772.05	MSC02-122022	12/21/2022	Area	3.7			1443	5339.	100	4.5	5.732	< 0.001		01/06/23	[redacted]
22122772.06	MSC01-122122	12/22/2022	Area	3.7			1446	5350.	100	7.0	8.917	0.001		01/06/23	[redacted]
22122772.07	MSC02-122122	12/22/2022	Area	3.7			1447	5353.	100	8	10.191	0.001		01/06/23	[redacted]

Detection limit of this method is estimated at 7 f/mm2 (5.5 fibers per 100 fields)

Sr Value

(Fiber Range*; Sr Value): (5-20; Sr = 0.06), (20-50; Sr = 0.05), (50-100; Sr = 0.04), (>100; Sr = 0.04)

*Fiber Range = # of Fibers / 100 Counts

OUTR = Overload,Unable To Read

Intralaboratory Sr 5-20:0.06 20-50:0.04 50-100:0.02

Sample Condition Checklist

A&B JobID : **22122772**	Date Received : **12/29/2022**	Time Received : **3:06PM**
Client Name : **GES - ASRC Industrial**		
Temperature : **23.2°C**	Sample pH : **NA**	
Thermometer ID : **IR4**	pH Paper ID : **NA**	
Perservative :		

	Check Points	Yes	No	N/A
1.	**Cooler Seal present and signed.**	X		
2.	**Sample(s) in a cooler.**		X	
3.	**If yes, ice in cooler.**			X
4.	**Sample(s) received with chain-of-custody.**	X		
5.	**C-O-C signed and dated.**	X		
6.	**Sample(s) received with signed sample custody seal.**		X	
7.	**Sample containers arrived intact. (If No comment)**	X		
8.	**Matrix:** Water ☐ Soil ☐ Liquid ☐ Sludge ☐ Solid ☐ Cassette ☑ Tube ☐ Bulk ☐ Badge ☐ Food ☐ Other ☐			
9.	**Samples were received in appropriate container(s)**	X		
10.	**Sample(s) were received with Proper preservative**			X
11.	**All samples were tagged or labeled.**	X		
12.	**Sample ID labels match C-O-C ID's.**	X		
13.	**Bottle count on C-O-C matches bottles found.**	X		
14.	**Sample volume is sufficient for analyses requested.**	X		
15.	**Samples were received with in the hold time.**	X		
16.	**VOA vials completely filled.**			X
17.	**Sample accepted.**	X		
18.	**Has client been contacted about sub-out**			X

Comments : Include actions taken to resolve discrepancies/problem:

No cooler was received, however samples are received in a box with a custody seal. Black Cassettes. ~[redacted] 12/29/22

Received by : [redacted]

Check in by/date : [redacted] / 12/29/2022

ab-s005-0321

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # LS122822ASBC

GES

Project Name: Hunters Point Shipyard, Parcel B Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000900	POC: [redacted]	
WBS Code: J310000900	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

[redacted] 12/28/22
~~Page 1 of 4~~
page 1 of 3

Comments:

Job ID:22122772

12/29/2022 GES - ASRC Industrial ACH

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Equipment:

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: Asbestos	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	FBC-121922 01A	AQ	12-19-22	0800	[redacted]	x	FB	FB1	FB1	0.00	1	
2	MSC01-121922 02A	A	12-20-22	0757		x	MSC01	N1	N1	0.00	1	
3	MSC02-121922 03A	A	12-20-22	0735		x	MSC02	N1	N1	0.00	1	
4												
5												
6												
7												
8												
9												
10												
11												

[redacted] 12/28/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/28/22	1200	FedEx	12/28/22	1200	Shipping Date 12/28/22 / FEDEX 7707 7509 6823
						Received by Laboratory: *(Signature, Date, Time)* & condition [redacted] 12-29-22 ~~3:06~~ 15:04 23.2°C [redacted]

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # LS122822ASBC

GES

Project Name: Hunters Point Shipyard, Parcel B Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000900	POC: [redacted]	
WBS Code: J310000900	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

[redacted] 12/21/22
Page 2 of 4
page 2of3

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Analytical Test Method: Asbestos

[redacted] 12/21/22

Event: Parcel B Asbestos — 1

	Sample ID	Matrix	Date	Time	Samp Init.	Asbestos	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	MSC01-122022 04A	A	12/21/22	0748	[redacted]	x	MSC01	N1	N1	0.00	1	
2	MSC02-122022 05A	A	12/21/22	0739		x	MSC02	N1	N1	0.00	1	
3												
4												
5												
6												
7												
8												
9												
10												
11												

[redacted] 12/22/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/28/22	1200	FedEx	12/28/22	1200	Shipping Date:12/28/22 / FEDEX 7707 7509 6823
						Received by Laboratory: *(Signature, Date, Time)* & condition

[redacted] 12-24-22 ~~3:05~~ 15:0
23.2°C
[redacted]

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
1655 Grant Street, Suite 1200, Concord, CA 94520
[redacted]

COC ID # LS122822ASBC

GES

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: A&B Labs	Event: **Parcel C Asbestos**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10100 East Fwy Ste. 100 Houston TX 77029	

[redacted] 12/22/22
Page 3 of 4
Page 3 of 3

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	Filter/No Preservatives

Analytical Test Method: Asbestos

Event: Parcel B Asbestos

	Sample ID	Matrix	Date	Time	Samp Init.	1	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	MSC01-122122 06A	A	12/22/22	0755	[redacted]	x	MSC01	N1	N1	0.00	1	
2	MSC02-122122 07A	A	12/22/22	0747		x	MSC02	N1	N1	0.00	1	
3												
4												
5												
6												
7												
8												
9												
10												
11												

[redacted] 12/22/22

Turnaround Time: 7 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time	Shipping Date / Carrier / Airbill Number
[redacted]	12/28/22	1200	FedEx	12/28/22	1200	Shipping Date:12/28/22 / FEDEX 7707 7509 6823
						Received by Laboratory: *(Signature, Date, Time)* & condition [redacted] 12-29-22 15:06 EC 13.7

[redacted]

HPNS Parcel C Asbestos

Sample ID	End Date	End Time	Flow Rate (L/min), Total Time (mins)
FB-121922	12/19/22	8:00	NA
MSC01-121922	12/20/22	7:57	3.6; 1439
MSC02-121922	12/20/22	7:35	3.4; 1430
MSC01-122022	12/21/22	7:48	3.7; 1430
MSC02-122022	12/21/22	7:39	3.7; 1443
MSC01-122122	12/22/22	7:55	3.7; 1446
MSC02-122122	12/22/22	7:47	3.7; 1447

ORIGIN ID:JCCA (925) 250-6097
[redacted]
200 FISCHER AVE

SAN FRANCISCO, CA 94124
UNITED STATES US

SHIP DATE: 24DEC22
ACTWGT: 1.00 LB
CAD: 254128867/INET4530
[redacted]

TO [redacted]

A&B LABS
10100 EAST FREEWAY, SUITE 100

HOUSTON TX 77029
(713) 453-6060 REF: J31000 900 00 03 14
INV
PO DEPT:

591J3/9A97/FE2D

FedEx Express

E

J224222101801uv

TUE - 27 DEC 4:30P
STANDARD OVERNIGHT

TRK# 0201 **7707 7509 6823**

XA HBYA TX-US **77029 IAH**

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2609 North River Road
Port Allen, Louisiana 70767
(225) 228-1394

ARS Aleut Analytical, LLC

Laboratory Analytical Report

ARS1-22-02717 Revision 1

Gilbane Federal
[redacted]
1655 Grant Street
Suite 1200
Concord, CA 94520
[redacted]

COC Number: **KT121422 RADC**
Job Number: **J310000600**
Job Location: **Hunters Point Shipyard, Parcel C Removal Site Evaluation**
Project Name: **Parcel C Air Monitoring RAD**

Questions regarding this analytical report should be addressed to ARS project manager, [redacted], who can be reached by email at projectmanagers@aaa.aleutfederal.com.

I certify that the test results presented in this report (in either hardcopy or electronic file (EDD)) meet the requirements of the laboratory's certifications and other applicable contract terms and conditions. A full list of the Port Allen, LA laboratory's certifications is provided with this report. Any exceptions to the certification or contract will be noted within the case narratives presented in the report. Any subcontracted sample results will be identified within the case narratives presented in the report. In the event this report is an amendment to a previously released report, the case narrative will clearly identify the original report as well as the reason(s) for reissuance. A statement of uncertainty for each analysis is available upon request. I authorize release and issuance of this report on the date signed below.

[redacted] Laboratory Management, ARS Aleut Analytical

Signature **Date** **Title**

This report provides analytical results of the requested analysis and does not include any opinions or interpretations. ARS Aleut Analytical, LLC assumes no liability for the use or interpretation of analytical results. Results relate only to items tested. A partial reproduction of this test report is prohibited. Reproduction of this report in full requires the written approval of the laboratory.

LELAP Cert # 01949

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

Table Of Contents

Certifications and Accreditations List

State or Accrediting Body (AB)	Certificate Number
AIHA LAP, LLC	209312
Alaska	LA01131
California	3085
ANAB DoD	ADE-1489
ANAB DOE	ADE-1489.01
Louisiana DEQ - NELAC	01949
Louisiana DHH	LA022
Nevada	LA011312023-1
New Jersey	LA009
New York	65039
Pennsylvania	68-04294-011
Texas	T104704447-22-18
Utah	LA011312022-13
Washington	C1010

For additional information related to the specific matrices, methods,and analytes recognized by each accrediting body, contact us at QA@aaa.aleutfederal.com for additional information.

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Case Narrative

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

PROJECT SAMPLE IDENTIFICATION CROSS-REFERENCE
TO ARS SAMPLE LABORATORY IDs

Client Sample ID	ARS Aleut Analytical Sample ID
FBC-120622	ARS1-22-02717-001
MSC01-120622	ARS1-22-02717-002
MSC02-120622	ARS1-22-02717-003

Sample	Date Collected	Date Received	Analysis	Basis	Prep Date/Time	Analysis Date/Time
001	12/06/22 08:00	12/14/22	ASP-PU239-AF	As Received	12/28/22 07:31	01/07/23 03:09
001	12/06/22 08:00	12/14/22	ASP-TH-AF	As Received	01/03/23 10:20	01/06/23 00:49
001	12/06/22 08:00	12/14/22	GAM-A-AF	As Received	NA	12/16/22 14:43
001	12/06/22 08:00	12/14/22	GPC-RA226-AF	As Received	12/28/22 07:14	01/05/23 10:52
001	12/06/22 08:00	12/14/22	GPC-SR90-AF	As Received	12/28/22 08:52	01/03/23 12:24
002	12/08/22 14:20	12/14/22	ASP-PU239-AF	As Received	12/28/22 07:31	01/07/23 03:09
002	12/08/22 14:20	12/14/22	ASP-TH-AF	As Received	01/03/23 10:20	01/06/23 00:49
002	12/08/22 14:20	12/14/22	GAM-A-AF	As Received	NA	12/16/22 14:44
002	12/08/22 14:20	12/14/22	GPC-RA226-AF	As Received	12/28/22 07:14	01/05/23 10:52
002	12/08/22 14:20	12/14/22	GPC-SR90-AF	As Received	12/28/22 08:52	01/03/23 12:24
003	12/08/22 14:08	12/14/22	ASP-PU239-AF	As Received	12/28/22 07:31	01/07/23 03:09
003	12/08/22 14:08	12/14/22	ASP-TH-AF	As Received	01/03/23 10:20	01/06/23 00:49
003	12/08/22 14:08	12/14/22	GAM-A-AF	As Received	NA	12/19/22 14:27
003	12/08/22 14:08	12/14/22	GPC-RA226-AF	As Received	12/28/22 07:14	01/05/23 10:52
003	12/08/22 14:08	12/14/22	GPC-SR90-AF	As Received	12/28/22 08:52	01/03/23 12:24

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

SAMPLE RECEIPT/PREP

The samples arrived in good condition. The samples were screened for radioactive contamination as per procedure **PALA-SR-001-SOP Sample Receiving**. Sample date(s) and time(s) are listed as provided by the client. In regard to the Air Filters, no flow rate information was provided by the client. Turnaround time was set at 28 calendar days.

ANALYTICAL METHODS

Pu-239/240 analysis was performed using **PALA-RAD-026, "Americium, Plutonium and Uranium in Water, Soil and Vegetation Matrices by Sequential Separation Using Eichrom Stabilized Chemistry Resin (with Vacuum Box System Option) (Eichrom ACW-02 & Eichrom ACW-03)"**.

Th-232 analysis was performed using **PALA-RAD-031, "Thorium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom ACW-08 & Eichrom ACW-10)"**.

Co-60, Cs-137, Ra-226 analyses were performed using **PALA-RAD-007, "Modified Gamma Emitting Radionuclides in Soil, Air, and Biota Matrices (EPA 901.1 Mod, SM 7120B, & HASL-300 Ga-01-R)"**.

Ra-226 analysis was performed using **PALA-RAD-008, "Alpha Emitting Radium Isotopes (EPA 903.0, EPA 9315, SM 7500-Ra C, SM 7500-Ra C)"**.

Sr-90 analysis was performed using **PALA-RAD-032, "Strontium 89, 90 and Total Strontium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom SRW01, EPA 905.0, HASL 300 Sr-01-RC)"**.

ANALYTICAL RESULTS

Fraction 001 has elevated MDC for Pu-239/240 with ACT of -8.248E-8 uCi/filter, MDC of 1.954E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 001 has elevated MDC for Th-232 with ACT of 1.907E-8 uCi/filter, MDC of 1.146E-7 uCi/filter and CRDL of 1.4E-08 uCi/filter.
Fraction 001 has elevated MDC for Ra-226 with ACT of -1.863E-6 uCi/filter, MDC of 1.532E-5 uCi/filter and CRDL of 4.4E-06 uCi/filter.
Fraction 002 has elevated MDC for Pu-239/240 with ACT of 9.198E-9 uCi/filter, MDC of 1.382E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 002 has elevated MDC for Th-232 with ACT of 3.488E-8 uCi/filter, MDC of 7.513E-8 uCi/filter and CRDL of 1.4E-08 uCi/filter.
Fraction 002 has elevated MDC for Ra-226 with ACT of 2.100E-6 uCi/filter, MDC of 9.372E-6 uCi/filter and CRDL of 4.4E-06 uCi/filter.
Fraction 003 has elevated MDC for Pu-239/240 with ACT of -2.341E-7 uCi/filter, MDC of 3.094E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 003 has elevated MDC for Ra-226 with ACT of 1.220E-6 uCi/filter, MDC of 9.618E-6 uCi/filter and CRDL of 4.4E-06 uCi/filter.

ARS1-B22-02011: ROI's adjusted to better fit the peaks of interest.

ARS1-B23-00006: ROI's adjusted to better fit the peaks of interest.

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REVISION 1

Final Report submitted on 01/11/2023

Per client request, sample ID was changed from “FB-120622” to “FBC-120622”.

Notes (Case Narrative)

Definitions:

CRDL	Contract Required Detection Limit
CSU	Combined Standard Uncertainty
DLC	Decision Level Concentration (ANSI N42.23)
DO	Duplicate Original
DUP	Sample Duplicate
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MBL	Method Blank
MCL	Maximum Contaminant Level
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
N/A	Not Applicable
NC	Not Calculated
NP	Not Provided
NR	Not Referenced
PQL	Practical Quantitation Limit

Data Qualifiers:

B	The result of both the method blank and the target sample are above the MDL.
D	Sample analysis accomplished through dilution.
J	The reported result is an estimated value above the LOD but below the LOQ, or above the MDL but below the PQL.
Q	One or more quality control criteria failed.
U	Result is below the MDA, MDL, PQL, LOD, or LOQ
*	LCS/LCSD or Sample DUP fails all Duplicate criteria.
S	Spike
SC	Subcontracted out to another qualified laboratory
H	Holding time exceeded
E	Exceeds MCL
**	Reporting Limit is higher than MCL; Target cannot be detected
ǂ	Method/Matrix/Analyte not accredited for this certification

Radiochemistry Comments:

1.0) All MDA/MDC values are calculated on a sample specific basis.

2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.

3.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.

4.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228 (Gamma Spectroscopy only).

5.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234 (Gamma Spectroscopy only).

6.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).

7.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected (Gamma Spectroscopy only).

8.0) Gamma spectroscopy results are calculated values based on the **ORTEC®** GammaVision ENV32 Analysis Engine.

9.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Non-Potable Water**:
Gross Alpha and Gross Beta (EPA 900.0, EPA 9310); Radium 226 (EPA 903.0, EPA 903.1, EPA 9315); Radium 228 (EPA 904.0, EPA 9320); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7470A); Strontium-89 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-02-RC); Tritium (EPA 906.0); Enriched Tritium (ARS-040), Carbon-14 (ARS-019), Tritium/Carbon (ARS-151); Gamma Emitters (EPA 901.1, SM 7120B, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-03); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Pu-10); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03); Technetium-99 (Eichrom TCW02)

10.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Solid and Chemical Materials**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7471B); Strontium-89 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-02); Tritium (EPA 906.0 Mod); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-01-RC); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Pu-02-RC, HASL 300 Pu-03-RC); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03, HASL 300 U-02, HASL 300 U-04); Technetium-99 (Eichrom TCS01)

11.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Air and Emissions**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); Strontium-89 (Eichrom SRW01, HASL 300 Sr-01-RC); Strontium-90 (Eichrom SRW01, HASL 300 Sr-02-RC); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03); Technetium-99 (Eichrom TCW02, Eichrom TCS01)

General Comments:

1.0 Modified analysis procedures are procedures that are modified to meet certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "M" or "Mod" to the procedure number (i.e. 901.1M, 901.1 Mod).

2.0 All NIOSH method results are reported without blank corrections applied.

3.0 Basis: "As Received" = analyzed as received from client; "Dry" = dried prior to being analyzed; "Dry Weight Corrected" = analyzed as received; result corrected for percent moisture.

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ARS Aleut Analytical, LLC
Analytical Reports

for

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Analytical Results

2609 North River Road • Port Allen, Louisiana 70767
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ARS Sample Delivery Group: ARS1-22-02717
Client Sample ID: FBC-120622
Sample Collection Date: 12/06/22 8:00
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02717-001
Date Received: 12/14/22
Report Date: 01/19/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-8.248E-8	8.672E-8	1.954E-7	8.528E-8	4.8E-08	U	uCi/filter	01/07/23 3:09	[redacted]	45.6%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	1.907E-8	5.914E-8	1.146E-7	4.436E-8	1.4E-08	U	uCi/filter	01/06/23 0:49	[redacted]	43.9%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-5.731E-7	1.050E-6	1.136E-6	5.680E-7	0.00024	U	uCi/filter	12/16/22 14:43	[redacted]	N/A
Cs-137	2.998E-8	7.651E-7	8.995E-7	4.498E-7	0.00048	U	uCi/filter	12/16/22 14:43	[redacted]	N/A
Ra-226	-1.863E-6	1.437E-5	1.532E-5	7.660E-6	4.4E-06	U	uCi/filter	12/16/22 14:43	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	1.063E-6	6.940E-7	8.568E-7	3.288E-7	4.4E-06		uCi/filter	01/05/23 10:52	[redacted]	92.5%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	1.474E-6	2.369E-6	4.033E-6	1.863E-6	2.4E-05	U	uCi/filter	01/03/23 12:24	[redacted]	94.5%

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ARS Sample Delivery Group: ARS1-22-02717
Client Sample ID: MSC01-120622
Sample Collection Date: 12/08/22 14:20
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02717-002
Date Received: 12/14/22
Report Date: 01/19/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	9.198E-9	6.983E-8	1.382E-7	5.661E-8	4.8E-08	U	uCi/filter	01/07/23 3:09	[redacted]	46.5%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	3.488E-8	4.555E-8	7.513E-8	2.811E-8	1.4E-08	U	uCi/filter	01/06/23 0:49	[redacted]	61.3%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-6.112E-7	9.961E-7	1.008E-6	5.040E-7	0.00024	U	uCi/filter	12/16/22 14:44	[redacted]	N/A
Cs-137	-2.805E-7	6.905E-7	7.463E-7	3.732E-7	0.00048	U	uCi/filter	12/16/22 14:44	[redacted]	N/A
Ra-226	2.100E-6	7.417E-6	9.372E-6	4.686E-6	4.4E-06	U	uCi/filter	12/16/22 14:44	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	6.056E-7	5.939E-7	8.733E-7	3.227E-7	4.4E-06	U	uCi/filter	01/05/23 10:52	[redacted]	81.2%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	2.189E-6	2.433E-6	4.008E-6	1.844E-6	2.4E-05	U	uCi/filter	01/03/23 12:24	[redacted]	90.3%

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ARS Sample Delivery Group: ARS1-22-02717
Client Sample ID: MSC02-120622
Sample Collection Date: 12/08/22 14:08
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02717-003
Date Received: 12/14/22
Report Date: 01/19/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-2.341E-7	1.328E-7	3.094E-7	1.388E-7	4.8E-08	U	uCi/filter	01/07/23 3:09	[redacted]	33.7%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	2.381E-8	2.710E-8	2.151E-8	0.000	1.4E-08		uCi/filter	01/06/23 0:49	[redacted]	49.7%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-3.527E-7	9.220E-7	9.407E-7	4.704E-7	0.00024	U	uCi/filter	12/19/22 14:27	[redacted]	N/A
Cs-137	-3.929E-7	7.353E-7	7.915E-7	3.958E-7	0.00048	U	uCi/filter	12/19/22 14:27	[redacted]	N/A
Ra-226	1.220E-6	7.598E-6	9.618E-6	4.809E-6	4.4E-06	U	uCi/filter	12/19/22 14:27	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	1.097E-6	6.362E-7	6.901E-7	2.541E-7	4.4E-06		uCi/filter	01/05/23 10:52	[redacted]	97.2%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	-4.643E-8	2.003E-6	3.638E-6	1.684E-6	2.4E-05	U	uCi/filter	01/03/23 12:24	KEASTMAN	99.4%

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ARS Aleut Analytical, LLC
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QC Summary

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QC Sample Results

Analytical Batch: ARS1-B22-01961
Lab Sample ID: ARS1-B22-01961-01
Method: EPA 901.1M

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 12/16/22 13:39

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Am-241	33.065	31.791		uCi/filter	96.1	75 - 125
Co-60	20.928	22.519		uCi/filter	107.6	75 - 125
Cs-137	12.996	13.115		uCi/filter	100.9	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-01961
Lab Sample ID: ARS1-B22-01961-02
Method: EPA 901.1M

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 12/16/22 13:53

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Am-241	33.065	31.805		uCi/filter	96.2	75 - 125	0.0	25	0.008	3
Co-60	20.928	21.151		uCi/filter	101.1	75 - 125	6.3	25	1.519	3
Cs-137	12.996	13.079		uCi/filter	100.6	75 - 125	0.3	25	0.071	3

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QC Sample Results

Analytical Batch: ARS1-B22-01961
Lab Sample ID: ARS1-B22-01961-03
Method: EPA 901.1M

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 12/19/22 14:47

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Co-60	1.679E-4	9.304E-4	0.001	5.100E-4	U	uCi/filter
Cs-137	-3.961E-4	8.400E-4	9.750E-4	4.875E-4	U	uCi/filter
Ra-226	-0.014	0.015	0.016	0.008	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02717 **Analytical Batch:** ARS1-B22-01961

Analysis: Gamma Spec (Short) in (Air Filters, Smears [AF])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-01961-01		Lab Control Sample	Air Filter	EPA 901.1M	N/A
ARS1-B22-01961-02		Lab Control Sample Duplicate	Air Filter	EPA 901.1M	N/A
ARS1-B22-01961-03		Method Blank	Air Filter	EPA 901.1M	N/A
ARS1-B22-01961-04	ARS1-22-02717-001	FBC-120622	Air Filter	EPA 901.1M	N/A
ARS1-B22-01961-05	ARS1-22-02717-002	MSC01-120622	Air Filter	EPA 901.1M	N/A
ARS1-B22-01961-06	ARS1-22-02717-003	MSC02-120622	Air Filter	EPA 901.1M	N/A

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QC Sample Results

Analytical Batch: ARS1-B22-01990
Lab Sample ID: ARS1-B22-01990-01
Method: EPA 9315

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/05/23 10:52

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Ra-226	2.713E-5	2.538E-5		uCi/filter	93.5	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-01990
Lab Sample ID: ARS1-B22-01990-02
Method: EPA 9315

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/05/23 10:52

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Ra-226	2.694E-5	2.582E-5		uCi/filter	95.8	75 - 125	1.7	25	0.150	3

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QC Sample Results

Analytical Batch: ARS1-B22-01990
Lab Sample ID: ARS1-B22-01990-03
Method: EPA 9315

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/05/23 10:52

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Ra-226	7.249E-8	6.005E-8	8.416E-8	3.245E-8	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02717

Analytical Batch: ARS1-B22-01990

Analysis: Radium-226 in Air Filter

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-01990-01		Lab Control Sample	Air Filter	EPA 9315	N/A
ARS1-B22-01990-02		Lab Control Sample Duplicate	Air Filter	EPA 9315	N/A
ARS1-B22-01990-03		Method Blank	Air Filter	EPA 9315	N/A
ARS1-B22-01990-04	ARS1-22-02717-001	FBC-120622	Air Filter	EPA 9315	N/A
ARS1-B22-01990-05	ARS1-22-02717-002	MSC01-120622	Air Filter	EPA 9315	N/A
ARS1-B22-01990-06	ARS1-22-02717-003	MSC02-120622	Air Filter	EPA 9315	N/A

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QC Sample Results

Analytical Batch: ARS1-B22-02011
Lab Sample ID: ARS1-B22-02011-01
Method: Eichrom ACW03

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/07/23 3:09

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Pu-239/240	7.677E-6	7.568E-6		uCi/filter	98.6	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-02011
Lab Sample ID: ARS1-B22-02011-02
Method: Eichrom ACW03

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/07/23 3:09

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Pu-239/240	7.684E-6	7.972E-6		uCi/filter	103.7	75 - 125	5.2	25	0.563	3

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QC Sample Results

Analytical Batch: ARS1-B22-02011
Lab Sample ID: ARS1-B22-02011-03
Method: Eichrom ACW03

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/07/23 3:09

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Pu-238	-1.822E-8	9.451E-8	1.888E-7	8.208E-8	U	uCi/filter
Pu-239/240	-2.732E-8	1.171E-7	2.279E-7	1.016E-7	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02717

Analytical Batch: ARS1-B22-02011

Analysis: Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-02011-01		Lab Control Sample	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-02		Lab Control Sample Duplicate	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-03		Method Blank	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-04	ARS1-22-02717-001	FBC-120622	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-05	ARS1-22-02717-002	MSC01-120622	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-06	ARS1-22-02717-003	MSC02-120622	Air Filter	Eichrom ACW03	N/A

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QC Sample Results

Analytical Batch: ARS1-B22-02015
Lab Sample ID: ARS1-B22-02015-01
Method: Eichrom SRW01

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/03/23 12:24

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
SR-90	1.950E-5	2.145E-5		uCi/filter	110.0	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-02015
Lab Sample ID: ARS1-B22-02015-02
Method: Eichrom SRW01

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/03/23 12:24

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
SR-90	1.958E-5	2.246E-5		uCi/filter	114.7	75 - 125	4.6	25	0.416	3

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QC Sample Results

Analytical Batch: ARS1-B22-02015
Lab Sample ID: ARS1-B22-02015-03
Method: Eichrom SRW01

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/03/23 12:24

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
SR-90	1.799E-6	2.518E-6	4.243E-6	1.952E-6	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02717

Analytical Batch: ARS1-B22-02015

Analysis: Strontium-90 in (Air Filters, Smears [AF])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-02015-01		Lab Control Sample	Air Filter	Eichrom SRW01	N/A
ARS1-B22-02015-02		Lab Control Sample Duplicate	Air Filter	Eichrom SRW01	N/A
ARS1-B22-02015-03		Method Blank	Air Filter	Eichrom SRW01	N/A
ARS1-B22-02015-08	ARS1-22-02717-001	FBC-120622	Air Filter	Eichrom SRW01	N/A
ARS1-B22-02015-09	ARS1-22-02717-002	MSC01-120622	Air Filter	Eichrom SRW01	N/A
ARS1-B22-02015-10	ARS1-22-02717-003	MSC02-120622	Air Filter	Eichrom SRW01	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00006
Lab Sample ID: ARS1-B23-00006-01
Method: Eichrom ACW10

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/06/23 0:49

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Th-230	5.232E-6	6.206E-6		uCi/filter	118.6	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00006
Lab Sample ID: ARS1-B23-00006-02
Method: Eichrom ACW10

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/06/23 0:49

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Th-230	5.278E-6	6.223E-6		uCi/filter	117.9	75 - 125	0.3	25	0.030	3

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QC Sample Results

Analytical Batch: ARS1-B23-00006
Lab Sample ID: ARS1-B23-00006-03
Method: Eichrom ACW10

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/06/23 0:49

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Th-228	0.000	1.620E-7	3.057E-7	1.360E-7	U	uCi/filter
Th-230	1.238E-7	1.652E-7	2.779E-7	1.222E-7	U	uCi/filter
Th-232	-3.706E-8	7.277E-8	1.743E-7	7.039E-8	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02717

Analytical Batch: ARS1-B23-00006

Analysis: Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00006-01		Lab Control Sample	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-02		Lab Control Sample Duplicate	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-03		Method Blank	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-04	ARS1-22-02717-001	FBC-120622	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-05	ARS1-22-02717-002	MSC01-120622	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-06	ARS1-22-02717-003	MSC02-120622	Air Filter	Eichrom ACW10	N/A

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Analytical Reports

for

Gilbane Federal

Batch QC

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QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-01961**
SDG	**ARS1-22-02717**
Analysis	**Gamma Spec (Short) in (Air Filters, Smears [AF])**
Method	**EPA 901.1M**
Analysis Code	**GAM-A-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	12/16/22 13:39	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDC**
ARS1-B22-01961-01	**LCS**	AM-241	31.791	2.469	33.065	96.1	0.117
ARS1-B22-01961-01	**LCS**	CO-60	22.519	1.191	20.928	107.6	0.444
ARS1-B22-01961-01	**LCS**	CS-137	13.115	0.699	12.996	100.9	0.070

Duplicate RER/DER/RPD

			Analysis Date	12/16/22 13:53	**Analysis Technician**	[redacted]	
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**	
AM-241	31.791	2.469	31.805	2.471	0.008	0.0	
CO-60	22.519	1.191	21.151	1.303	1.519	6.3	
CS-137	13.115	0.699	13.079	0.698	0.071	0.3	

Method Blank

			Analysis Date	12/19/22 14:47	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDC**	**Qual**	
ARS1-B22-01961-03	**MBL**	CO-60	1.679E-4	9.304E-4	0.001	U	
ARS1-B22-01961-03	**MBL**	CS-137	-3.961E-4	8.400E-4	9.750E-4	U	
ARS1-B22-01961-03	**MBL**	RA-226	-0.014	0.015	0.016	U	

QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-01990**
SDG	**ARS1-22-02717**
Analysis	**Radium-226 in Air Filter**
Method	**EPA 9315**
Analysis Code	**GPC-RA226-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/05/23 10:52	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B22-01990-01	**LCS**	RA-226	2.538E-5	4.099E-6	2.713E-5	93.5	7.640E-8

Duplicate RER/DER/RPD

Analysis Date	01/05/23 10:52	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
RA-226	2.538E-5	4.099E-6	2.582E-5	4.165E-6	0.150	1.7

Method Blank

Analysis Date	01/05/23 10:52	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B22-01990-03	**MBL**	RA-226	7.249E-8	6.005E-8	8.416E-8	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-02011**
SDG	**ARS1-22-02717**
Analysis	**Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])**
Method	**Eichrom ACW03**
Analysis Code	**ASP-PU239-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/07/23 03:09	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B22-02011-01	**LCS**	PU-239/240	7.568E-6	9.665E-7	7.677E-6	98.6	5.291E-8

Duplicate RER/DER/RPD

Analysis Date	01/07/23 03:09	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
PU-239/240	7.568E-6	9.665E-7	7.972E-6	1.022E-6	0.563	5.2

Method Blank

Analysis Date	01/07/23 03:09	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B22-02011-03	**MBL**	PU-238	-1.822E-8	9.451E-8	1.888E-7	U
ARS1-B22-02011-03	**MBL**	PU-239/240	-2.732E-8	1.171E-7	2.279E-7	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-02015**
SDG	**ARS1-22-02717**
Analysis	**Strontium-90 in (Air Filters, Smears [AF])**
Method	**Eichrom SRW01**
Analysis Code	**GPC-SR90-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/03/23 12:24	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B22-02015-01	**LCS**	SR-90	2.145E-5	3.276E-6	1.950E-5	110.0	3.688E-7

Duplicate RER/DER/RPD

Analysis Date	01/03/23 12:24	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
SR-90	2.145E-5	3.276E-6	2.246E-5	3.429E-6	0.416	4.6

Method Blank

Analysis Date	01/03/23 12:24	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B22-02015-03	**MBL**	SR-90	1.799E-6	2.518E-6	4.243E-6	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00006**
SDG	**ARS1-22-02717**
Analysis	**Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])**
Method	**Eichrom ACW10**
Analysis Code	**ASP-TH-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/06/23 00:49	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00006-01	**LCS**	TH-230	6.206E-6	8.024E-7	5.232E-6	118.6	5.628E-8

Duplicate RER/DER/RPD

Analysis Date	01/06/23 00:49	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
TH-230	6.206E-6	8.024E-7	6.223E-6	8.106E-7	0.030	0.3

Method Blank

Analysis Date	01/06/23 00:49	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00006-03	**MBL**	TH-228	0.000	1.620E-7	3.057E-7	U
ARS1-B23-00006-03	**MBL**	TH-230	1.238E-7	1.652E-7	2.779E-7	U
ARS1-B23-00006-03	**MBL**	TH-232	-3.706E-8	7.277E-8	1.743E-7	U

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Analytical Reports

for

Gilbane Federal

Sample Management Records

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # KT121422 RADC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: ARS Aleut Analytical (AAA), Port Allen, LA	Event: **Parcel C Air Monitoring RAD**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 2609 North River Road, Port Allen, LA 70767-3469	

Comments:

Please see edits in red 1/19/23

[redacted]

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	1x Filter, None
5	1x 250-mL Plastic, 4 Degrees C
15	1x 250-mL Plastic, 4 Degrees C

Event: Parcel C Air Monitoring RAD

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: E901.1 - Gamma Spec Air (15)	E905.0 - Sr-90 (5)	RC0240 - Pu Isotopes (15)	SW9315 - Ra226 (1)	A01RM - Th-232 (15)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	~~FB-120622~~ FBC-120622	AQ	12/06/22	0900	[redacted]	X	X	X	X	X	FIELDQC	AB1	0.00	0.00	1	
2	MSC01-120622	A	12/08/22	1420		X	X	X	X	X	MSC01	N1	0.00	0.00	1	
3	MSC02-120622	A	12/08/22	1408		X	X	X	X	X	MSC02	N1	0.00	0.00	1	
4																
5																
6																

[redacted] 12/13/22

Turnaround Time: NA

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/13/22	1500	Fedex	12/13/22	1500
			[redacted]	12/14/22	1015

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/13/22 FedEx/ 7705 0216 9214

Received by Laboratory: *(Signature, Date, Time)* **& condition**

GES.Navy_COC_Field
November 15, 2022

SDG Report - Samples and Containers

SDG Specific Data							
SDG	ARS1-22-02717			TAT Days	28 Calendar Days	Project Type	Environmental
Sample Count	3	Rpt Level	4	Date Received	12/14/2022	COC Number	KT121422 RADC
Client	Gilbane Federal			Discrepancy Resol	N/A	PO Number	
Client Code	1138			Client Deadline	01/13/2023	Job Number	J310000600
Profile Number	PN-01440					Job Location	Hunters Point Shipyard, Parcel C Removal Site Evaluation
Comment							

Samples and Containers Checked In Thus Far

FR	Name	Matrix	Start Date	End Date	Disp	Hold	Arch	Storage	Comments
001	FBC-120622	Air Filter	12/06/2022 07:59	12/06/2022 08:00	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	428388	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/06/2022 07:59	AF Volume (CuM):		0.001		
002	MSC01-120622	Air Filter	12/08/2022 14:19	12/08/2022 14:20	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	428389	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/08/2022 14:19	AF Volume (CuM):		0.001		
003	MSC02-120622	Air Filter	12/08/2022 14:07	12/08/2022 14:08	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	428390	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/08/2022 14:07	AF Volume (CuM):		0.001		

SDG Report - Analysis Assignments

SDG	ARS1-22-02717	Sample Count	3
Client	Gilbane Federal	Analysis Count	5-15

Sample Count Totals Per Analysis

Analysis Code	Analysis Description	In/Out	Samples Count
ASP-PU239-AF	Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])	I	3
ASP-TH-AF	Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])	I	3
GAM-A-AF	Gamma Spec (Short) in (Air Filters, Smears [AF])	I	3
GPC-RA226-AF	Radium-226 in Air Filter	I	3
GPC-SR90-AF	Strontium-90 in (Air Filters, Smears [AF])	I	3

Analyses Assigned Per Fraction

Fraction	Analysis Code	X = Assigned
001	ASP-PU239-AF	X
001	ASP-TH-AF	X
001	GAM-A-AF	X
001	GPC-RA226-AF	X
001	GPC-SR90-AF	X
002	ASP-PU239-AF	X
002	ASP-TH-AF	X
002	GAM-A-AF	X
002	GPC-RA226-AF	X
002	GPC-SR90-AF	X
003	ASP-PU239-AF	X
003	ASP-TH-AF	X
003	GAM-A-AF	X
003	GPC-RA226-AF	X
003	GPC-SR90-AF	X

Client Name: Gilbane Federal Profile Name: Parcel C Rad Sampling Report Level: 4

Analysis Code	Prep Type	Units	Aliquot	Prep Code	Procedure	Count Time					
ASP-PU239-AF	WRAD	uCi	filter	N/A	PALA-RAD-026						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Pu-239/240 (15117-48-3)			4.8E-08 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
ASP-TH-AF	WRAD	uCi	filter	N/A	PALA-RAD-031						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Th-232 (7440-29-1)			1.4E-08 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GAM-A-AF	WGAM	uCi	filter	N/A	PALA-RAD-007						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Co-60 (10198-40-0)			0.00024 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
	Cs-137 (10045-97-3)			0.00048 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
	Ra-226 (13982-63-3)			4.4E-06 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GPC-RA226-AF	WRAD	uCi	filter		PALA-RAD-008						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Ra-226 (13982-63-3)			4.4E-06 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GPC-SR90-AF	WRAD	uCi	filter	N/A	PALA-RAD-032						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Sr-90 (10098-97-2)			2.4E-05 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A

Analysis Code	Fraction	Units	Aliquot	Conductivity	Analyte Count
ASP-PU239-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	

ASP-PU239-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	
ASP-PU239-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	
ASP-TH-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
ASP-TH-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
ASP-TH-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
GAM-A-AF	001	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GAM-A-AF	002	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GAM-A-AF	003	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GPC-RA226-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	

GPC-RA226-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	
GPC-RA226-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	
GPC-SR90-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	
GPC-SR90-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	
GPC-SR90-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	

Sample Custodian: [redacted] Survey Start Date: 12/14/22 Survey Start Time: 1048

Thermometer ID: E0064010085 Calibration Due Date: 2/28/23 pH Paper Lot#: NA

Exposure Rate Meter + Probe Unit ID: 2692264 Calibration Due Date: 9/13/23 Background: 4 µR/hr

Count Rate Meter + Probe Unit ID: PR287372 Calibration Due Date: 9/13/23 Background: 20 cpm

Delivery Type (circle one): Direct Lock Box (Commercial Carrier: FEDEX) Total # of ESCs: 1

*True temperature is recorded which includes any applicable correction factors.

External Shipping Container Tracking:	Exposure Rate (µR/hr) (limit <500 µR/hr)	Max External Swipe Counts (cpm)	Max Internal Swipe Counts (cpm)	ESC True Temps* (°C)	TRAX Matrix ID (circle all that apply): (See Section 4.3 of SOP)
A: 770502169214	6	30	30	NA	AQ WD WG WO
B:					WS WW SI UR
C:					SO OL BI VG
D:					WP SM (AF)
E:					
F:					

Visual Inspection: External Shipping Container	(Circle response)		
Good Condition with no Leaks or Tears	(Yes)	No	
Marked Radioactive	Yes	(No)	
UN2910	Yes	(No)	
Security Seals	(Yes)	No	
If yes, intact?	(Yes)	No	N/A
Internal Shipping Container			
COC's Present	(Yes)	No	
Well packaged container with no signs of leakage	(Yes)	No	

COC/Sample Inspection	(Circle response)		
Sample Containers in good condition	(Yes)	No	
No spills or leaks	(Yes)	No	
Marked Radioactive	Yes	(No)	
Durable labels w/indelible ink	(Yes)	No	
COC reliquished/received correctly	(Yes)	No	
Adequate volume/filled correctly	(Yes)	No	
Hold Time sufficient for analysis	(Yes)	No	
For VOC/Radon, Head space?	Yes	No	(N/A)
If yes, <6mm?	Yes	No	(N/A)
# of containers received matches # on COC	(Yes)	No	
Samples received on ice?	Yes	(No)	
Type (circle one):	Bagged Ice	Loose Ice	Blue Ice (N/A)

Comments:

ARS Aleut Analytical

PALA Sample Survey Fo

Client Name: Gilbane

SDG: ARS1-22-02717

Sample Survey Form
PALA-SR-001-FM-02 r 0.1
Effective 08/30/2019

Pipette ID: NA Tip Lot#: NA

Disposible pipette lot#: NA

Sample ID from Client on COC or Sample	ESC Letter	Sample Container Type	Approx. Fill Level (%)	pH <2 is Acceptable: pH As Rec'd	pH <2 is Acceptable: pH Adjusted	Acid Lot # or Ind container temp (°C)	Vol. of Acid Used (mL)	Acceptance Limits <100 cpm/cm: cpm
FB-120622	A	ziploc	25	NA	NA	NA	NA	30
MSC01-120622	↓	↓	↓	↓	↓	↓	↓	↓
MSC02-120622	↓	↓	↓	↓	↓	↓	↓	↓

Sample Custodian: [redacted] Survey End Date: 12/14/22 Survey/pH End Time: 1054

pH re-check required? YES or NO

NOTE: Any metals sample acidified at sample receiving must be re-checked after a 24 hour hold.

If YES: pH re-check date/time: _____/_____ Analyst: _____ pH strip lot #: _____

Were all re-checked samples' pH < 2? YES or NO*

**If no, complete and send to Project Management:*
1. Section A of PALA-SR-001-FM-05 (24 Hour Hold pH Readjustment)
2. SR section of PALA-SR-001-FM-03 (Discrepant Sample Receipt Report).

ENVIRONMENTAL SOLUTIONS | QUALITY CONSCIOUS

Page ____ of ____

√

ORIGIN ID:JCCA [redacted]
[redacted]
200 FISHER STREET
SAN FRANCISCO, CA 94124
UNITED STATES US

SHIP DATE: 16NOV22
ACTWGT: 1.00 LB
CAD: 254128867/INET4530

BILL SENDER

TO [redacted]

ARS ALEUT ANALYTICAL, LLC
2609 NORTH RIVER ROAD

PORT ALLEN LA 70767
(225) 381-2991 REF: J31000.600 01.21.05
INV:
PO: DEPT:

581J6/E4B0/FE2D

FedEx Express

J224222101801uw

THU - 17 NOV 4:30P
STANDARD OVERNIGHT

TRK# 0201 **7705 0216 9214**

XN OPLA

70767
LA-US **MSY**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

[redacted]

From: [redacted]
Sent: Thursday, January 19, 2023 12:10
To: [redacted]
Cc: Project Managers AAA
Subject: Revisions needed: SDG ARS1-22-02717
Attachments: [redacted]121422RADC COC Rev 1 (SDG ARS1-22-02717).pdf

[redacted]

May we have a revised lab report and EDD?

FB-120622 should be FBC-120622. I've attached a revised COC.

My apologies for the inconvenience.

Please let me know if you have any questions or concerns.

Thank you,

[redacted]
Chemist I
GES | MBE
6790 S Dawson Cir
Centennial, CO 80112
[redacted]
GES-AIS.COM

From: [redacted]
Sent: Wednesday, January 11, 2023 1:42 PM
To: [redacted]
Cc: Project Managers AAA <ProjectManagers@aaa.aleutfederal.com>
Subject: RE: Gilbane uploading errors [ARS1-22-02717]

⚠ **CAUTION: EXTERNAL SENDER** *This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.*
It worked thank you! The EDD and PDF for ARS1-22-02717 have both been certified and uploaded.

Thanks very much,
[redacted]

[redacted]
Project Manager
ARS Aleut Analytical, LLC
2609 North River Road
Port Allen, LA 70767
[redacted]
Port Allen, Louisiana
ATAQAN AKUN • "We Are One"

From: [redacted]
Sent: Wednesday, January 11, 2023 14:38
To: [redacted]
Cc: Project Managers AAA <ProjectManagers@aaa.aleutfederal.com>
Subject: RE: Gilbane uploading errors [ARS1-22-02717]

[redacted]

I had to make another update. Please reupload and try again. Sorry for all the back/forth. Our database manager is out and I am troubleshooting the errors hoping for the best. I think it will be fine now.

Also, the lab report can be uploaded. The EDD errors do not prevent the ability to upload the PDF lab report.

Thank you,

[redacted]
Chemist I
GES | MBE
6790 S Dawson Cir
Centennial, CO 80112
[redacted]
GES-AIS.COM

From: [redacted]
Sent: Wednesday, January 11, 2023 1:35 PM
To: [redacted]
Cc: Project Managers AAA <ProjectManagers@aaa.aleutfederal.com>
Subject: RE: Gilbane uploading errors [ARS1-22-02717]

We are still receiving the attached error—is this something you can resolve on your end?

Thanks very much,

[redacted]

Port Allen, Louisiana

[redacted]
Project Manager
ARS Aleut Analytical, LLC
2609 North River Road
Port Allen, LA 70767
[redacted]
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From: [redacted]
Sent: Wednesday, January 11, 2023 14:04
To: [redacted]
<[redacted]
Cc: Project Managers AAA <ProjectManagers@aaa.aleutfederal.com>
Subject: RE: Gilbane uploading errors [ARS1-22-02717]

[redacted]

We have updated the database on our end. Can you reupload the EDD and certify?

My apologies for any delays.

Thank you,

[redacted]
Chemist I
GES | MBE
6790 S Dawson Cir
Centennial, CO 80112
[redacted]
GES-AIS.COM

From: [redacted]
Sent: Wednesday, January 11, 2023 9:06 AM
To: [redacted]
Cc: Project Managers AAA <ProjectManagers@aaa.aleutfederal.com>
Subject: Gilbane uploading errors [ARS1-22-02717]

⚠ **CAUTION: EXTERNAL SENDER** *This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.*

Good morning,

We are getting the attached errors when the EDD is uploaded. Can you please verify what the correct sample collection date is? The chain we received, attached above, says 12/08/22 but your field log says 12/06/22.

Thanks very much,

[redacted]

Our lab will be closed on January 16th in observance of MLK Day

ALEUT

Port Allen, Louisiana

[redacted]
Project Manager
ARS Aleut Analytical, LLC
2609 North River Road
Port Allen, LA 70767
[redacted]
ATAQAN AKUN • "We Are One"

2609 North River Road
Port Allen, Louisiana 70767
(225) 228-1394

ARS Aleut Analytical, LLC

Laboratory Analytical Report

ARS1-22-02758

Gilbane Federal
[redacted]
1655 Grant Street
Suite 1200
Concord, CA 94520
[redacted]

COC Number: **MC121622RADC**
Job Number: **J310000600**
Job Location: **Hunters Point Shipyard, Parcel C Removal Site Evaluation**
Project Name: **Parcel C Air Monitoring RAD**

Questions regarding this analytical report should be addressed to ARS project manager, [redacted] who can be reached by email at projectmanagers@aaa.aleutfederal.com.

I certify that the test results presented in this report (in either hardcopy or electronic file (EDD)) meet the requirements of the laboratory's certifications and other applicable contract terms and conditions. A full list of the Port Allen, LA laboratory's certifications is provided with this report. Any exceptions to the certification or contract will be noted within the case narratives presented in the report. Any subcontracted sample results will be identified within the case narratives presented in the report. In the event this report is an amendment to a previously released report, the case narrative will clearly identify the original report as well as the reason(s) for reissuance. A statement of uncertainty for each analysis is available upon request. I authorize release and issuance of this report on the date signed below.

[redacted] Laboratory Management, ARS Aleut Analytical

Signature **Date** **Title**

This report provides analytical results of the requested analysis and does not include any opinions or interpretations. ARS Aleut Analytical, LLC assumes no liability for the use or interpretation of analytical results. Results relate only to items tested. A partial reproduction of this test report is prohibited. Reproduction of this report in full requires the written approval of the laboratory.

LELAP Cert # 01949

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(225) 228-1394

Table Of Contents

Certifications and Accreditations List

State or Accrediting Body (AB)	Certificate Number
AIHA LAP, LLC	209312
Alaska	LA01131
California	3085
ANAB DoD	ADE-1489
ANAB DOE	ADE-1489.01
Louisiana DEQ - NELAC	01949
Louisiana DHH	LA022
Nevada	LA011312023-1
New Jersey	LA009
New York	65039
Pennsylvania	68-04294-011
Texas	T104704447-22-18
Utah	LA011312022-13
Washington	C1010

For additional information related to the specific matrices, methods,and analytes recognized by each accrediting body, contact us at QA@aaa.aleutfederal.com for additional information.

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ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Case Narrative

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

PROJECT SAMPLE IDENTIFICATION CROSS-REFERENCE
TO ARS SAMPLE LABORATORY IDs

Client Sample ID	ARS Aleut Analytical Sample ID
FBC-121222	ARS1-22-02758-001
MSC01-121222	ARS1-22-02758-002
MSC02-121222	ARS1-22-02758-003

Sample	Date Collected	Date Received	Analysis	Basis	Prep Date/Time	Analysis Date/Time
001	12/12/22 08:00	12/20/22	ASP-PU239-AF	As Received	12/28/22 07:31	01/07/23 03:09
001	12/12/22 08:00	12/20/22	ASP-TH-AF	As Received	01/03/23 10:20	01/06/23 00:49
001	12/12/22 08:00	12/20/22	GAM-A-AF	As Received	N/A	12/21/22 14:13
001	12/12/22 08:00	12/20/22	GPC-RA226-AF	As Received	01/03/23 08:12	01/11/23 12:35
001	12/12/22 08:00	12/20/22	GPC-SR90-AF	As Received	01/10/23 13:08	01/12/23 12:26
002	12/15/22 14:37	12/20/22	ASP-PU239-AF	As Received	12/28/22 07:31	01/07/23 03:09
002	12/15/22 14:37	12/20/22	ASP-TH-AF	As Received	01/03/23 10:20	01/06/23 00:49
002	12/15/22 14:37	12/20/22	GAM-A-AF	As Received	N/A	12/21/22 14:15
002	12/15/22 14:37	12/20/22	GPC-RA226-AF	As Received	01/03/23 08:12	01/11/23 12:35
002	12/15/22 14:37	12/20/22	GPC-SR90-AF	As Received	01/10/23 13:08	01/12/23 12:26
003	12/15/22 14:37	12/20/22	ASP-PU239-AF	As Received	12/28/22 07:31	01/07/23 03:09
003	12/15/22 14:37	12/20/22	ASP-TH-AF	As Received	01/03/23 10:20	01/06/23 00:49
003	12/15/22 14:37	12/20/22	GAM-A-AF	As Received	N/A	12/21/22 14:20
003	12/15/22 14:37	12/20/22	GPC-RA226-AF	As Received	01/03/23 08:12	01/11/23 12:35
003	12/15/22 14:37	12/20/22	GPC-SR90-AF	As Received	01/10/23 13:08	01/12/23 12:26

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SAMPLE RECEIPT/PREP

The samples arrived in good condition. The samples were screened for radioactive contamination as per procedure **PALA-SR-001-SOP Sample Receiving**. Sample date(s) and time(s) are listed as provided by the client. In regard to the Air Filters, no flow rate information was provided by the client. Turnaround time was set at 28 calendar days.

ANALYTICAL METHODS

Pu-239/240 analysis was performed using **PALA-RAD-026, "Americium, Plutonium and Uranium in Water, Soil and Vegetation Matrices by Sequential Separation Using Eichrom Stabilized Chemistry Resin (with Vacuum Box System Option) (Eichrom ACW-02 & Eichrom ACW-03)"**.

Th-232 analysis was performed using **PALA-RAD-031, "Thorium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom ACW-08 & Eichrom ACW-10)"**.

Co-60, Cs-137, Ra-226 analyses were performed using **PALA-RAD-007, "Modified Gamma Emitting Radionuclides in Soil, Air, and Biota Matrices (EPA 901.1 Mod, SM 7120B, & HASL-300 Ga-01-R)"**.

Ra-226 analysis was performed using **PALA-RAD-008, "Alpha Emitting Radium Isotopes (EPA 903.0, EPA 9315, SM 7500-Ra C, SM 7500-Ra C)"**.

Sr-90 analysis was performed using **PALA-RAD-032, "Strontium 89, 90 and Total Strontium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom SRW01, EPA 905.0, HASL 300 Sr-01-RC)"**.

ANALYTICAL RESULTS

Fraction 001 has elevated MDC for Pu-239/240 with ACT of -5.509E-8 uCi/filter, MDC of 1.836E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 001 has elevated MDC for Th-232 with ACT of 5.275E-8 uCi/filter, MDC of 6.125E-8 uCi/filter and CRDL of 1.4E-08 uCi/filter.
Fraction 001 has elevated MDC for Ra-226 with ACT of -2.586E-5 uCi/filter, MDC of 1.578E-5 uCi/filter and CRDL of 4.4E-06 uCi/filter.
Fraction 002 has elevated MDC for Pu-239/240 with ACT of -9.097E-9 uCi/filter, MDC of 1.713E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 002 has elevated MDC for Th-232 with ACT of 2.912E-8 uCi/filter, MDC of 7.840E-8 uCi/filter and CRDL of 1.4E-08 uCi/filter.
Fraction 002 has elevated MDC for Ra-226 with ACT of -1.980E-5 uCi/filter, MDC of 1.441E-5 uCi/filter and CRDL of 4.4E-06 uCi/filter.
Fraction 003 has elevated MDC for Pu-239/240 with ACT of -1.345E-7 uCi/filter, MDC of 2.638E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 003 has elevated MDC for Ra-226 with ACT of 1.107E-6 uCi/filter, MDC of 9.332E-6 uCi/filter and CRDL of 4.4E-06 uCi/filter.

ARS1-B22-02011: ROI's adjusted to better fit the peaks of interest.

ARS1-B23-00001: The Method Blank had a detect for Ra-226. All client fractions either had activities over 5x the blank activity or were non-detects for Ra-226, therefore the activity in the Method Blank did not contribute to the concentration in client samples. All positive detects for Ra-226 in this analytical batch are qualified with a “B”.

ARS1-B23-00006: ROI's adjusted to better fit the peaks of interest.

Notes (Case Narrative)

Definitions:

CRDL	Contract Required Detection Limit
CSU	Combined Standard Uncertainty
DLC	Decision Level Concentration (ANSI N42.23)
DO	Duplicate Original
DUP	Sample Duplicate
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MBL	Method Blank
MCL	Maximum Contaminant Level
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
N/A	Not Applicable
NC	Not Calculated
NP	Not Provided
NR	Not Referenced
PQL	Practical Quantitation Limit

Data Qualifiers:

B	The result of both the method blank and the target sample are above the MDL.
D	Sample analysis accomplished through dilution.
J	The reported result is an estimated value above the LOD but below the LOQ, or above the MDL but below the PQL.
Q	One or more quality control criteria failed.
U	Result is below the MDA, MDL, PQL, LOD, or LOQ
*	LCS/LCSD or Sample DUP fails all Duplicate criteria.
S	Spike
SC	Subcontracted out to another qualified laboratory
H	Holding time exceeded
E	Exceeds MCL
**	Reporting Limit is higher than MCL; Target cannot be detected
ǂ	Method/Matrix/Analyte not accredited for this certification

Radiochemistry Comments:

1.0) All MDA/MDC values are calculated on a sample specific basis.

2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.

3.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.

4.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228 (Gamma Spectroscopy only).

5.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234 (Gamma Spectroscopy only).

6.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).

7.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected (Gamma Spectroscopy only).

8.0) Gamma spectroscopy results are calculated values based on the **ORTEC®** GammaVision ENV32 Analysis Engine.

9.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Non-Potable Water**:
Gross Alpha and Gross Beta (EPA 900.0, EPA 9310); Radium 226 (EPA 903.0, EPA 903.1, EPA 9315); Radium 228 (EPA 904.0, EPA 9320); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7470A); Strontium-89 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-02-RC); Tritium (EPA 906.0); Enriched Tritium (ARS-040), Carbon-14 (ARS-019), Tritium/Carbon (ARS-151); Gamma Emitters (EPA 901.1, SM 7120B, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-03); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Pu-10); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03); Technetium-99 (Eichrom TCW02)

10.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Solid and Chemical Materials**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7471B); Strontium-89 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-02); Tritium (EPA 906.0 Mod); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-01-RC); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Pu-02-RC, HASL 300 Pu-03-RC); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03, HASL 300 U-02, HASL 300 U-04); Technetium-99 (Eichrom TCS01)

11.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Air and Emissions**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); Strontium-89 (Eichrom SRW01, HASL 300 Sr-01-RC); Strontium-90 (Eichrom SRW01, HASL 300 Sr-02-RC); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03); Technetium-99 (Eichrom TCW02, Eichrom TCS01)

General Comments:

1.0 Modified analysis procedures are procedures that are modified to meet certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "M" or "Mod" to the procedure number (i.e. 901.1M, 901.1 Mod).

2.0 All NIOSH method results are reported without blank corrections applied.

3.0 Basis: "As Received" = analyzed as received from client; "Dry" = dried prior to being analyzed; "Dry Weight Corrected" = analyzed as received; result corrected for percent moisture.

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(225) 228-1394

ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Analytical Results

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

ARS Sample Delivery Group: ARS1-22-02758
Client Sample ID: FBC-121222
Sample Collection Date: 12/12/22 8:00
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02758-001
Date Received: 12/20/22
Report Date: 01/19/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-5.509E-8	7.814E-8	1.836E-7	7.689E-8	4.8E-08	U	uCi/filter	01/07/23 3:09	[redacted]	37.3%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	5.275E-8	4.522E-8	6.125E-8	2.169E-8	1.4E-08	U	uCi/filter	01/06/23 0:49	[redacted]	61.2%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-4.363E-7	9.460E-7	1.029E-6	5.145E-7	0.00024	U	uCi/filter	12/21/22 14:13	[redacted]	N/A
Cs-137	-4.290E-7	8.427E-7	9.767E-7	4.884E-7	0.00048	U	uCi/filter	12/21/22 14:13	[redacted]	N/A
Ra-226	-2.586E-5	1.490E-5	1.578E-5	7.890E-6	4.4E-06	U	uCi/filter	12/21/22 14:13	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	1.161E-6	6.660E-7	7.266E-7	2.704E-7	4.4E-06	B	uCi/filter	01/11/23 12:35	[redacted]	94.8%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	3.421E-7	2.136E-6	3.818E-6	1.764E-6	2.4E-05	U	uCi/filter	01/12/23 12:26	[redacted]	97.8%

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ARS Sample Delivery Group: ARS1-22-02758
Client Sample ID: MSC01-121222
Sample Collection Date: 12/15/22 14:37
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02758-002
Date Received: 12/20/22
Report Date: 01/19/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-9.097E-9	8.552E-8	1.713E-7	7.331E-8	4.8E-08	U	uCi/filter	01/07/23 3:09	[redacted]	47.1%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	2.912E-8	4.526E-8	7.840E-8	2.934E-8	1.4E-08	U	uCi/filter	01/06/23 0:49	[redacted]	55.5%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	7.834E-7	7.941E-7	7.981E-7	3.991E-7	0.00024	U	uCi/filter	12/21/22 14:15	[redacted]	N/A
Cs-137	4.097E-7	7.300E-7	8.145E-7	4.073E-7	0.00048	U	uCi/filter	12/21/22 14:15	[redacted]	N/A
Ra-226	-1.980E-5	1.082E-5	1.441E-5	7.205E-6	4.4E-06	U	uCi/filter	12/21/22 14:15	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	5.401E-7	4.837E-7	6.899E-7	2.592E-7	4.4E-06	U	uCi/filter	01/11/23 12:35	[redacted]	97.4%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	8.631E-7	2.765E-6	4.821E-6	2.263E-6	2.4E-05	U	uCi/filter	01/12/23 12:26	[redacted]	97.8%

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ARS Sample Delivery Group: ARS1-22-02758
Client Sample ID: MSC02-121222
Sample Collection Date: 12/15/22 14:37
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02758-003
Date Received: 12/20/22
Report Date: 01/19/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-1.345E-7	1.210E-7	2.638E-7	1.179E-7	4.8E-08	U	uCi/filter	01/07/23 3:09	[redacted]	39.4%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	7.558E-8	4.773E-8	2.048E-8	0.000	1.4E-08		uCi/filter	01/06/23 0:49	[redacted]	52.1%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	2.630E-7	7.739E-7	7.947E-7	3.974E-7	0.00024	U	uCi/filter	12/21/22 14:20	[redacted]	N/A
Cs-137	-4.105E-7	7.758E-7	8.346E-7	4.173E-7	0.00048	U	uCi/filter	12/21/22 14:20	[redacted]	N/A
Ra-226	1.107E-6	7.366E-6	9.332E-6	4.666E-6	4.4E-06	U	uCi/filter	12/21/22 14:20	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	1.390E-6	7.256E-7	6.780E-7	2.381E-7	4.4E-06	B	uCi/filter	01/11/23 12:35	[redacted]	89.3%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	-5.775E-7	2.153E-6	3.996E-6	1.851E-6	2.4E-05	U	uCi/filter	01/12/23 12:26	[redacted]	99.4%

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QC Summary

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QC Sample Results

Analytical Batch: ARS1-B22-01989
Lab Sample ID: ARS1-B22-01989-01
Method: EPA 901.1M

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 12/21/22 13:52

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Am-241	33.065	31.641		uCi/filter	95.7	75 - 125
Co-60	20.928	21.464		uCi/filter	102.6	75 - 125
Cs-137	12.996	13.318		uCi/filter	102.5	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-01989
Lab Sample ID: ARS1-B22-01989-02
Method: EPA 901.1M

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 12/21/22 14:07

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Am-241	33.065	31.566		uCi/filter	95.5	75 - 125	0.2	25	0.042	3
Co-60	20.928	21.785		uCi/filter	104.1	75 - 125	1.5	25	0.359	3
Cs-137	12.996	13.362		uCi/filter	102.8	75 - 125	0.3	25	0.086	3

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QC Sample Results

Analytical Batch: ARS1-B22-01989
Lab Sample ID: ARS1-B22-01989-03
Method: EPA 901.1M

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 12/21/22 14:12

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Co-60	1.375E-4	0.002	0.002	8.650E-4	U	uCi/filter
Cs-137	-1.193E-4	0.001	0.002	8.000E-4	U	uCi/filter
Ra-226	-0.071	0.024	0.031	0.015	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02758 **Analytical Batch:** ARS1-B22-01989

Analysis: Gamma Spec (Short) in (Air Filters, Smears [AF])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-01989-01		Lab Control Sample	Air Filter	EPA 901.1M	N/A
ARS1-B22-01989-02		Lab Control Sample Duplicate	Air Filter	EPA 901.1M	N/A
ARS1-B22-01989-03		Method Blank	Air Filter	EPA 901.1M	N/A
ARS1-B22-01989-04	ARS1-22-02758-001	FBC-121222	Air Filter	EPA 901.1M	N/A
ARS1-B22-01989-05	ARS1-22-02758-002	MSC01-121222	Air Filter	EPA 901.1M	N/A
ARS1-B22-01989-06	ARS1-22-02758-003	MSC02-121222	Air Filter	EPA 901.1M	N/A

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QC Sample Results

Analytical Batch: ARS1-B22-02011
Lab Sample ID: ARS1-B22-02011-01
Method: Eichrom ACW03

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/07/23 3:09

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Pu-239/240	7.677E-6	7.568E-6		uCi/filter	98.6	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-02011
Lab Sample ID: ARS1-B22-02011-02
Method: Eichrom ACW03

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/07/23 3:09

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Pu-239/240	7.684E-6	7.972E-6		uCi/filter	103.7	75 - 125	5.2	25	0.563	3

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QC Sample Results

Analytical Batch: ARS1-B22-02011
Lab Sample ID: ARS1-B22-02011-03
Method: Eichrom ACW03

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/07/23 3:09

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Pu-238	-1.822E-8	9.451E-8	1.888E-7	8.208E-8	U	uCi/filter
Pu-239/240	-2.732E-8	1.171E-7	2.279E-7	1.016E-7	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02758

Analytical Batch: ARS1-B22-02011

Analysis: Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-02011-01		Lab Control Sample	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-02		Lab Control Sample Duplicate	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-03		Method Blank	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-11	ARS1-22-02758-001	FBC-121222	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-12	ARS1-22-02758-002	MSC01-121222	Air Filter	Eichrom ACW03	N/A
ARS1-B22-02011-13	ARS1-22-02758-003	MSC02-121222	Air Filter	Eichrom ACW03	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00001
Lab Sample ID: ARS1-B23-00001-01
Method: EPA 9315

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/11/23 12:35

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Ra-226	2.710E-5	2.398E-5		uCi/filter	88.5	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00001
Lab Sample ID: ARS1-B23-00001-02
Method: EPA 9315

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/11/23 12:35

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Ra-226	2.718E-5	2.055E-5		uCi/filter	75.6	75 - 125	15.4	25	1.318	3

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QC Sample Results

Analytical Batch: ARS1-B23-00001
Lab Sample ID: ARS1-B23-00001-03
Method: EPA 9315

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/11/23 12:35

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Ra-226	9.222E-8	5.955E-8	7.173E-8	2.711E-8		uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02758

Analytical Batch: ARS1-B23-00001

Analysis: Radium-226 in Air Filter

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00001-01		Lab Control Sample	Air Filter	EPA 9315	N/A
ARS1-B23-00001-02		Lab Control Sample Duplicate	Air Filter	EPA 9315	N/A
ARS1-B23-00001-03		Method Blank	Air Filter	EPA 9315	N/A
ARS1-B23-00001-04	ARS1-22-02758-001	FBC-121222	Air Filter	EPA 9315	N/A
ARS1-B23-00001-05	ARS1-22-02758-002	MSC01-121222	Air Filter	EPA 9315	N/A
ARS1-B23-00001-06	ARS1-22-02758-003	MSC02-121222	Air Filter	EPA 9315	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00006
Lab Sample ID: ARS1-B23-00006-01
Method: Eichrom ACW10

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/06/23 0:49

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Th-230	5.232E-6	6.206E-6		uCi/filter	118.6	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00006
Lab Sample ID: ARS1-B23-00006-02
Method: Eichrom ACW10

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/06/23 0:49

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Th-230	5.278E-6	6.223E-6		uCi/filter	117.9	75 - 125	0.3	25	0.030	3

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QC Sample Results

Analytical Batch: ARS1-B23-00006
Lab Sample ID: ARS1-B23-00006-03
Method: Eichrom ACW10

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/06/23 0:49

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Th-228	0.000	1.620E-7	3.057E-7	1.360E-7	U	uCi/filter
Th-230	1.238E-7	1.652E-7	2.779E-7	1.222E-7	U	uCi/filter
Th-232	-3.706E-8	7.277E-8	1.743E-7	7.039E-8	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02758

Analytical Batch: ARS1-B23-00006

Analysis: Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00006-01		Lab Control Sample	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-02		Lab Control Sample Duplicate	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-03		Method Blank	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-07	ARS1-22-02758-001	FBC-121222	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-08	ARS1-22-02758-002	MSC01-121222	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00006-09	ARS1-22-02758-003	MSC02-121222	Air Filter	Eichrom ACW10	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00054
Lab Sample ID: ARS1-B23-00054-01
Method: Eichrom SRW01

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/12/23 12:26

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
SR-90	2.006E-5	2.115E-5		uCi/filter	105.4	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00054
Lab Sample ID: ARS1-B23-00054-02
Method: Eichrom SRW01

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/12/23 12:26

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
SR-90	2.006E-5	2.055E-5		uCi/filter	102.4	75 - 125	2.9	25	0.262	3

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QC Sample Results

Analytical Batch: ARS1-B23-00054
Lab Sample ID: ARS1-B23-00054-03
Method: Eichrom SRW01

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/12/23 12:26

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
SR-90	2.430E-7	2.259E-6	4.070E-6	1.875E-6	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02758

Analytical Batch: ARS1-B23-00054

Analysis: Strontium-90 in (Air Filters, Smears [AF])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00054-01		Lab Control Sample	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00054-02		Lab Control Sample Duplicate	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00054-03		Method Blank	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00054-04	ARS1-22-02758-001	FBC-121222	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00054-05	ARS1-22-02758-002	MSC01-121222	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00054-06	ARS1-22-02758-003	MSC02-121222	Air Filter	Eichrom SRW01	N/A

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QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-01989**
SDG	**ARS1-22-02758**
Analysis	**Gamma Spec (Short) in (Air Filters, Smears [AF])**
Method	**EPA 901.1M**
Analysis Code	**GAM-A-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	12/21/22 13:52	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDC**
ARS1-B22-01989-01	**LCS**	AM-241	31.641	2.458	33.065	95.7	0.120
ARS1-B22-01989-01	**LCS**	CO-60	21.464	1.320	20.928	102.6	0.410
ARS1-B22-01989-01	**LCS**	CS-137	13.318	0.709	12.996	102.5	0.066

Duplicate RER/DER/RPD

			Analysis Date	12/21/22 14:07	**Analysis Technician**	[redacted]	
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**	
AM-241	31.641	2.458	31.566	2.452	0.042	0.2	
CO-60	21.464	1.320	21.785	1.153	0.359	1.5	
CS-137	13.318	0.709	13.362	0.712	0.086	0.3	

Method Blank

			Analysis Date	12/21/22 14:12	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDC**	**Qual**	
ARS1-B22-01989-03	**MBL**	CO-60	1.375E-4	0.002	0.002	U	
ARS1-B22-01989-03	**MBL**	CS-137	-1.193E-4	0.001	0.002	U	
ARS1-B22-01989-03	**MBL**	RA-226	-0.071	0.024	0.031	U	

QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-02011**
SDG	**ARS1-22-02758**
Analysis	**Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])**
Method	**Eichrom ACW03**
Analysis Code	**ASP-PU239-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/07/23 03:09	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B22-02011-01	**LCS**	PU-239/240	7.568E-6	9.665E-7	7.677E-6	98.6	5.291E-8

Duplicate RER/DER/RPD

Analysis Date	01/07/23 03:09	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
PU-239/240	7.568E-6	9.665E-7	7.972E-6	1.022E-6	0.563	5.2

Method Blank

Analysis Date	01/07/23 03:09	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B22-02011-03	**MBL**	PU-238	-1.822E-8	9.451E-8	1.888E-7	U
ARS1-B22-02011-03	**MBL**	PU-239/240	-2.732E-8	1.171E-7	2.279E-7	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00001**
SDG	**ARS1-22-02758**
Analysis	**Radium-226 in Air Filter**
Method	**EPA 9315**
Analysis Code	**GPC-RA226-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/11/23 12:35	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00001-01	**LCS**	RA-226	2.398E-5	3.872E-6	2.710E-5	88.5	7.315E-8

Duplicate RER/DER/RPD

Analysis Date	01/11/23 12:35	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
RA-226	2.398E-5	3.872E-6	2.055E-5	3.326E-6	1.318	15.4

Method Blank

Analysis Date	01/11/23 12:35	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00001-03	**MBL**	RA-226	9.222E-8	5.955E-8	7.173E-8	

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00006**
SDG	**ARS1-22-02758**
Analysis	**Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])**
Method	**Eichrom ACW10**
Analysis Code	**ASP-TH-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/06/23 00:49	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00006-01	**LCS**	TH-230	6.206E-6	8.024E-7	5.232E-6	118.6	5.628E-8

Duplicate RER/DER/RPD

Analysis Date	01/06/23 00:49	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
TH-230	6.206E-6	8.024E-7	6.223E-6	8.106E-7	0.030	0.3

Method Blank

Analysis Date	01/06/23 00:49	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00006-03	**MBL**	TH-228	0.000	1.620E-7	3.057E-7	U
ARS1-B23-00006-03	**MBL**	TH-230	1.238E-7	1.652E-7	2.779E-7	U
ARS1-B23-00006-03	**MBL**	TH-232	-3.706E-8	7.277E-8	1.743E-7	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00054**
SDG	**ARS1-22-02758**
Analysis	**Strontium-90 in (Air Filters, Smears [AF])**
Method	**Eichrom SRW01**
Analysis Code	**GPC-SR90-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/12/23 12:26	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00054-01	**LCS**	SR-90	2.115E-5	3.229E-6	2.006E-5	105.4	3.686E-7

Duplicate RER/DER/RPD

Analysis Date	01/12/23 12:26	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
SR-90	2.115E-5	3.229E-6	2.055E-5	3.153E-6	0.262	2.9

Method Blank

Analysis Date	01/12/23 12:26	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00054-03	**MBL**	SR-90	2.430E-7	2.259E-6	4.070E-6	U

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(225) 228-1394

ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Sample Management Records

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

Revised
12-20-22/1403

COC # MC121622RADC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: ARS Aleut Analytical (AAA), Port Allen, LA	Event: **Parcel C Air Monitoring RAD**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 2609 North River Road, Port Allen, LA 70767-3469	

Comments:

RC0240: Pu-239/240 and Th
[redacted] 12/20/22

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	1x Filter, None
5	1x 250 mL Plastic, 4 Degrees C
15	1x 250 mL Plastic, 4 Degrees C

Event: Parcel C Air Monitoring RAD

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: E901.1 - Gamma Spec Air (15)	E905.0 - Sr 90 (5)	RC0240 - Pu Isotopes (15)	SW9315 - Ra226 (1)	Th isotopes	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	~~FB-121222~~ [redacted] FBC - 121222	AQ	12/12/2022	0800	[redacted]	X	X	X	X		FIELDQC	FB1	0.00	0.00	1	
2	MSC01-121222	A	12/15/2022	1437		X	X	X	X		MSC01	N1	0.00	0.00	1	
3	MSC02-121222	A	12/15/2022	1437		X	X	X	X		MSC02	N1	0.00	0.00	1	
4																
5																
6																
7																
8																
9																
10																

Turnaround Time: 28 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	[redacted] 12/19/22	1200	Fed Ex	[redacted] 12/19/22	1200
	12/19/22		[redacted]	12/19/22	
				12/20/22	1115

Shipping Date / Carrier / Airbill Number

Shipping Date: ~~12/16/22~~ 12/19/22 / FEDEX / ~~7707 2098 3394~~ [redacted] 12/19/22 7707 7991 8623

Received by Laboratory: *(Signature, Date, Time)* **& condition**

GES Navy_COC_Field
December 08, 2022

SDG Report - Samples and Containers

SDG Specific Data							
SDG	ARS1-22-02758			TAT Days	28 Calendar Days	Project Type	Environmental
Sample Count	3	Rpt Level	4	Date Received	12/20/2022	COC Number	MC121622RADC
Client	Gilbane Federal			Discrepancy Resol	N/A	PO Number	
Client Code	1138			Client Deadline	01/20/2023	Job Number	J310000600
Profile Number	PN-01440					Job Location	Hunters Point Shipyard, Parcel C Removal Site Evaluation
Comment							

Samples and Containers Checked In Thus Far

FR	Name	Matrix	Start Date	End Date	Disp	Hold	Arch	Storage	Comments
001	FBC-121222	Air Filter	12/12/2022 07:59	12/12/2022 08:00	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	428677	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/12/2022 07:59	AF Volume (CuM):		0.001		
002	MSC01-121222	Air Filter	12/15/2022 14:36	12/15/2022 14:37	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	428678	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/15/2022 14:36	AF Volume (CuM):		0.001		
003	MSC02-121222	Air Filter	12/15/2022 14:36	12/15/2022 14:37	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	428679	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/15/2022 14:36	AF Volume (CuM):		0.001		

SDG Report - Analysis Assignments

SDG	ARS1-22-02758	Sample Count	3
Client	Gilbane Federal	Analysis Count	5-15

Sample Count Totals Per Analysis

Analysis Code	Analysis Description	In/Out	Samples Count
ASP-PU239-AF	Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])	I	3
ASP-TH-AF	Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])	I	3
GAM-A-AF	Gamma Spec (Short) in (Air Filters, Smears [AF])	I	3
GPC-RA226-AF	Radium-226 in Air Filter	I	3
GPC-SR90-AF	Strontium-90 in (Air Filters, Smears [AF])	I	3

Analyses Assigned Per Fraction

Fraction	Analysis Code	X = Assigned
001	ASP-PU239-AF	X
001	ASP-TH-AF	X
001	GAM-A-AF	X
001	GPC-RA226-AF	X
001	GPC-SR90-AF	X
002	ASP-PU239-AF	X
002	ASP-TH-AF	X
002	GAM-A-AF	X
002	GPC-RA226-AF	X
002	GPC-SR90-AF	X
003	ASP-PU239-AF	X
003	ASP-TH-AF	X
003	GAM-A-AF	X
003	GPC-RA226-AF	X
003	GPC-SR90-AF	X

DQO Report for SDG

ARS1-22-02758

Client Name: Gilbane Federal Profile Name: Parcel C Rad Sampling Report Level: 4

Analysis Code	Prep Type	Units	Aliquot	Prep Code	Procedure	Count Time					
ASP-PU239-AF	WRAD	uCi	filter	N/A	PALA-RAD-026						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Pu-239/240 (15117-48-3)			4.8E-08 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
ASP-TH-AF	WRAD	uCi	filter	N/A	PALA-RAD-031						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Th-232 (7440-29-1)			1.4E-08 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GAM-A-AF	WGAM	uCi	filter	N/A	PALA-RAD-007						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Co-60 (10198-40-0)			0.00024 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
	Cs-137 (10045-97-3)			0.00048 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
	Ra-226 (13982-63-3)			4.4E-06 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GPC-RA226-AF	WRAD	uCi	filter		PALA-RAD-008						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Ra-226 (13982-63-3)			4.4E-06 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GPC-SR90-AF	WRAD	uCi	filter	N/A	PALA-RAD-032						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Sr-90 (10098-97-2)			2.4E-05 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A

Analysis Code	Fraction	Units	Aliquot	Conductivity	Analyte Count
ASP-PU239-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	

ASP-PU239-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	
ASP-PU239-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	
ASP-TH-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
ASP-TH-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
ASP-TH-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
GAM-A-AF	001	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GAM-A-AF	002	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GAM-A-AF	003	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GPC-RA226-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	

GPC-RA226-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	
GPC-RA226-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	
GPC-SR90-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	
GPC-SR90-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	
GPC-SR90-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	

ARS Aleut Analytical

PALA Sample Receipt Inspection Form
Client Name: Gilbane
SDG: ARS1-22-02758

Sample Custodian: [redacted] Survey Start Date: 12/20/22 Survey Start Time: 1230

Thermometer ID: E0064010085 Calibration Due Date: 2/28/23 pH Paper Lot#: NA

Exposure Rate Meter + Probe Unit ID: 2692264 Calibration Due Date: 9/13/23 Background: 4 µR/hr

Count Rate Meter + Probe Unit ID: PR287372 Calibration Due Date: 9/13/23 Background: 20 cpm

Delivery Type (circle one): Direct Lock Box (Commercial Carrier) FEDEX Total # of ESCs: 1

*True temperature is recorded which includes any applicable correction factors.

External Shipping Container Tracking:	Exposure Rate (µR/hr) (limit <500 µR/hr)	Max External Swipe Counts (cpm)	Max Internal Swipe Counts (cpm)	ESC True Temps* (°C)	TRAX Matrix ID (circle all that apply): (See Section 4.3 of SOP)
A: 770779518623	5	30	40	NA	AQ WD WG WO
B:					WS WW SI UR
C:					SO OL BI VG
D:					WP SM (AF)
E:					
F:					

Visual Inspection: External Shipping Container (Circle response)

Good Condition with no Leaks or Tears	(Yes)	No
Marked Radioactive	Yes	(No)
UN2910	Yes	(No)
Security Seals	(Yes)	No
If yes, intact?	(Yes)	No N/A

Internal Shipping Container

COC's Present	(Yes)	No
Well packaged container with no signs of leakage	(Yes)	No

COC/Sample Inspection (Circle response)

Sample Containers in good condition	(Yes)	No	
No spills or leaks	(Yes)	No	
Marked Radioactive	Yes	(No)	
Durable labels w/indelible ink	(Yes)	No	
COC relinquished/received correctly	(Yes)	No	
Adequate volume/filled correctly	(Yes)	No	
Hold Time sufficient for analysis	(Yes)	No	
For VOC/Radon, Head space?	Yes	No	(N/A)
If yes, <6mm?	Yes	No	(N/A)
# of containers received matches # on COC	(Yes)	No	
Samples received on ice?	Yes	(No)	

Type (circle one): Bagged Ice Loose Ice Blue Ice (N/A)

Comments:

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ARS Aleut Analytical

PALA Sample Survey Form

Client Name: Gillsane

SDG: ARS1-22-02758

Sample Survey Form
PALA-SR-001-FM-02 r 0.1
Effective 08/30/2019

Pipette ID: NA   Tip Lot#: NA

Disposible pipette lot#: NA

Sample ID from Client on COC or Sample	ESC Letter	Sample Container Type	Approx. Fill Level (%)	pH <2 is Acceptable: pH As Rec'd	pH <2 is Acceptable: pH Adjusted	Acid Lot # or Ind container temp (˚C)	Vol. of Acid Used (mL)	Acceptance Limits <100 cpm/cm: cpm
FBC-121222	A	ziploc	25	NA	NA	NA	NA	40
MSC01-121222	↓	↓	↓	↓	↓	↓	↓	↓
MSC02-121222	↓	↓	↓	↓	↓	↓	↓	↓

Sample Custodian: [redacted]   Survey End Date: 12/20/22   Survey/pH End Time: 1240

pH re-check required? YES or NO   *NOTE: Any metals sample acidified at sample receiving must be re-checked after a 24 hour hold.*

If YES: pH re-check date/time: ____________/________   Analyst: ________________   pH strip lot #: ____________

Were all re-checked samples' pH < 2? YES or NO*

**If no, complete and send to Project Management:*
1. Section A of PALA-SR-001-FM-05 (24 Hour Hold pH Readjustment)
2. SR section of PALA-SR-001-FM-03 (Discrepant Sample Receipt Report).

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Page ____ of ____

√

ORIGIN ID:JCCA [redacted]

200 FISHER STREET

SAN FRANCISCO, CA 94124
UNITED STATES US

SHIP DATE: 16DEC22
ACTWGT: 1.00 LB
CAD: 254128867/INET4530

BILL SENDER

TO [redacted]

ARS ALEUT ANALYTICAL, LLC
2609 NORTH RIVER ROAD

PORT ALLEN LA 70767
(225) 381-2991 REF: J31000600 01.21.06
INV:
PO: DEPT:

5B1J39A97/FE2D

FedEx Express

J224222101801uu

SATURDAY 10:30A
FIRST OVERNIGHT

TRK# 0201 **7707 7991 8623**

X0 OPLA

70767
LA-US **MSY**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

GES
AN ASRC INDUSTRIAL COMPANY

Procedures: GES-003 / EPA 900.0M

File ID Number: [redacted]121622RADC

Start Date 12/12/22
Stop Date 12/15/22
12/16/22 12/21/2022 12/16/22

Field Entry

Station	Sample ID	Date In:	Time In:	Date Out:	Time Out:	Initial Flow Rate (LPM)	Final Flow Rate (LPM)	Flow volume Cu.M	Julian Date for Date Out	Total Run Time (Days)	Total Run Time (Hours)	Total Run Time (Minutes)	Average Flow Rate (LPM)	Initial Flow Rate (CFM)	Final Flow Rate (CFM)	Average Flow Rate (CFM)	Average Flow Rate (Cu.M/h)	Flow Rate (Cu.M/min)	Total Flow (L)
# MSC01	MSC01-121222	12/12/22	7:30	12/15/22	14:37	60	60	284.8	349	3.30	79.12	4747.0	60	2.11888	2.11888	2.11888	3.6	0.06	284,820
# MSC02	MSC02-121222	12/12/22	7:00	12/15/22	14:37	60	60	286.6	349	3.32	79.62	4777.0	60	2.11888	2.11888	2.11888	3.6	0.06	286,620

FORMULAS:

Number of Days = (Date Out +Time Out) minus (Date In+Time In)
Number of Minutes = # of Days X 24hr X 60min
Flow Rate (m3/h) = Flow Rate (CFM) x 60min x (12in x 2.54cm/in / 100cm/m)^3 :
Mid-Sample Date/Time = [(Date+Time Out) + (Date+Time In)] / 2
Flow Rate (Cu.M/min) = CFM X 0.0283168466 Cu.M/CF
Flow Rate (LPM) = Cu.M X 1000
Total Flow (L) = LPM X Total Minutes

2609 North River Road
Port Allen, Louisiana 70767
(225) 228-1394

ARS Aleut Analytical, LLC

Laboratory Analytical Report

ARS1-22-02818

Gilbane Federal
[redacted]
1655 Grant Street
Suite 1200
Concord, CA 94520
[redacted]

COC Number: **LS122822RADC**
Job Number: **J310000600**
Job Location: **Hunters Point Shipyard, Parcel C Removal Site Evaluation**
Project Name: **Parcel C Air Monitoring RAD**

Questions regarding this analytical report should be addressed to ARS project manager, [redacted] who can be reached by email at projectmanagers@aaa.aleutfederal.com.

I certify that the test results presented in this report (in either hardcopy or electronic file (EDD)) meet the requirements of the laboratory's certifications and other applicable contract terms and conditions. A full list of the Port Allen, LA laboratory's certifications is provided with this report. Any exceptions to the certification or contract will be noted within the case narratives presented in the report. Any subcontracted sample results will be identified within the case narratives presented in the report. In the event this report is an amendment to a previously released report, the case narrative will clearly identify the original report as well as the reason(s) for reissuance. A statement of uncertainty for each analysis is available upon request. I authorize release and issuance of this report on the date signed below.

[redacted] Laboratory Management, ARS Aleut Analytical

Signature **Date** **Title**

2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

Table Of Contents

Certifications and Accreditations List

State or Accrediting Body (AB)	Certificate Number
AIHA LAP, LLC	209312
Alaska	LA01131
California	3085
ANAB DoD	ADE-1489
ANAB DOE	ADE-1489.01
Louisiana DEQ - NELAC	01949
Louisiana DHH	LA022
Nevada	LA011312023-1
New Jersey	LA009
New York	65039
Pennsylvania	68-04294-011
Texas	T104704447-22-18
Utah	LA011312022-13
Washington	C1010

For additional information related to the specific matrices, methods,and analytes recognized by each accrediting body, contact us at QA@aaa.aleutfederal.com for additional information.

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ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Case Narrative

ALEUT
2609 North River Road • Port Allen, Louisiana 70767
(225) 228-1394

PROJECT SAMPLE IDENTIFICATION CROSS-REFERENCE
TO ARS SAMPLE LABORATORY IDs

Client Sample ID	ARS Aleut Analytical Sample ID
FBC-121922	ARS1-22-02818-001
MSC01-121922	ARS1-22-02818-002
MSC02-121922	ARS1-22-02818-003

Sample	Date Collected	Date Received	Analysis	Basis	Prep Date/Time	Analysis Date/Time
001	12/19/22 08:00	12/29/22	ASP-PU239-AF	As Received	01/10/23 10:30	01/19/23 20:41
001	12/19/22 08:00	12/29/22	ASP-TH-AF	As Received	01/13/23 12:29	01/24/23 03:04
001	12/19/22 08:00	12/29/22	GAM-A-AF	As Received	NA	12/30/22 13:48
001	12/19/22 08:00	12/29/22	GPC-RA226-AF	As Received	01/13/23 11:47	01/24/23 13:44
001	12/19/22 08:00	12/29/22	GPC-SR90-AF	As Received	01/17/23 08:20	01/25/23 12:10
002	12/22/22 07:52	12/29/22	ASP-PU239-AF	As Received	01/10/23 10:30	01/19/23 20:41
002	12/22/22 07:52	12/29/22	ASP-TH-AF	As Received	01/13/23 12:29	01/24/23 03:04
002	12/22/22 07:52	12/29/22	GAM-A-AF	As Received	NA	12/30/22 13:49
002	12/22/22 07:52	12/29/22	GPC-RA226-AF	As Received	01/13/23 11:47	01/24/23 13:44
002	12/22/22 07:52	12/29/22	GPC-SR90-AF	As Received	01/17/23 08:20	01/25/23 12:10
003	12/22/22 07:47	12/29/22	ASP-PU239-AF	As Received	01/10/23 10:30	01/19/23 20:41
003	12/22/22 07:47	12/29/22	ASP-TH-AF	As Received	01/13/23 12:29	01/24/23 03:04
003	12/22/22 07:47	12/29/22	GAM-A-AF	As Received	NA	12/30/22 13:51
003	12/22/22 07:47	12/29/22	GPC-RA226-AF	As Received	01/13/23 11:47	01/24/23 13:44
003	12/22/22 07:47	12/29/22	GPC-SR90-AF	As Received	01/17/23 08:20	01/25/23 12:10

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SAMPLE RECEIPT/PREP

The samples arrived in good condition. The samples were screened for radioactive contamination as per procedure **PALA-SR-001-SOP Sample Receiving**. Sample date(s) and time(s) are listed as provided by the client. In regard to the Air Filters, no flow rate information was provided by the client. Turnaround time was set at 28 calendar days.

ANALYTICAL METHODS

Pu-239/240 analysis was performed using **PALA-RAD-026, "Americium, Plutonium and Uranium in Water, Soil and Vegetation Matrices by Sequential Separation Using Eichrom Stabilized Chemistry Resin (with Vacuum Box System Option) (Eichrom ACW-02 & Eichrom ACW-03)"**.

Th-232 analysis was performed using **PALA-RAD-031, "Thorium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom ACW-08 & Eichrom ACW-10)"**.

Co-60, Cs-137, Ra-226 analyses were performed using **PALA-RAD-007, "Modified Gamma Emitting Radionuclides in Soil, Air, and Biota Matrices (EPA 901.1 Mod, SM 7120B, & HASL-300 Ga-01-R)"**.

Ra-226 analysis was performed using **PALA-RAD-008, "Alpha Emitting Radium Isotopes (EPA 903.0, EPA 9315, SM 7500-Ra C, SM 7500-Ra C)"**.

Sr-90 analysis was performed using **PALA-RAD-032, "Strontium 89, 90 and Total Strontium in Water, Soil and Vegetation Matrices by Eichrom Resin Separation (Eichrom SRW01, EPA 905.0, HASL 300 Sr-01-RC)"**.

ANALYTICAL RESULTS

Batch ARS1-B23-00077: The Method Blank is greater than the MDC for Ra-226; all positive detects for Ra-226 in this analytical batch are qualified with a 'B'.

Fraction 001 has elevated MDC for Pu-239/240 with ACT of -1.148E-7 uCi/filter, MDC of 2.023E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 001 has elevated MDC for Th-232 with ACT of 5.591E-8 uCi/filter, MDC of 6.690E-8 uCi/filter and CRDL of 1.4E-08 uCi/filter.
Fraction 001 has elevated MDC for Ra-226 with ACT of -7.121E-6 uCi/filter, MDC of 1.350E-5 uCi/filter and CRDL of 4.4E-06 uCi/filter.
Fraction 002 has elevated MDC for Pu-239/240 with ACT of 2.933E-8 uCi/filter, MDC of 1.646E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 002 has elevated MDC for Ra-226 with ACT of 1.238E-6 uCi/filter, MDC of 1.252E-5 uCi/filter and CRDL of 4.4E-06 uCi/filter.
Fraction 003 has elevated MDC for Pu-239/240 with ACT of -5.922E-8 uCi/filter, MDC of 1.754E-7 uCi/filter and CRDL of 4.8E-08 uCi/filter.
Fraction 003 has elevated MDC for Th-232 with ACT of 4.956E-8 uCi/filter, MDC of 7.624E-8 uCi/filter and CRDL of 1.4E-08 uCi/filter.
Fraction 003 has elevated MDC for Ra-226 with ACT of 8.525E-6 uCi/filter, MDC of 2.456E-5 uCi/filter and CRDL of 4.4E-06 uCi/filter.

ARS1-B23-00052: ROI's adjusted to better fit the peaks of interest.

ARS1-B23-00074: ROIs adjusted to better fit the peaks of interest.

Notes (Case Narrative)

Definitions:

CRDL	Contract Required Detection Limit
CSU	Combined Standard Uncertainty
DLC	Decision Level Concentration (ANSI N42.23)
DO	Duplicate Original
DUP	Sample Duplicate
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MBL	Method Blank
MCL	Maximum Contaminant Level
MDA	Minimum Detectable Activity
MDL	Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
N/A	Not Applicable
NC	Not Calculated
NP	Not Provided
NR	Not Referenced
PQL	Practical Quantitation Limit

Data Qualifiers:

B	The result of both the method blank and the target sample are above the MDL.
D	Sample analysis accomplished through dilution.
J	The reported result is an estimated value above the LOD but below the LOQ, or above the MDL but below the PQL.
Q	One or more quality control criteria failed.
U	Result is below the MDA, MDL, PQL, LOD, or LOQ
*	LCS/LCSD or Sample DUP fails all Duplicate criteria.
S	Spike
SC	Subcontracted out to another qualified laboratory
H	Holding time exceeded
E	Exceeds MCL
**	Reporting Limit is higher than MCL; Target cannot be detected
ǂ	Method/Matrix/Analyte not accredited for this certification

Radiochemistry Comments:

1.0) All MDA/MDC values are calculated on a sample specific basis.

2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.

3.0) Total activity is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.

4.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228 (Gamma Spectroscopy only).

5.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234 (Gamma Spectroscopy only).

6.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).

7.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected (Gamma Spectroscopy only).

8.0) Gamma spectroscopy results are calculated values based on the **ORTEC®** GammaVision ENV32 Analysis Engine.

9.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Non-Potable Water**:
Gross Alpha and Gross Beta (EPA 900.0, EPA 9310); Radium 226 (EPA 903.0, EPA 903.1, EPA 9315); Radium 228 (EPA 904.0, EPA 9320); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7470A); Strontium-89 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0, Eichrom SRW01, HASL 300 Sr-02-RC); Tritium (EPA 906.0); Enriched Tritium (ARS-040), Carbon-14 (ARS-019), Tritium/Carbon (ARS-151); Gamma Emitters (EPA 901.1, SM 7120B, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-03); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Pu-10); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03); Technetium-99 (Eichrom TCW02)

10.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Solid and Chemical Materials**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); ICP/MS (EPA 6020B); ICP-OES (EPA 6010D); Mercury CVAA (EPA 7471B); Strontium-89 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-01); Strontium-90 (EPA 905.0 Mod, Eichrom SRW01, HASL 300 Sr-02); Tritium (EPA 906.0 Mod); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Am-01-RC); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03, HASL 300 Pu-02-RC, HASL 300 Pu-03-RC); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03, HASL 300 U-02, HASL 300 U-04); Technetium-99 (Eichrom TCS01)

11.0) DoD/DOE and ISO 17025 certifications through ANAB apply only to the following methods in **Air and Emissions**:
Gross Alpha and Gross Beta (EPA 900.0 Mod, EPA 9310); Strontium-89 (Eichrom SRW01, HASL 300 Sr-01-RC); Strontium-90 (Eichrom SRW01, HASL 300 Sr-02-RC); Gamma Emitters (EPA 901.1, HASL 300 Ga-01-R); Americium-241 (Eichrom ACW03, HASL 300 Se-03); Plutonium 238, Plutonium 239/240, Plutonium-241 (Eichrom ACW03, HASL 300 Se-03); Thorium-228, Thorium 230, Thorium-232 (Eichrom ACW10); Uranium-234, Uranium-235, Uranium-238 (Eichrom ACW03, HASL 300 Se-03); Technetium-99 (Eichrom TCW02, Eichrom TCS01)

General Comments:

1.0 Modified analysis procedures are procedures that are modified to meet certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "M" or "Mod" to the procedure number (i.e. 901.1M, 901.1 Mod).

2.0 All NIOSH method results are reported without blank corrections applied.

3.0 Basis: "As Received" = analyzed as received from client; "Dry" = dried prior to being analyzed; "Dry Weight Corrected" = analyzed as received; result corrected for percent moisture.

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ARS Aleut Analytical, LLC
Analytical Reports

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Analytical Results

2609 North River Road • Port Allen, Louisiana 70767
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ARS Sample Delivery Group: ARS1-22-02818
Client Sample ID: FBC-121922
Sample Collection Date: 12/19/22 8:00
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02818-001
Date Received: 12/29/22
Report Date: 01/27/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-1.148E-7	9.227E-8	2.023E-7	9.076E-8	4.8E-08	U	uCi/filter	01/19/23 20:41	[redacted]	51.6%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	5.591E-8	4.764E-8	6.690E-8	2.503E-8	1.4E-08	U	uCi/filter	01/24/23 3:04	[redacted]	66.1%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-3.177E-7	9.988E-7	1.021E-6	5.105E-7	0.00024	U	uCi/filter	12/30/22 13:48	[redacted]	N/A
Cs-137	7.263E-7	7.474E-7	8.248E-7	4.124E-7	0.00048	U	uCi/filter	12/30/22 13:48	[redacted]	N/A
Ra-226	-7.121E-6	1.218E-5	1.350E-5	6.750E-6	4.4E-06	U	uCi/filter	12/30/22 13:48	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	9.600E-7	6.561E-7	8.313E-7	3.191E-7	4.4E-06	B	uCi/filter	01/24/23 13:44	[redacted]	91.5%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	-1.400E-7	2.033E-6	3.720E-6	1.718E-6	2.4E-05	U	uCi/filter	01/25/23 12:10	[redacted]	99.4%

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ARS Sample Delivery Group: ARS1-22-02818
Client Sample ID: MSC01-121922
Sample Collection Date: 12/22/22 7:52
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02818-002
Date Received: 12/29/22
Report Date: 01/27/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	2.933E-8	9.097E-8	1.646E-7	7.238E-8	4.8E-08	U	uCi/filter	01/19/23 20:41	[redacted]	55.1%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	6.887E-8	4.502E-8	4.610E-8	1.457E-8	1.4E-08		uCi/filter	01/24/23 3:04	[redacted]	68.4%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-4.564E-7	9.244E-7	9.401E-7	4.701E-7	0.00024	U	uCi/filter	12/30/22 13:49	[redacted]	N/A
Cs-137	2.313E-7	6.333E-7	6.865E-7	3.433E-7	0.00048	U	uCi/filter	12/30/22 13:49	[redacted]	N/A
Ra-226	1.238E-6	7.510E-6	1.252E-5	6.260E-6	4.4E-06	U	uCi/filter	12/30/22 13:49	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	1.387E-6	6.763E-7	6.382E-7	2.349E-7	4.4E-06	B	uCi/filter	01/24/23 13:44	[redacted]	97.2%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	-1.763E-6	2.638E-6	4.959E-6	2.324E-6	2.4E-05	U	uCi/filter	01/25/23 12:10	[redacted]	92.8%

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ARS Sample Delivery Group: ARS1-22-02818
Client Sample ID: MSC02-121922
Sample Collection Date: 12/22/22 7:47
Sample Matrix: Air Filter
Percent Solids: N/A

Request or PO Number: J310000600
ARS Sample ID: ARS1-22-02818-003
Date Received: 12/29/22
Report Date: 01/27/23

Radiochemistry

Analysis Method: Eichrom ACW03

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Pu-239/240	-5.922E-8	7.984E-8	1.754E-7	7.622E-8	4.8E-08	U	uCi/filter	01/19/23 20:41	[redacted]	47.8%

Analysis Method: Eichrom ACW10

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Th-232	4.956E-8	5.039E-8	7.624E-8	2.853E-8	1.4E-08	U	uCi/filter	01/24/23 3:04	[redacted]	57.6%

Analysis Method: EPA 901.1M

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Co-60	-8.195E-7	1.805E-6	1.837E-6	9.185E-7	0.00024	U	uCi/filter	12/30/22 13:51	[redacted]	N/A
Cs-137	-8.401E-7	1.676E-6	1.868E-6	9.340E-7	0.00048	U	uCi/filter	12/30/22 13:51	[redacted]	N/A
Ra-226	8.525E-6	2.168E-5	2.456E-5	1.228E-5	4.4E-06	U	uCi/filter	12/30/22 13:51	[redacted]	N/A

Analysis Method: EPA 9315

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
Ra-226	1.214E-6	6.371E-7	6.207E-7	2.238E-7	4.4E-06	B	uCi/filter	01/24/23 13:44	[redacted]	98.7%

Analysis Method: Eichrom SRW01

Analysis Description	Analysis Results	CSU +/- 2 s	MDC	DLC	CRDL	Qual	Analysis Units	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
SR-90	5.508E-7	2.356E-6	4.183E-6	1.932E-6	2.4E-05	U	uCi/filter	01/25/23 12:10	[redacted]	91.1%

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ARS Aleut Analytical, LLC
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QC Summary

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QC Sample Results

Analytical Batch: ARS1-B22-02036
Lab Sample ID: ARS1-B22-02036-01
Method: EPA 901.1M

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/03/23 7:44

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Am-241	33.065	31.699		uCi/filter	95.9	75 - 125
Co-60	20.928	20.782		uCi/filter	99.3	75 - 125
Cs-137	12.996	13.133		uCi/filter	101.1	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B22-02036
Lab Sample ID: ARS1-B22-02036-02
Method: EPA 901.1M

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/03/23 7:57

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Am-241	33.065	31.774		uCi/filter	96.1	75 - 125	0.2	25	0.042	3
Co-60	20.928	21.913		uCi/filter	104.7	75 - 125	5.3	25	1.277	3
Cs-137	12.996	13.151		uCi/filter	101.2	75 - 125	0.1	25	0.036	3

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QC Sample Results

Analytical Batch: ARS1-B22-02036
Lab Sample ID: ARS1-B22-02036-03
Method: EPA 901.1M

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/03/23 14:05

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Co-60	-2.346E-4	0.002	0.002	8.200E-4	U	uCi/filter
Cs-137	-1.115E-5	0.001	0.002	7.850E-4	U	uCi/filter
Ra-226	-0.002	0.022	0.025	0.013	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02818 **Analytical Batch:** ARS1-B22-02036

Analysis: Gamma Spec (Short) in (Air Filters, Smears [AF])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B22-02036-01		Lab Control Sample	Air Filter	EPA 901.1M	N/A
ARS1-B22-02036-02		Lab Control Sample Duplicate	Air Filter	EPA 901.1M	N/A
ARS1-B22-02036-03		Method Blank	Air Filter	EPA 901.1M	N/A
ARS1-B22-02036-04	ARS1-22-02818-001	FBC-121922	Air Filter	EPA 901.1M	N/A
ARS1-B22-02036-05	ARS1-22-02818-002	MSC01-121922	Air Filter	EPA 901.1M	N/A
ARS1-B22-02036-06	ARS1-22-02818-003	MSC02-121922	Air Filter	EPA 901.1M	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00052
Lab Sample ID: ARS1-B23-00052-01
Method: Eichrom ACW03

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/19/23 20:41

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Pu-239/240	7.705E-6	7.897E-6		uCi/filter	102.5	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00052
Lab Sample ID: ARS1-B23-00052-02
Method: Eichrom ACW03

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/19/23 20:41

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Pu-239/240	7.698E-6	7.750E-6		uCi/filter	100.7	75 - 125	1.9	25	0.207	3

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QC Sample Results

Analytical Batch: ARS1-B23-00052
Lab Sample ID: ARS1-B23-00052-03
Method: Eichrom ACW03

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/19/23 20:41

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Pu-238	-1.356E-8	8.196E-8	1.595E-7	7.056E-8	U	uCi/filter
Pu-239/240	6.781E-9	4.409E-8	8.892E-8	3.527E-8	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02818

Analytical Batch: ARS1-B23-00052

Analysis: Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00052-01		Lab Control Sample	Air Filter	Eichrom ACW03	N/A
ARS1-B23-00052-02		Lab Control Sample Duplicate	Air Filter	Eichrom ACW03	N/A
ARS1-B23-00052-03		Method Blank	Air Filter	Eichrom ACW03	N/A
ARS1-B23-00052-08	ARS1-22-02818-001	FBC-121922	Air Filter	Eichrom ACW03	N/A
ARS1-B23-00052-09	ARS1-22-02818-002	MSC01-121922	Air Filter	Eichrom ACW03	N/A
ARS1-B23-00052-10	ARS1-22-02818-003	MSC02-121922	Air Filter	Eichrom ACW03	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00074
Lab Sample ID: ARS1-B23-00074-01
Method: Eichrom ACW10

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/24/23 3:04

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Th-230	5.181E-6	6.245E-6		uCi/filter	120.5	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00074
Lab Sample ID: ARS1-B23-00074-02
Method: Eichrom ACW10

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/24/23 3:04

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Th-230	5.212E-6	5.647E-6		uCi/filter	108.3	75 - 125	10.1	25	1.098	3

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QC Sample Results

Analytical Batch: ARS1-B23-00074
Lab Sample ID: ARS1-B23-00074-03
Method: Eichrom ACW10

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/24/23 3:04

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Th-228	7.666E-9	8.631E-8	1.634E-7	7.133E-8	U	uCi/filter
Th-230	3.777E-8	9.019E-8	1.611E-7	7.030E-8	U	uCi/filter
Th-232	1.508E-8	2.961E-8	5.551E-8	1.754E-8	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02818

Analytical Batch: ARS1-B23-00074

Analysis: Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00074-01		Lab Control Sample	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00074-02		Lab Control Sample Duplicate	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00074-03		Method Blank	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00074-04	ARS1-22-02818-001	FBC-121922	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00074-05	ARS1-22-02818-002	MSC01-121922	Air Filter	Eichrom ACW10	N/A
ARS1-B23-00074-06	ARS1-22-02818-003	MSC02-121922	Air Filter	Eichrom ACW10	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00076
Lab Sample ID: ARS1-B23-00076-01
Method: Eichrom SRW01

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/25/23 12:10

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
SR-90	2.016E-5	2.174E-5		uCi/filter	107.8	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00076
Lab Sample ID: ARS1-B23-00076-02
Method: Eichrom SRW01

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/25/23 12:10

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
SR-90	2.022E-5	2.242E-5		uCi/filter	110.8	75 - 125	3.1	25	0.278	3

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QC Sample Results

Analytical Batch: ARS1-B23-00076
Lab Sample ID: ARS1-B23-00076-03
Method: Eichrom SRW01

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/25/23 12:10

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
SR-90	2.914E-6	2.409E-6	3.814E-6	1.757E-6	U	uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02818

Analytical Batch: ARS1-B23-00076

Analysis: Strontium-90 in (Air Filters, Smears [AF])

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00076-01		Lab Control Sample	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00076-02		Lab Control Sample Duplicate	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00076-03		Method Blank	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00076-04	ARS1-22-02818-001	FBC-121922	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00076-05	ARS1-22-02818-002	MSC01-121922	Air Filter	Eichrom SRW01	N/A
ARS1-B23-00076-06	ARS1-22-02818-003	MSC02-121922	Air Filter	Eichrom SRW01	N/A

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QC Sample Results

Analytical Batch: ARS1-B23-00077
Lab Sample ID: ARS1-B23-00077-01
Method: EPA 9315

Sample Type: LCS
Matrix: Air Filter
Analysis Date: 01/24/23 13:44

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits
Ra-226	2.684E-5	2.513E-5		uCi/filter	93.6	75 - 125

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QC Sample Results

Analytical Batch: ARS1-B23-00077
Lab Sample ID: ARS1-B23-00077-02
Method: EPA 9315

Sample Type: LCSD
Matrix: Air Filter
Analysis Date: 01/24/23 13:44

Analyte	Spike Added	Analysis Result	Qual	Analysis Units	% Rec	% Rec Limits	RPD	RPD Limit	DER	DER Limit
Ra-226	2.689E-5	2.426E-5		uCi/filter	90.2	75 - 125	3.5	25	0.304	3

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QC Sample Results

Analytical Batch: ARS1-B23-00077
Lab Sample ID: ARS1-B23-00077-03
Method: EPA 9315

Sample Type: MBL
Matrix: Air Filter
Analysis Date: 01/24/23 13:44

Analyte	Analysis Result	CSU +/- 2 s	MDC	DLC	Qual	Analysis Units
Ra-226	7.296E-7	5.112E-7	6.342E-7	2.352E-7		uCi/filter

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QC Association Summary

ARS Sample Delivery Group: ARS1-22-02818

Analytical Batch: ARS1-B23-00077

Analysis: Radium-226 in Air Filter

Batch Sample ID	Lab Sample ID	Client Sample ID	Matrix	Method	Prep Method
ARS1-B23-00077-01		Lab Control Sample	Air Filter	EPA 9315	N/A
ARS1-B23-00077-02		Lab Control Sample Duplicate	Air Filter	EPA 9315	N/A
ARS1-B23-00077-03		Method Blank	Air Filter	EPA 9315	N/A
ARS1-B23-00077-04	ARS1-22-02818-001	FBC-121922	Air Filter	EPA 9315	N/A
ARS1-B23-00077-05	ARS1-22-02818-002	MSC01-121922	Air Filter	EPA 9315	N/A
ARS1-B23-00077-06	ARS1-22-02818-003	MSC02-121922	Air Filter	EPA 9315	N/A

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ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Batch QC

ALEUT

QC Results per Analytical Batch

Analytical Batch	**ARS1-B22-02036**
SDG	**ARS1-22-02818**
Analysis	**Gamma Spec (Short) in (Air Filters, Smears [AF])**
Method	**EPA 901.1M**
Analysis Code	**GAM-A-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	01/03/23 07:44	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDC**
ARS1-B22-02036-01	**LCS**	AM-241	31.699	2.462	33.065	95.9	0.118
ARS1-B22-02036-01	**LCS**	CO-60	20.782	1.292	20.928	99.3	0.429
ARS1-B22-02036-01	**LCS**	CS-137	13.133	0.700	12.996	101.1	0.067

Duplicate RER/DER/RPD

			Analysis Date	01/03/23 07:57	**Analysis Technician**	[redacted]	
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**	
AM-241	31.699	2.462	31.774	2.468	0.042	0.2	
CO-60	20.782	1.292	21.913	1.159	1.277	5.3	
CS-137	13.133	0.700	13.151	0.702	0.036	0.1	

Method Blank

			Analysis Date	01/03/23 14:05	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDC**	**Qual**	
ARS1-B22-02036-03	**MBL**	CO-60	-2.346E-4	0.002	0.002	U	
ARS1-B22-02036-03	**MBL**	CS-137	-1.115E-5	0.001	0.002	U	
ARS1-B22-02036-03	**MBL**	RA-226	-0.002	0.022	0.025	U	

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00052**
SDG	**ARS1-22-02818**
Analysis	**Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])**
Method	**Eichrom ACW03**
Analysis Code	**ASP-PU239-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

			Analysis Date	01/19/23 20:41	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**Expected Value**	**LCS Rec (%)**	**MDC**
ARS1-B23-00052-01	**LCS**	PU-239/240	7.897E-6	9.924E-7	7.705E-6	102.5	5.014E-8

Duplicate RER/DER/RPD

			Analysis Date	01/19/23 20:41	**Analysis Technician**	[redacted]	
Analyte	**Results LCS**	**CSU LCS (2s)**	**Results LCSD**	**CSU LCSD (2s)**	**DER**	**RPD**	
PU-239/240	7.897E-6	9.924E-7	7.750E-6	9.748E-7	0.207	1.9	

Method Blank

			Analysis Date	01/19/23 20:41	**Analysis Technician**	[redacted]	
Analysis Batch Sample ID	**QC Type**	**Analyte**	**Results**	**CSU (2s)**	**MDC**	**Qual**	
ARS1-B23-00052-03	**MBL**	PU-238	-1.356E-8	8.196E-8	1.595E-7	U	
ARS1-B23-00052-03	**MBL**	PU-239/240	6.781E-9	4.409E-8	8.892E-8	U	

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00074**
SDG	**ARS1-22-02818**
Analysis	**Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])**
Method	**Eichrom ACW10**
Analysis Code	**ASP-TH-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/24/23 03:04	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00074-01	**LCS**	TH-230	6.245E-6	7.946E-7	5.181E-6	120.5	4.445E-8

Duplicate RER/DER/RPD

Analysis Date	01/24/23 03:04	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
TH-230	6.245E-6	7.946E-7	5.647E-6	7.141E-7	1.098	10.1

Method Blank

Analysis Date	01/24/23 03:04	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00074-03	**MBL**	TH-228	7.666E-9	8.631E-8	1.634E-7	U
ARS1-B23-00074-03	**MBL**	TH-230	3.777E-8	9.019E-8	1.611E-7	U
ARS1-B23-00074-03	**MBL**	TH-232	1.508E-8	2.961E-8	5.551E-8	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00076**
SDG	**ARS1-22-02818**
Analysis	**Strontium-90 in (Air Filters, Smears [AF])**
Method	**Eichrom SRW01**
Analysis Code	**GPC-SR90-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/25/23 12:10	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00076-01	**LCS**	SR-90	2.174E-5	3.317E-6	2.016E-5	107.8	3.690E-7

Duplicate RER/DER/RPD

Analysis Date	01/25/23 12:10	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
SR-90	2.174E-5	3.317E-6	2.242E-5	3.428E-6	0.278	3.1

Method Blank

Analysis Date	01/25/23 12:10	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00076-03	**MBL**	SR-90	2.914E-6	2.409E-6	3.814E-6	U

QC Results per Analytical Batch

Analytical Batch	**ARS1-B23-00077**
SDG	**ARS1-22-02818**
Analysis	**Radium-226 in Air Filter**
Method	**EPA 9315**
Analysis Code	**GPC-RA226-AF**
Report Units	**uCi/filter**

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	**Recovery (%):**	**> 75**	**< 125**
Matrix Spike	**Recovery (%):**	**> 60**	**< 140**
Duplicate	**Duplicate Error Ratio (DER):**		**< 3**
	Relative Percent Difference (RPD %):		**≤ 25**

Laboratory Control Sample

Analysis Date	01/24/23 13:44	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B23-00077-01	**LCS**	RA-226	2.513E-5	4.055E-6	2.684E-5	93.6	8.024E-8

Duplicate RER/DER/RPD

Analysis Date	01/24/23 13:44	Analysis Technician	[redacted]

Analyte	Results LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	DER	RPD
RA-226	2.513E-5	4.055E-6	2.426E-5	3.914E-6	0.304	3.5

Method Blank

Analysis Date	01/24/23 13:44	Analysis Technician	[redacted]

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B23-00077-03	**MBL**	RA-226	7.296E-7	5.112E-7	6.342E-7	

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ARS Aleut Analytical, LLC
Analytical Reports

for

Gilbane Federal

Sample Management Records

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # LS122822RADC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: ARS Aleut Analytical (AAA), Port Allen, LA	Event: **Parcel C Air Monitoring RAD**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 2609 North River Road, Port Allen, LA 70767-3469	

Comments:

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	1x Filter, None
5	1x 250-mL Plastic, 4 Degrees C
15	1x 250-mL Plastic, 4 Degrees C

						Analytical Test Method	E901.1 - Gamma Spec Air	E905.0 - Sr 90	RC0240 - Pu Th Isotopes	SW9315 - Ra226									
Event: Parcel C Air Monitoring RAD							15	5	15	1									
	Sample ID	Matrix	Date	Time	Samp Init.											Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	FBC-121922	AQ	12/19/2022	0800	[redacted]		X	X	X	X						FIELDQC	FB2	0.00	0.00	1	
2	MSC01-121922	A	12/22/2022	0752			X	X	X	X						MSC01	N1	0.00	0.00	1	
3	MSC02-121922	A	12/22/2022	0747			X	X	X	X						MSC02	N1	0.00	0.00	1	

Turnaround Time: 28 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/28/22	1200	[redacted]	12/28/22	1200
			[redacted]	12/29/22	1440

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/28/2022 / FEDEX / 7707 7503 8912

Received by Laboratory: *(Signature, Date, Time)* **& condition**

Procedures: GES-003 / EPA 900.0M

Start Date 12/19/22
Stop Date 12/22/22

File ID Number: [redacted]22822RADC

12/28/22 12/28/2022 12/16/22

Field Entry

	Station	Sample ID	Date In	Time In	Date Out	Time Out	Initial Flow Rate (LPM)	Final Flow Rate (LPM)	Flow volume Cu.M	Julian Date for Date Out	Total Run Time (Days)	Total Run Time (Hours)	Total Run Time (Minutes)	Average Flow Rate (LPM)	Initial Flow Rate (CFM)	Final Flow Rate (CFM)	Average Flow Rate (CFM)	Average Flow Rate (Cu.M/h)	Flow Rate (Cu.M/min)	Total Flow (L)
		FBC-121922	12/19/2022	800	12/22/2022	800														
1	MSC01	MSC01-121922	12/19/22	7:30	12/22/22	7:52	60	60	260.5	356	3.02	72.37	4342.0	60	2.11888	2.11888	2.11888	3.6	0.06	260,520
2	MSC02	MSC02-121922	12/19/22	7:19	12/22/22	7:47	60	60	260.9	356	3.02	72.47	4348.0	60	2.11888	2.11888	2.11888	3.6	0.06	260,880

FORMULAS:

Number of Days = (Date Out +Time Out) minus (Date In+Time In)
Number of Minutes = # of Days X 24hr X 60min
Flow Rate (m3/h) = Flow Rate (CFM) x 60min x (12in x 2.54cm/in / 100cm/m)^3
Mid-Sample Date/Time = [(Date+Time Out) + (Date+Time In)] / 2
Flow Rate (Cu.M/min) = CFM X 0.0283168466 Cu.M/CF
Flow Rate (LPM) = Cu.M X 1000
Total Flow (L) = LPM X Total Minutes

SDG Report - Samples and Containers

SDG Specific Data							
SDG	ARS1-22-02818			TAT Days	28 Calendar Days	Project Type	Environmental
Sample Count	3	Rpt Level	4	Date Received	12/29/2022	COC Number	LS122822RADC
Client	Gilbane Federal			Discrepancy Resol	N/A	PO Number	
Client Code	1138			Client Deadline	01/27/2023	Job Number	J310000600
Profile Number	PN-01440					Job Location	Hunters Point Shipyard, Parcel C Removal Site Evaluation
Comment							

Samples and Containers Checked In Thus Far

FR	Name	Matrix	Start Date	End Date	Disp	Hold	Arch	Storage	Comments
001	FBC-121922	Air Filter	12/19/2022 07:59	12/19/2022 08:00	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	429103	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/19/2022 07:59	AF Volume (CuM):		0.001		
002	MSC01-121922	Air Filter	12/22/2022 07:51	12/22/2022 07:52	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	429104	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/22/2022 07:51	AF Volume (CuM):		0.001		
003	MSC02-121922	Air Filter	12/22/2022 07:46	12/22/2022 07:47	H	30	10	PrePrep	
	IC_ID	**Cnt**	**Container Type**	**AF Volume (L)**	**AF Units**		**Rate**	**Mins**	**Comments**
	429105	1	HDP Container	1	LPM			1	
			Mid-Sample Date:	12/22/2022 07:46	AF Volume (CuM):		0.001		

SDG Report - Analysis Assignments

SDG	ARS1-22-02818	Sample Count	3
Client	Gilbane Federal	Analysis Count	5-15

Sample Count Totals Per Analysis

Analysis Code	Analysis Description	In/Out	Samples Count
ASP-PU239-AF	Plutonium (239, 240Pu) in (Air Filters, Smears, Leak Test [AF, SM, LT])	I	3
ASP-TH-AF	Thorium in (Air Filters, Smears, Leak Test [AF, SM, LT])	I	3
GAM-A-AF	Gamma Spec (Short) in (Air Filters, Smears [AF])	I	3
GPC-RA226-AF	Radium-226 in Air Filter	I	3
GPC-SR90-AF	Strontium-90 in (Air Filters, Smears [AF])	I	3

Analyses Assigned Per Fraction

Fraction	Analysis Code	X = Assigned
001	ASP-PU239-AF	X
001	ASP-TH-AF	X
001	GAM-A-AF	X
001	GPC-RA226-AF	X
001	GPC-SR90-AF	X
002	ASP-PU239-AF	X
002	ASP-TH-AF	X
002	GAM-A-AF	X
002	GPC-RA226-AF	X
002	GPC-SR90-AF	X
003	ASP-PU239-AF	X
003	ASP-TH-AF	X
003	GAM-A-AF	X
003	GPC-RA226-AF	X
003	GPC-SR90-AF	X

Client Name: Gilbane Federal Profile Name: Parcel C Rad Sampling Report Level: 4

Analysis Code	Prep Type	Units	Aliquot	Prep Code	Procedure	Count Time					
ASP-PU239-AF	WRAD	uCi	filter	N/A	PALA-RAD-026						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Pu-239/240 (15117-48-3)			4.8E-08 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
ASP-TH-AF	WRAD	uCi	filter	N/A	PALA-RAD-031						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Th-232 (7440-29-1)			1.4E-08 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GAM-A-AF	WGAM	uCi	filter	N/A	PALA-RAD-007						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Co-60 (10198-40-0)			0.00024 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
	Cs-137 (10045-97-3)			0.00048 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
	Ra-226 (13982-63-3)			4.4E-06 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GPC-RA226-AF	WRAD	uCi	filter		PALA-RAD-008						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Ra-226 (13982-63-3)			4.4E-06 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A
GPC-SR90-AF	WRAD	uCi	filter	N/A	PALA-RAD-032						
	Analyte			**RDL**	**LCS LL/UL**	**MS LL/UL**	**RadY LL/UL**	**GravY LL/UL**	**RER**	**RPD**	**Surr LL/UL**
	Sr-90 (10098-97-2)			2.4E-05 uCi/filter	75/125	60/140	30/110	30/110	1	25	N/A

Analysis Code	Fraction	Units	Aliquot	Conductivity	Analyte Count
ASP-PU239-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	

ASP-PU239-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	
ASP-PU239-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Pu-239/240	
ASP-TH-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
ASP-TH-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
ASP-TH-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Th-232	
GAM-A-AF	001	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GAM-A-AF	002	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GAM-A-AF	003	uCi	filter	N/A	3
		Group		**Analyte**	
		Parcel C Rad Sampling		Cs-137	
		Parcel C Rad Sampling		Co-60	
		Parcel C Rad Sampling		Ra-226	
GPC-RA226-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	

GPC-RA226-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	
GPC-RA226-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Ra-226	
GPC-SR90-AF	001	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	
GPC-SR90-AF	002	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	
GPC-SR90-AF	003	uCi	filter	N/A	1
		Group		**Analyte**	
		Parcel C Rad Sampling		Sr-90	

PALA Sample Receipt Inspection Form

Client Name: Gilbane

SDG: ARS1-22-02818

Sample Custodian: [redacted]

Survey Start Date: 12/29/22 Survey Start Time: 1500

Thermometer ID: E0064010085 Calibration Due Date: 2/28/23 pH Paper Lot# NA

Exposure Rate Meter + Probe Unit ID: 269264 Calibration Due Date: 9/13/23 Background: 4 µR/hr

Count Rate Meter + Probe Unit ID: PR257372 Calibration Due Date: 9/13/23 Background: 20 cpm

Delivery Type (circle one): Direct Lock Box (Commercial Carrier) FEDEX Total # of ESCs: 1

*True temperature is recorded which includes any applicable correction factors.

External Shipping Container Tracking:	Exposure Rate (µR/hr) (limit <500 µR/hr)	Max External Swipe Counts (cpm)	Max Internal Swipe Counts (cpm)	ESC True Temps* (°C)	TRAX Matrix ID (circle all that apply): (See Section 4.3 of SOP)
A: 770775038912	5	30	40	NA	AQ WD WG WO
B:					WS WW SI UR
C:					SO OL BI VG
D:					WP SM (AF)
E:					
F:					

Visual Inspection: External Shipping Container	(Circle response)		
Good Condition with no Leaks or Tears	(Yes)	No	
Marked Radioactive	Yes	(No)	
UN2910	Yes	(No)	
Security Seals	(Yes)	No	
If yes, intact?	(Yes)	No	N/A
Internal Shipping Container			
COC's Present	(Yes)	No	
Well packaged container with no signs of leakage	(Yes)	No	

COC/Sample Inspection	(Circle response)		
Sample Containers in good condition	(Yes)	No	
No spills or leaks	(Yes)	No	
Marked Radioactive	Yes	(No)	
Durable labels w/indelible ink	(Yes)	No	
COC reliquished/received correctly	(Yes)	No	
Adequate volume/filled correctly	(Yes)	No	
Hold Time sufficient for analysis	(Yes)	No	
For VOC/Radon, Head space?	Yes	No	(N/A)
If yes, <6mm?	Yes	No	(N/A)
# of containers received matches # on COC	(Yes)	No	
Samples received on ice?	Yes	(No)	
Type (circle one):	Bagged Ice	Loose Ice	Blue Ice (N/A)

Comments:

PALA Sample Survey Form

Client Name: Gilbane

SDG: ARS1-22-02818

Pipette ID: NA　　Tip Lot#: NA

Disposible pipette lot#: NA

Sample ID from Client on COC or Sample	ESC Letter	Sample Container Type	Approx. Fill Level (%)	pH As Rec'd (pH <2 is Acceptable)	pH Adjusted (pH <2 is Acceptable)	Acid Lot # or Ind container temp (°C)	Vol. of Acid Used (mL)	cpm (Acceptance Limits <100 cpm/cm)
FBC-121922	A	ziploc	25	NA	NA	NA	NA	40
MSC01-121922	↓	↓	↓	↓	↓	↓	↓	↓
MSC02-121922	↓	↓	↓	↓	↓	↓	↓	↓

Sample Custodian: [redacted]　　Survey End Date: 12/29/22　　Survey/pH End Time: 1510

pH re-check required? YES or NO　　*NOTE: Any metals sample acidified at sample receiving must be re-checked after a 24 hour hold.*

If YES:　pH re-check date/time: ______/______　　Analyst: ________　　pH strip lot #: ________

Were all re-checked samples' pH < 2? YES or NO*

**If no, complete and send to Project Management:*
1. Section A of PALA-SR-001-FM-05 (24 Hour Hold pH Readjustment)
2. SR section of PALA-SR-001-FM-03 (Discrepant Sample Receipt Report).

PALA-SR-001-FM-02 r 00.2 Sample Survey Form
Effective Date: 8:52 AM

Page ____ of ____

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

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ANALYTICAL REPORT

PREPARED FOR

Attn: [redacted]
GES-AIS LLC
1501 W Fountainhead Parkway
Ste 550
Tempe, Arizona 85282

Generated 12/21/2022 4:24:34 PM

JOB DESCRIPTION

Hunters Point, Parcel C Air Monitoring

JOB NUMBER

320-95256-1

Eurofins Sacramento
880 Riverside Parkway
West Sacramento CA 95605

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northern California, LLC Project Manager.

Author

[redacted]

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Authorized for release by
[redacted] Project Manager I
[redacted]
[redacted]

Table of Contents

Definitions/Glossary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95256-1

Laboratory: Eurofins Sacramento

Narrative

Job Narrative
320-95256-1

Comments
No additional comments.

Receipt
The samples were received on 12/14/2022 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 19.5º C.

Metals
Method PM10: The following sample in analytical batch 320-641918 was recorded with a negative net weight: GESPM101722-639 (320-95256-2). No particulate loading on the filter or damage to the filter could be observed.

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

Detection Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESTSP101722-639 — Lab Sample ID: 320-95256-1

No Detections.

Client Sample ID: GESPM101722-639 — Lab Sample ID: 320-95256-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.00053	J	0.0012	0.00017	ug/m3 (Air)	1		6020	Total/NA

Client Sample ID: GESTSP101722-640 — Lab Sample ID: 320-95256-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	15.3862		0.3316	0.3316	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESTSP101722-641 — Lab Sample ID: 320-95256-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	19.5617		0.3271	0.3271	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-640 — Lab Sample ID: 320-95256-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0017		0.00074	0.00011	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0032		0.00074	0.00010	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	11		0.31	0.31	ug/m3	1		PM10	Total/NA

Client Sample ID: GESPM101722-641 — Lab Sample ID: 320-95256-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0014		0.00068	0.00010	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0034		0.00068	0.000095	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	15		0.28	0.28	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-642 — Lab Sample ID: 320-95256-7

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	21.6813		0.3142	0.3142	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESTSP101722-643 — Lab Sample ID: 320-95256-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	21.7112		0.3102	0.3102	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-642 — Lab Sample ID: 320-95256-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.00090		0.00070	0.00011	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0028		0.00070	0.000098	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	13		0.29	0.29	ug/m3	1		PM10	Total/NA

Client Sample ID: GESPM101722-643 — Lab Sample ID: 320-95256-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.00091		0.00066	0.000099	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0026		0.00066	0.000093	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	13		0.28	0.28	ug/m3	1		PM10	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESTSP101722-644 — Lab Sample ID: 320-95256-11

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	49.4502		1.1290	1.1290	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESTSP101722-645 — Lab Sample ID: 320-95256-12

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	30.6007		1.1087	1.1087	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-644 — Lab Sample ID: 320-95256-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0032		0.0025	0.00037	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0079		0.0025	0.00035	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	14		1.0	1.0	ug/m3	1		PM10	Total/NA

Client Sample ID: GESPM101722-645 — Lab Sample ID: 320-95256-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0019	J	0.0024	0.00036	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0046		0.0024	0.00033	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	19		0.99	0.99	ug/m3	1		PM10	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GESTSP101722-639
Lab Sample ID: 320-95256-1
Date Collected: 12/06/22 08:00
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	ND		0.5000	0.5000	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESPM101722-639
Lab Sample ID: 320-95256-2
Date Collected: 12/06/22 08:00
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0012	0.00018	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:03	1
Manganese	**0.00053**	**J**	0.0012	0.00017	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:03	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	ND		0.50	0.50	ug/m3			12/15/22 07:30	1

Client Sample ID: GESTSP101722-640
Lab Sample ID: 320-95256-3
Date Collected: 12/07/22 07:46
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	**15.3862**		0.3316	0.3316	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESTSP101722-641
Lab Sample ID: 320-95256-4
Date Collected: 12/07/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	**19.5617**		0.3271	0.3271	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESPM101722-640
Lab Sample ID: 320-95256-5
Date Collected: 12/07/22 07:46
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.0017**		0.00074	0.00011	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:12	1
Manganese	**0.0032**		0.00074	0.00010	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:12	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	**11**		0.31	0.31	ug/m3			12/15/22 07:30	1

Client Sample ID: GESPM101722-641
Lab Sample ID: 320-95256-6
Date Collected: 12/07/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0014		0.00068	0.00010	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:15	1
Manganese	0.0034		0.00068	0.000095	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:15	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	15		0.28	0.28	ug/m3			12/15/22 07:30	1

Client Sample ID: GESTSP101722-642
Lab Sample ID: 320-95256-7
Date Collected: 12/08/22 07:47
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	21.6813		0.3142	0.3142	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESTSP101722-643
Lab Sample ID: 320-95256-8
Date Collected: 12/08/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	21.7112		0.3102	0.3102	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESPM101722-642
Lab Sample ID: 320-95256-9
Date Collected: 12/08/22 07:47
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00090		0.00070	0.00011	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:25	1
Manganese	0.0028		0.00070	0.000098	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:25	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	13		0.29	0.29	ug/m3			12/15/22 07:30	1

Client Sample ID: GESPM101722-643
Lab Sample ID: 320-95256-10
Date Collected: 12/08/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00091		0.00066	0.000099	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:28	1
Manganese	0.0026		0.00066	0.000093	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:28	1

Client Sample ID: GESPM101722-643
Lab Sample ID: 320-95256-10
Date Collected: 12/08/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	13		0.28	0.28	ug/m3			12/15/22 07:30	1

Client Sample ID: GESTSP101722-644
Lab Sample ID: 320-95256-11
Date Collected: 12/08/22 14:24
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	49.4502		1.1290	1.1290	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESTSP101722-645
Lab Sample ID: 320-95256-12
Date Collected: 12/08/22 14:12
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	30.6007		1.1087	1.1087	ug/m3 (Air)			12/15/22 07:30	1

Client Sample ID: GESPM101722-644
Lab Sample ID: 320-95256-13
Date Collected: 12/08/22 14:24
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0032		0.0025	0.00037	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:32	1
Manganese	0.0079		0.0025	0.00035	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:32	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	14		1.0	1.0	ug/m3			12/15/22 07:30	1

Client Sample ID: GESPM101722-645
Lab Sample ID: 320-95256-14
Date Collected: 12/08/22 14:12
Matrix: Air
Date Received: 12/14/22 09:45
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0019	J	0.0024	0.00036	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:35	1
Manganese	0.0046		0.0024	0.00033	ug/m3 (Air)		12/19/22 08:30	12/19/22 13:35	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	19		0.99	0.99	ug/m3			12/15/22 07:30	1

QC Sample Results

Client: GES-AIS LLC
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95256-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 320-641236/1-B
Matrix: Air
Analysis Batch: 641509

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 641237

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0012	0.00018	ug/m3 (Air)		12/19/22 08:30	12/19/22 12:53	1
Manganese	ND		0.0012	0.00017	ug/m3 (Air)		12/19/22 08:30	12/19/22 12:53	1

Lab Sample ID: LCS 320-641236/2-B
Matrix: Air
Analysis Batch: 641509

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 641237

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead			0.240	0.234		ug/m3 (Air)		98	86 - 111		
Manganese			0.240	0.238		ug/m3 (Air)		99	88 - 110		

Lab Sample ID: LCSD 320-641236/3-B
Matrix: Air
Analysis Batch: 641509

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 641237

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead			0.240	0.225		ug/m3 (Air)		94	86 - 111	4	15
Manganese			0.240	0.233		ug/m3 (Air)		97	88 - 110	2	15

QC Association Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Metals

Pre Prep Batch: 641236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95256-2	GESPM101722-639	Total/NA	Air	Filter to Air	
320-95256-5	GESPM101722-640	Total/NA	Air	Filter to Air	
320-95256-6	GESPM101722-641	Total/NA	Air	Filter to Air	
320-95256-9	GESPM101722-642	Total/NA	Air	Filter to Air	
320-95256-10	GESPM101722-643	Total/NA	Air	Filter to Air	
320-95256-13	GESPM101722-644	Total/NA	Air	Filter to Air	
320-95256-14	GESPM101722-645	Total/NA	Air	Filter to Air	
MB 320-641236/1-B	Method Blank	Total/NA	Air	Filter to Air	
LCS 320-641236/2-B	Lab Control Sample	Total/NA	Air	Filter to Air	
LCSD 320-641236/3-B	Lab Control Sample Dup	Total/NA	Air	Filter to Air	

Prep Batch: 641237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95256-2	GESPM101722-639	Total/NA	Air	3050B	641236
320-95256-5	GESPM101722-640	Total/NA	Air	3050B	641236
320-95256-6	GESPM101722-641	Total/NA	Air	3050B	641236
320-95256-9	GESPM101722-642	Total/NA	Air	3050B	641236
320-95256-10	GESPM101722-643	Total/NA	Air	3050B	641236
320-95256-13	GESPM101722-644	Total/NA	Air	3050B	641236
320-95256-14	GESPM101722-645	Total/NA	Air	3050B	641236
MB 320-641236/1-B	Method Blank	Total/NA	Air	3050B	641236
LCS 320-641236/2-B	Lab Control Sample	Total/NA	Air	3050B	641236
LCSD 320-641236/3-B	Lab Control Sample Dup	Total/NA	Air	3050B	641236

Analysis Batch: 641509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95256-2	GESPM101722-639	Total/NA	Air	6020	641237
320-95256-5	GESPM101722-640	Total/NA	Air	6020	641237
320-95256-6	GESPM101722-641	Total/NA	Air	6020	641237
320-95256-9	GESPM101722-642	Total/NA	Air	6020	641237
320-95256-10	GESPM101722-643	Total/NA	Air	6020	641237
320-95256-13	GESPM101722-644	Total/NA	Air	6020	641237
320-95256-14	GESPM101722-645	Total/NA	Air	6020	641237
MB 320-641236/1-B	Method Blank	Total/NA	Air	6020	641237
LCS 320-641236/2-B	Lab Control Sample	Total/NA	Air	6020	641237
LCSD 320-641236/3-B	Lab Control Sample Dup	Total/NA	Air	6020	641237

General Chemistry

Pre Prep Batch: 641917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95256-1	GESTSP101722-639	Total/NA	Air	Filter to Air	
320-95256-3	GESTSP101722-640	Total/NA	Air	Filter to Air	
320-95256-4	GESTSP101722-641	Total/NA	Air	Filter to Air	
320-95256-7	GESTSP101722-642	Total/NA	Air	Filter to Air	
320-95256-8	GESTSP101722-643	Total/NA	Air	Filter to Air	
320-95256-11	GESTSP101722-644	Total/NA	Air	Filter to Air	
320-95256-12	GESTSP101722-645	Total/NA	Air	Filter to Air	

QC Association Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

General Chemistry

Analysis Batch: 641918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95256-2	GESPM101722-639	Total/NA	Air	PM10	
320-95256-5	GESPM101722-640	Total/NA	Air	PM10	
320-95256-6	GESPM101722-641	Total/NA	Air	PM10	
320-95256-9	GESPM101722-642	Total/NA	Air	PM10	
320-95256-10	GESPM101722-643	Total/NA	Air	PM10	
320-95256-13	GESPM101722-644	Total/NA	Air	PM10	
320-95256-14	GESPM101722-645	Total/NA	Air	PM10	

Analysis Batch: 641919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95256-1	GESTSP101722-639	Total/NA	Air	40CFR50 App B	641917
320-95256-3	GESTSP101722-640	Total/NA	Air	40CFR50 App B	641917
320-95256-4	GESTSP101722-641	Total/NA	Air	40CFR50 App B	641917
320-95256-7	GESTSP101722-642	Total/NA	Air	40CFR50 App B	641917
320-95256-8	GESTSP101722-643	Total/NA	Air	40CFR50 App B	641917
320-95256-11	GESTSP101722-644	Total/NA	Air	40CFR50 App B	641917
320-95256-12	GESTSP101722-645	Total/NA	Air	40CFR50 App B	641917

Lab Chronicle

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESTSP101722-639
Lab Sample ID: 320-95256-1
Date Collected: 12/06/22 08:00
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESPM101722-639
Lab Sample ID: 320-95256-2
Date Collected: 12/06/22 08:00
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:03	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	-0.0002 g	641918	12/15/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-640
Lab Sample ID: 320-95256-3
Date Collected: 12/07/22 07:46
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESTSP101722-641
Lab Sample ID: 320-95256-4
Date Collected: 12/07/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESPM101722-640
Lab Sample ID: 320-95256-5
Date Collected: 12/07/22 07:46
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:12	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0174 g	641918	12/15/22 07:30	[redacted]	EET SAC

Lab Chronicle

Client: GES-AIS LLC
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95256-1

Client Sample ID: GESPM101722-641

Lab Sample ID: 320-95256-6
Date Collected: 12/07/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:15	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0259 g	641918	12/15/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-642

Lab Sample ID: 320-95256-7
Date Collected: 12/08/22 07:47
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESTSP101722-643

Lab Sample ID: 320-95256-8
Date Collected: 12/08/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESPM101722-642

Lab Sample ID: 320-95256-9
Date Collected: 12/08/22 07:47
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:25	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0223 g	641918	12/15/22 07:30	[redacted]	EET SAC

Client Sample ID: GESPM101722-643

Lab Sample ID: 320-95256-10
Date Collected: 12/08/22 07:32
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:28	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0243 g	641918	12/15/22 07:30	[redacted]	EET SAC

Lab Chronicle

Client: GES-AIS LLC
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95256-1

Client Sample ID: GESTSP101722-644

Lab Sample ID: 320-95256-11
Date Collected: 12/08/22 14:24
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESTSP101722-645

Lab Sample ID: 320-95256-12
Date Collected: 12/08/22 14:12
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			641919	12/15/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					641917	12/21/22 15:25	[redacted]	EET SAC

Client Sample ID: GESPM101722-644

Lab Sample ID: 320-95256-13
Date Collected: 12/08/22 14:24
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:32	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0066 g	641918	12/15/22 07:30	[redacted]	EET SAC

Client Sample ID: GESPM101722-645

Lab Sample ID: 320-95256-14
Date Collected: 12/08/22 14:12
Matrix: Air
Date Received: 12/14/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641236	12/19/22 08:25	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641237	12/19/22 08:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			641509	12/19/22 13:35	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0098 g	641918	12/15/22 07:30	[redacted]	EET SAC

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2468	01-20-24
Oregon	NELAP	4040	01-29-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
40CFR50 App B		Air	Total Suspended Particulates
PM10		Air	Particulate Matter as PM 10

Method Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	EET SAC
40CFR50 App B	Suspended Particulate Matter in Ambient Air	EPA	EET SAC
PM10	Particulate Matter	40CFR50J	EET SAC
3050B	Preparation, Metals	SW846	EET SAC
Filter to Air	Filter to Air volume ratio	None	EET SAC

Protocol References:

40CFR50J = 40 CFR Part 50 Appendix J

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GES-AIS LLC
Job ID: 320-95256-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-95256-1	GESTSP101722-639	Air	12/06/22 08:00	12/14/22 09:45
320-95256-2	GESPM101722-639	Air	12/06/22 08:00	12/14/22 09:45
320-95256-3	GESTSP101722-640	Air	12/07/22 07:46	12/14/22 09:45
320-95256-4	GESTSP101722-641	Air	12/07/22 07:32	12/14/22 09:45
320-95256-5	GESPM101722-640	Air	12/07/22 07:46	12/14/22 09:45
320-95256-6	GESPM101722-641	Air	12/07/22 07:32	12/14/22 09:45
320-95256-7	GESTSP101722-642	Air	12/08/22 07:47	12/14/22 09:45
320-95256-8	GESTSP101722-643	Air	12/08/22 07:32	12/14/22 09:45
320-95256-9	GESPM101722-642	Air	12/08/22 07:47	12/14/22 09:45
320-95256-10	GESPM101722-643	Air	12/08/22 07:32	12/14/22 09:45
320-95256-11	GESTSP101722-644	Air	12/08/22 14:24	12/14/22 09:45
320-95256-12	GESTSP101722-645	Air	12/08/22 14:12	12/14/22 09:45
320-95256-13	GESPM101722-644	Air	12/08/22 14:24	12/14/22 09:45
320-95256-14	GESPM101722-645	Air	12/08/22 14:12	12/14/22 09:45

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # [redacted]121422 AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

320-95256 Chain of Custody

Equipment:

Code	Matrix
A	Air
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESTSP101722-639	AQ	12/06/2022	0800	[redacted]		X		FIELDQC	FB1	0.00	0.00	1	
2	GESPM101722-639	AQ	12/06/2022	0800		X		X	FIELDQC	FB1	0.00	0.00	1	
3	GESTSP101722-640	A	12/07/2022	0746			X		MSC01	N1	0.00	0.00	1	
4	GESTSP101722-641	A	12/07/2022	0732			X		MSC02	N1	0.00	0.00	1	
5	GESPM101722-640	A	12/07/2022	0746		X		X	MSC01	N1	0.00	0.00	1	
6	GESPM101722-641	A	12/07/2022	0732		X		X	MSC02	N1	0.00	0.00	1	
7														
8														
9														
10														

[redacted]

12/12/22

Turnaround Time: NA

Relinquished by: *(Signature)*	**Date**	**Time**
[redacted]	12/13/22	1500

Received by: *(Signature)*	**Date**	**Time**
FedEx	12/13/22	1500
[redacted]	12.14.22	0945

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/13/22 / FEDEX / 7705 0219 7085

Received by Laboratory: *(Signature, Date, Time)* **& condition**

19.5°C

GES.Navy_COC_Field
November 21, 2022

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC #[redacted]21422 AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250 mL Plastic, 4 Degrees C
1	1x Envelope, None

	Sample ID	Matrix	Date	Time	Samp Init.	CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
	Event: Parcel C Air Monitoring					1	1	1						
1	GESTSP101722-642	A	12/08/22	0747	[redacted]		X		MSC01	N1	0.00	0.00	1	
2	GESTSP101722-643	A	12/08/22	0732			X		MSC02	N1	0.00	0.00	1	
3	GESPM101722-642	A	12/08/22	0747		X		X	MSC01	N1	0.00	0.00	1	
4	GESPM101722-643	A	12/08/22	0732		X		X	MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

Turnaround Time: NA

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/13/22	1500	Fedex	12/13/22	1500
			[redacted]	12-14-22	0854

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/13/22 / FEDEX / 7705 0219 7085

Received by Laboratory: *(Signature, Date, Time)* **& condition**

19.5°C

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # [redacted]121422AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250 mL Plastic, 4 Degrees C
1	1x Envelope, None

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESTSP101722-644	A	12/08/22	1424	[redacted]		X		MSC01	N1	0.00	0.00	1	
2	GESTSP101722-645	A	12/08/22	1412			X		MSC02	N1	0.00	0.00	1	
3	GESPM101722-644	A	12/08/22	1424		X		X	MSC01	N1	0.00	0.00	1	
4	GESPM101722-645	A	12/08/22	1412		X		X	MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

[redacted] 12/13/22

Turnaround Time: NA

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/13/22	1500	FedEx	12/13/22	1500
			[redacted]	12-14-22	0945

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/13/22 / FEDEX / 7705 0219 7085

Received by Laboratory: *(Signature, Date, Time)* **& condition**

GES.Navy_COC_Field
November 21, 2022

19.5°C

Sample ID	Matrix	Date	Time	Volume (M3)
GESPM101722-639	AQ	12/06/2022	0800	N/A
GESTSP101722-639	AQ	12/06/2022	0800	N/A
GESPM101722-640	A	12/07/2022	0746	VOLUME: 1507.84 (M3)
GESTSP101722-640	A	12/07/2022	0746	VOLUME: 1528.50 (M3)
GESPM101722-641	A	12/07/2022	0732	VOLUME: 1621.97 (M3)
GESTSP101722-641	A	12/07/2022	0732	VOLUME: 1774.67 (M3)
GESPM101722-642	A	12/08/2022	0747	VOLUME: 1591.23 (M3)
GESTSP101722-642	A	12/08/2022	0747	VOLUME: 1612.07 (M3)
GESPM101722-643	A	12/08/2022	0732	VOLUME: 1712.70 (M3)
GESTSP101722-643	A	12/08/2022	0732	VOLUME: 1814.62 (M3)
GESPM101722-644	A	12/08/2022	1424	VOLUME: 442.87 (M3)
GESTSP101722-644	A	12/08/2022	1424	VOLUME: 450.97 (M3)
GESPM111722-645	A	12/08/2022	1412	VOLUME: 480.23 (M3)
GESTSP111722-645	A	12/08/2022	1412	VOLUME: 506.50 (M3)

Login Sample Receipt Checklist

Client: GES-AIS LLC

Job Number: 320-95256-1

Login Number: 95256

List Source: Eurofins Sacramento

List Number: 1

Creator: [redacted]

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	SEAL
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	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	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: [redacted]
GES-AIS LLC
1501 W Fountainhead Parkway
Ste 550
Tempe, Arizona 85282

Generated 2/9/2023 11:20:01 AM Revision 2

JOB DESCRIPTION

Hunters Point, Parcel C Air Monitoring

JOB NUMBER

320-95404-1

Eurofins Sacramento
880 Riverside Parkway
West Sacramento CA 95605

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northern California, LLC Project Manager.

Authorization

[redacted]

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Revision 2

Table of Contents

Definitions/Glossary

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95404-1

Laboratory: Eurofins Sacramento

Narrative

Job Narrative
320-95404-1

Revision
This report was revised December 30, 2022 to remove Copper results. No other data changed as a result of this revision.

2/9/23: As requested, the TSP results for samples GESTSP101722-653 & GESTSP101722-654 and the PM10 results for samples GEWPM101722-653 & GEWPM101722-654 have been removed from the report.

Receipt
The samples were received on 12/17/2022 8:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 16.7º C.

Metals
Method PM10: The following sample in analytical batch 320-643472 was recorded with a negative net weight: GESPM101722-646 (320-95404-1). No particulate loading on the filter or damage to the filter could be observed.

Method 40CFR50 App B: The following sample in preparation batch 320-643458 and analytical batch 320-643460 was recorded with a negative net weight: GESTSP101722-646 (320-95404-2). No particulate loading on the filter or damage to the filter could be observed.

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

Detection Summary

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESPM101722-646 — Lab Sample ID: 320-95404-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.00036	J	0.0012	0.00017	ug/m3 (Air)	1		6020	Total/NA

Client Sample ID: GESTSP101722-646 — Lab Sample ID: 320-95404-2

No Detections.

Client Sample ID: GESPM101722-647 — Lab Sample ID: 320-95404-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0012		0.00074	0.00011	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0027		0.00074	0.00010	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	13		0.31	0.31	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-647 — Lab Sample ID: 320-95404-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	24.8372		0.3066	0.3066	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-648 — Lab Sample ID: 320-95404-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0010		0.00070	0.00011	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0023		0.00070	0.000098	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	16		0.29	0.29	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-648 — Lab Sample ID: 320-95404-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	21.2760		0.2763	0.2763	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-649 — Lab Sample ID: 320-95404-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0011		0.00074	0.00011	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0036		0.00074	0.00010	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	14		0.31	0.31	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-649 — Lab Sample ID: 320-95404-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	30.4037		0.3059	0.3059	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-650 — Lab Sample ID: 320-95404-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.00095		0.00069	0.00010	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0027		0.00069	0.000097	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	16		0.29	0.29	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-650 — Lab Sample ID: 320-95404-10

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	19.9937		0.2724	0.2724	ug/m3 (Air)	1		40CFR50 App B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESPM101722-651 — Lab Sample ID: 320-95404-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0024		0.00073	0.00011	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0073		0.00073	0.00010	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	24		0.31	0.31	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-651 — Lab Sample ID: 320-95404-12

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	54.8964		0.3094	0.3094	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-652 — Lab Sample ID: 320-95404-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0020		0.00070	0.00010	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0041		0.00070	0.000098	ug/m3 (Air)	1		6020	Total/NA
Particulate Matter as PM 10	22		0.29	0.29	ug/m3	1		PM10	Total/NA

Client Sample ID: GESTSP101722-652 — Lab Sample ID: 320-95404-14

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Particulates	30.8806		0.2743	0.2743	ug/m3 (Air)	1		40CFR50 App B	Total/NA

Client Sample ID: GESPM101722-653 — Lab Sample ID: 320-95404-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0031		0.0027	0.00040	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.014		0.0027	0.00037	ug/m3 (Air)	1		6020	Total/NA

Client Sample ID: GESPM101722-654 — Lab Sample ID: 320-95404-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.0016	J	0.0024	0.00036	ug/m3 (Air)	1		6020	Total/NA
Manganese	0.0035		0.0024	0.00034	ug/m3 (Air)	1		6020	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: GESPM101722-646
Lab Sample ID: 320-95404-1
Date Collected: 12/12/22 08:00
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0012	0.00018	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:36	1
Manganese	**0.00036**	**J**	0.0012	0.00017	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:36	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	ND		0.50	0.50	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-646
Lab Sample ID: 320-95404-2
Date Collected: 12/12/22 08:00
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	ND		0.5000	0.5000	ug/m3 (Air)			12/19/22 07:30	1

Client Sample ID: GESPM101722-647
Lab Sample ID: 320-95404-3
Date Collected: 12/13/22 07:46
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.0012**		0.00074	0.00011	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:46	1
Manganese	**0.0027**		0.00074	0.00010	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	**13**		0.31	0.31	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-647
Lab Sample ID: 320-95404-4
Date Collected: 12/13/22 07:46
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	**24.8372**		0.3066	0.3066	ug/m3 (Air)			12/19/22 07:30	1

Client Sample ID: GESPM101722-648
Lab Sample ID: 320-95404-5
Date Collected: 12/13/22 07:31
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.0010**		0.00070	0.00011	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:55	1
Manganese	**0.0023**		0.00070	0.000098	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:55	1

Client Sample ID: GESPM101722-648
Lab Sample ID: 320-95404-5
Date Collected: 12/13/22 07:31
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	16		0.29	0.29	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-648
Lab Sample ID: 320-95404-6
Date Collected: 12/13/22 07:31
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	21.2760		0.2763	0.2763	ug/m3 (Air)			12/19/22 07:30	1

Client Sample ID: GESPM101722-649
Lab Sample ID: 320-95404-7
Date Collected: 12/14/22 07:49
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0011		0.00074	0.00011	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:59	1
Manganese	0.0036		0.00074	0.00010	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:59	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	14		0.31	0.31	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-649
Lab Sample ID: 320-95404-8
Date Collected: 12/14/22 07:49
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	30.4037		0.3059	0.3059	ug/m3 (Air)			12/19/22 07:30	1

Client Sample ID: GESPM101722-650
Lab Sample ID: 320-95404-9
Date Collected: 12/14/22 07:40
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.00095		0.00069	0.00010	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:02	1
Manganese	0.0027		0.00069	0.000097	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:02	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	16		0.29	0.29	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-650
Lab Sample ID: 320-95404-10
Date Collected: 12/14/22 07:40
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	19.9937		0.2724	0.2724	ug/m3 (Air)			12/19/22 07:30	1

Client Sample ID: GESPM101722-651
Lab Sample ID: 320-95404-11
Date Collected: 12/15/22 07:42
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0024		0.00073	0.00011	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:05	1
Manganese	0.0073		0.00073	0.00010	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:05	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	24		0.31	0.31	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-651
Lab Sample ID: 320-95404-12
Date Collected: 12/15/22 07:42
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	54.8964		0.3094	0.3094	ug/m3 (Air)			12/19/22 07:30	1

Client Sample ID: GESPM101722-652
Lab Sample ID: 320-95404-13
Date Collected: 12/15/22 07:32
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0020		0.00070	0.00010	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:08	1
Manganese	0.0041		0.00070	0.000098	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:08	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Particulate Matter as PM 10 (40CFR50J PM10)	22		0.29	0.29	ug/m3			12/19/22 07:30	1

Client Sample ID: GESTSP101722-652
Lab Sample ID: 320-95404-14
Date Collected: 12/15/22 07:32
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Particulates (EPA 40CFR50 App B)	30.8806		0.2743	0.2743	ug/m3 (Air)			12/19/22 07:30	1

Client Sample Results

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESPM101722-653
Lab Sample ID: 320-95404-15
Date Collected: 12/15/22 14:36
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0031		0.0027	0.00040	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:12	1
Manganese	0.014		0.0027	0.00037	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:12	1

Client Sample ID: GESPM101722-654
Lab Sample ID: 320-95404-17
Date Collected: 12/15/22 14:37
Matrix: Air
Date Received: 12/17/22 08:30
Sample Container: Folder/Filter

Method: SW846 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0016	J	0.0024	0.00036	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:15	1
Manganese	0.0035		0.0024	0.00034	ug/m3 (Air)		12/21/22 06:30	12/22/22 18:15	1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 320-641739/1-B
Matrix: Air
Analysis Batch: 642787

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 641745

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0012	0.00018	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:27	1
Manganese	ND		0.0012	0.00017	ug/m3 (Air)		12/21/22 06:30	12/22/22 17:27	1

Lab Sample ID: LCS 320-641739/2-B
Matrix: Air
Analysis Batch: 642787

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 641745

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lead			0.240	0.249		ug/m3 (Air)		104	86 - 111		
Manganese			0.240	0.247		ug/m3 (Air)		103	88 - 110		

Lab Sample ID: LCSD 320-641739/3-B
Matrix: Air
Analysis Batch: 642787

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 641745

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead			0.240	0.246		ug/m3 (Air)		103	86 - 111	1	15
Manganese			0.240	0.248		ug/m3 (Air)		103	88 - 110	0	15

Metals

Pre Prep Batch: 641739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-1	GESPM101722-646	Total/NA	Air	Filter to Air	
320-95404-3	GESPM101722-647	Total/NA	Air	Filter to Air	
320-95404-5	GESPM101722-648	Total/NA	Air	Filter to Air	
320-95404-7	GESPM101722-649	Total/NA	Air	Filter to Air	
320-95404-9	GESPM101722-650	Total/NA	Air	Filter to Air	
320-95404-11	GESPM101722-651	Total/NA	Air	Filter to Air	
320-95404-13	GESPM101722-652	Total/NA	Air	Filter to Air	
320-95404-15	GESPM101722-653	Total/NA	Air	Filter to Air	
320-95404-17	GESPM101722-654	Total/NA	Air	Filter to Air	
MB 320-641739/1-B	Method Blank	Total/NA	Air	Filter to Air	
LCS 320-641739/2-B	Lab Control Sample	Total/NA	Air	Filter to Air	
LCSD 320-641739/3-B	Lab Control Sample Dup	Total/NA	Air	Filter to Air	

Prep Batch: 641745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-1	GESPM101722-646	Total/NA	Air	3050B	641739
320-95404-3	GESPM101722-647	Total/NA	Air	3050B	641739
320-95404-5	GESPM101722-648	Total/NA	Air	3050B	641739
320-95404-7	GESPM101722-649	Total/NA	Air	3050B	641739
320-95404-9	GESPM101722-650	Total/NA	Air	3050B	641739
320-95404-11	GESPM101722-651	Total/NA	Air	3050B	641739
320-95404-13	GESPM101722-652	Total/NA	Air	3050B	641739
320-95404-15	GESPM101722-653	Total/NA	Air	3050B	641739
320-95404-17	GESPM101722-654	Total/NA	Air	3050B	641739
MB 320-641739/1-B	Method Blank	Total/NA	Air	3050B	641739
LCS 320-641739/2-B	Lab Control Sample	Total/NA	Air	3050B	641739
LCSD 320-641739/3-B	Lab Control Sample Dup	Total/NA	Air	3050B	641739

Analysis Batch: 642787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-1	GESPM101722-646	Total/NA	Air	6020	641745
320-95404-3	GESPM101722-647	Total/NA	Air	6020	641745
320-95404-5	GESPM101722-648	Total/NA	Air	6020	641745
320-95404-7	GESPM101722-649	Total/NA	Air	6020	641745
320-95404-9	GESPM101722-650	Total/NA	Air	6020	641745
320-95404-11	GESPM101722-651	Total/NA	Air	6020	641745
320-95404-13	GESPM101722-652	Total/NA	Air	6020	641745
320-95404-15	GESPM101722-653	Total/NA	Air	6020	641745
320-95404-17	GESPM101722-654	Total/NA	Air	6020	641745
MB 320-641739/1-B	Method Blank	Total/NA	Air	6020	641745
LCS 320-641739/2-B	Lab Control Sample	Total/NA	Air	6020	641745
LCSD 320-641739/3-B	Lab Control Sample Dup	Total/NA	Air	6020	641745

General Chemistry

Pre Prep Batch: 643458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-2	GESTSP101722-646	Total/NA	Air	Filter to Air	
320-95404-4	GESTSP101722-647	Total/NA	Air	Filter to Air	
320-95404-6	GESTSP101722-648	Total/NA	Air	Filter to Air	
320-95404-8	GESTSP101722-649	Total/NA	Air	Filter to Air	

General Chemistry (Continued)

Pre Prep Batch: 643458 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-10	GESTSP101722-650	Total/NA	Air	Filter to Air	
320-95404-12	GESTSP101722-651	Total/NA	Air	Filter to Air	
320-95404-14	GESTSP101722-652	Total/NA	Air	Filter to Air	

Analysis Batch: 643460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-2	GESTSP101722-646	Total/NA	Air	40CFR50 App B	643458
320-95404-4	GESTSP101722-647	Total/NA	Air	40CFR50 App B	643458
320-95404-6	GESTSP101722-648	Total/NA	Air	40CFR50 App B	643458
320-95404-8	GESTSP101722-649	Total/NA	Air	40CFR50 App B	643458
320-95404-10	GESTSP101722-650	Total/NA	Air	40CFR50 App B	643458
320-95404-12	GESTSP101722-651	Total/NA	Air	40CFR50 App B	643458
320-95404-14	GESTSP101722-652	Total/NA	Air	40CFR50 App B	643458

Analysis Batch: 643472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-95404-1	GESPM101722-646	Total/NA	Air	PM10	
320-95404-3	GESPM101722-647	Total/NA	Air	PM10	
320-95404-5	GESPM101722-648	Total/NA	Air	PM10	
320-95404-7	GESPM101722-649	Total/NA	Air	PM10	
320-95404-9	GESPM101722-650	Total/NA	Air	PM10	
320-95404-11	GESPM101722-651	Total/NA	Air	PM10	
320-95404-13	GESPM101722-652	Total/NA	Air	PM10	

Lab Chronicle

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESPM101722-646
Lab Sample ID: 320-95404-1
Date Collected: 12/12/22 08:00
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 17:36	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	-0.0003 g	643472	12/19/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-646
Lab Sample ID: 320-95404-2
Date Collected: 12/12/22 08:00
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Client Sample ID: GESPM101722-647
Lab Sample ID: 320-95404-3
Date Collected: 12/13/22 07:46
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 17:46	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0210 g	643472	12/19/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-647
Lab Sample ID: 320-95404-4
Date Collected: 12/13/22 07:46
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Client Sample ID: GESPM101722-648
Lab Sample ID: 320-95404-5
Date Collected: 12/13/22 07:31
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 17:55	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0275 g	643472	12/19/22 07:30	[redacted]	EET SAC

Lab Chronicle

Client: GES-AIS LLC
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95404-1

Client Sample ID: GESTSP101722-648

Lab Sample ID: 320-95404-6
Date Collected: 12/13/22 07:31
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Client Sample ID: GESPM101722-649

Lab Sample ID: 320-95404-7
Date Collected: 12/14/22 07:49
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 17:59	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0225 g	643472	12/19/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-649

Lab Sample ID: 320-95404-8
Date Collected: 12/14/22 07:49
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Client Sample ID: GESPM101722-650

Lab Sample ID: 320-95404-9
Date Collected: 12/14/22 07:40
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 18:02	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0275 g	643472	12/19/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-650

Lab Sample ID: 320-95404-10
Date Collected: 12/14/22 07:40
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Lab Chronicle

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Client Sample ID: GESPM101722-651
Lab Sample ID: 320-95404-11
Date Collected: 12/15/22 07:42
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 18:05	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0396 g	643472	12/19/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-651
Lab Sample ID: 320-95404-12
Date Collected: 12/15/22 07:42
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Client Sample ID: GESPM101722-652
Lab Sample ID: 320-95404-13
Date Collected: 12/15/22 07:32
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 18:08	[redacted]	EET SAC
Total/NA	Analysis	PM10		1	0 g	0.0371 g	643472	12/19/22 07:30	[redacted]	EET SAC

Client Sample ID: GESTSP101722-652
Lab Sample ID: 320-95404-14
Date Collected: 12/15/22 07:32
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	40CFR50 App B		1			643460	12/19/22 07:30	[redacted]	EET SAC
Total/NA	Pre Prep	Filter to Air					643458	12/29/22 16:00	[redacted]	EET SAC

Client Sample ID: GESPM101722-653
Lab Sample ID: 320-95404-15
Date Collected: 12/15/22 14:36
Matrix: Air
Date Received: 12/17/22 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 18:12	[redacted]	EET SAC

Lab Chronicle

Client: GES-AIS LLC
Project/Site: Hunters Point, Parcel C Air Monitoring

Job ID: 320-95404-1

Client Sample ID: GESPM101722-654

Date Collected: 12/15/22 14:37
Date Received: 12/17/22 08:30

Lab Sample ID: 320-95404-17

Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Pre Prep	Filter to Air					641739	12/21/22 05:08	[redacted]	EET SAC
Total/NA	Prep	3050B			0.08333 Sample	100 mL	641745	12/21/22 06:30	[redacted]	EET SAC
Total/NA	Analysis	6020		1			642787	12/22/22 18:15	[redacted]	EET SAC

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Laboratory: Eurofins Sacramento

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2468	01-20-24
Oregon	NELAP	4040	01-29-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
40CFR50 App B		Air	Total Suspended Particulates
PM10		Air	Particulate Matter as PM 10

Method Summary

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	EET SAC
40CFR50 App B	Suspended Particulate Matter in Ambient Air	EPA	EET SAC
PM10	Particulate Matter	40CFR50J	EET SAC
3050B	Preparation, Metals	SW846	EET SAC
Filter to Air	Filter to Air volume ratio	None	EET SAC

Protocol References:

40CFR50J = 40 CFR Part 50 Appendix J

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GES-AIS LLC
Job ID: 320-95404-1
Project/Site: Hunters Point, Parcel C Air Monitoring

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-95404-1	GESPM101722-646	Air	12/12/22 08:00	12/17/22 08:30
320-95404-2	GESTSP101722-646	Air	12/12/22 08:00	12/17/22 08:30
320-95404-3	GESPM101722-647	Air	12/13/22 07:46	12/17/22 08:30
320-95404-4	GESTSP101722-647	Air	12/13/22 07:46	12/17/22 08:30
320-95404-5	GESPM101722-648	Air	12/13/22 07:31	12/17/22 08:30
320-95404-6	GESTSP101722-648	Air	12/13/22 07:31	12/17/22 08:30
320-95404-7	GESPM101722-649	Air	12/14/22 07:49	12/17/22 08:30
320-95404-8	GESTSP101722-649	Air	12/14/22 07:49	12/17/22 08:30
320-95404-9	GESPM101722-650	Air	12/14/22 07:40	12/17/22 08:30
320-95404-10	GESTSP101722-650	Air	12/14/22 07:40	12/17/22 08:30
320-95404-11	GESPM101722-651	Air	12/15/22 07:42	12/17/22 08:30
320-95404-12	GESTSP101722-651	Air	12/15/22 07:42	12/17/22 08:30
320-95404-13	GESPM101722-652	Air	12/15/22 07:32	12/17/22 08:30
320-95404-14	GESTSP101722-652	Air	12/15/22 07:32	12/17/22 08:30
320-95404-15	GESPM101722-653	Air	12/15/22 14:36	12/17/22 08:30
320-95404-17	GESPM101722-654	Air	12/15/22 14:37	12/17/22 08:30

CHAIN-OF-CUSTODY RECORD

Gilbane Federal [redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520 [redacted]

COC # MC121622AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: Parcel C Air Monitoring
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

320-95404 Chain of Custody

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESPM101722-646	AQ	12/12/2022	0800	[redacted]	X		X	FIELDQC	FB1	0.00	0.00	1	
2	GESTSP101722-646	AQ	12/12/2022	0800			X		FIELDQC	FB1	0.00	0.00	1	
3														
4														
5														
6														
7														
8														
9														
10														

[redacted] 12/16/22

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/16/22	1200	[redacted]	12/16/22	1200
				12/17/22	830

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/16/22 / FEDEX ~~7707 2041 7507~~ [redacted] 12/16/22
7707 7947 7033

Received by Laboratory: *(Signature, Date, Time)* **& condition**

GES.Navy_COC_Field
December 08, 2022

16.7°C

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # MC121622AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: Parcel C Air Monitoring
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESPM101722-647	A	12/13/2022	0746	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	GESTSP101722-647	A	12/13/2022	0746			X		MSC01	N1	0.00	0.00	1	
3	GESPM101722-648	A	12/13/2022	0731		X		X	MSC02	N1	0.00	0.00	1	
4	GESTSP101722-648	A	12/13/2022	0731			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/16/22	1200	[redacted]	12/16/22	1200
			[redacted]	12/17/22	830

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/16/22 / FEDEX / ~~7707 2041 7507~~ [redacted] (12/16/22)
7707 7947 7033

Received by Laboratory: *(Signature, Date, Time)* **& condition**

16.7°C

GES.Navy_COC_Field
December 08, 2022

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # MC121622AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESPM101722-649	A	12/14/2022	0749	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	GESTSP101722-649	A	12/14/2022	0749			X		MSC01	N1	0.00	0.00	1	
3	GESPM101722-650	A	12/14/2022	0740		X		X	MSC02	N1	0.00	0.00	1	
4	GESTSP101722-650	A	12/14/2022	0740			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

Turnaround Time: 5 days

Relinquished by: *(Signature)*	**Date**	**Time**
[redacted]	12/16/22	1200

Received by: *(Signature)*	**Date**	**Time**
FedEx	12/16/22	1200
[redacted] BOTAC	12.17.22	830

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/16/22 / FEDEX / ~~7707 2041 7507~~ [redacted] 12/16/22
7707 7947 7033

Received by Laboratory: *(Signature, Date, Time)* **& condition**

16.7°C

GES.Navy_COC_Field
December 08, 2022

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # MC121622AIRC

Gilbane

ject Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESPM101722-651	A	12/15/2022	0742	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	GESTSP101722-651	A	12/15/2022	0742			X		MSC01	N1	0.00	0.00	1	
3	GESPM101722-652	A	12/15/2022	0732		X		X	MSC02	N1	0.00	0.00	1	
4	GESTSP101722-652	A	12/15/2022	0732			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/16/22	1200	[redacted]	12/16/22	1200
				12.17.22	820

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/16/22 / FEDEX / ~~7707 2041 7507~~ [redacted] 12/16/22
7707 7947 7033

Received by Laboratory: *(Signature, Date, Time)* **& condition**

16.7°C

GES.Navy_COC_Field
December 08, 2022

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # MC121622AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS ENVIRONMENT TESTING NORTHERN CALIFORNIA, LLC (EETN	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 880 Riverside Parkway, West Sacramento, CA 95605	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6020 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	GESPM101722-653	A	12/15/2022	1436	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	GESTSP101722-653	A	12/15/2022	1436			X		MSC01	N1	0.00	0.00	1	
3	GESPM101722-654	A	12/15/2022	1437		X		X	MSC02	N1	0.00	0.00	1	
4	GESTSP101722-654	A	12/15/2022	1437			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

[redacted] 12/16/22

Turnaround Time: 5 days

Relinquished by: *(Signature)*	**Date**	**Time**	**Received by: *(Signature)***	**Date**	**Time**
[redacted]	12/16/22	1200	[redacted]	12/16/22	1200
				12.17.22	830

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/16/22 / FEDEX / ~~7707 2041 7507~~ [redacted] 12/16/22
770779477033

Received by Laboratory: *(Signature, Date, Time)* **& condition**

16.7°C

GES.Navy_COC_Field
December 08, 2022

COC # KT121622AIRC

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Event: **Parcel C Air Monito**
Project Number: J310000600	
WBS Code: J310000600	

Sample ID	Matrix	Date	Time	Comments
GESPM101722-646	AQ	12/12/2022	0800	NA
GESTSP101722-646	AQ	12/12/2022	0800	NA
GESPM101722-647	A	12/13/2022	0746	VOLUME: 1614.39 (M3)
GESTSP101722-647	A	12/13/2022	0746	VOLUME: 1630.62 (M3)
GESPM101722-648	A	12/13/2022	0731	VOLUME: 1709.14 (M3)
GESTSP101722-648	A	12/13/2022	0731	VOLUME: 1809.55 (M3)
GESPM101722-649	A	12/14/2022	0749	VOLUME: 1629.43 (M3)
GESTSP101722-649	A	12/14/2022	0749	VOLUME: 1634.67 (M3)
GESPM101722-650	A	12/14/2022	0740	VOLUME: 1729.85 (M3)
GESTSP101722-650	A	12/14/2022	0740	VOLUME: 1835.58 (M3)
GESPM101722-651	A	12/15/2022	0742	VOLUME: 1635.44 (M3)
GESTSP101722-651	A	12/15/2022	0742	VOLUME: 1615.77 (M3)
GESPM101722-652	A	12/15/2022	0732	VOLUME: 1716.53 (M3)
GESTSP101722-652	A	12/15/2022	0732	VOLUME: 1823.15 (M3)
GESPM101722-653	A	12/15/2022	1436	VOLUME: 451.25 (M3)
GESTSP101722-653	A	12/15/2022	1436	VOLUME: 457.42 (M3)
GESPM101722-654	A	12/15/2022	1437	VOLUME: 494.57 (M3)
GESTSP101722-654	A	12/15/2022	1437	VOLUME: 526.44 (M3)

Login Sample Receipt Checklist

Client: GES-AIS LLC

Job Number: 320-95404-1

Login Number: 95404
List Number: 1
Creator: [redacted]

List Source: Eurofins Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	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	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

[redacted]

Subject: FW: Modified Report and EDD

From: [redacted]
Sent: Monday, February 6, 2023 6:13 PM
To: Turpen, [redacted]
Subject: Modified Report and EDD

Hey [redacted],

May we have a modified report and EDD for SDG 320-95404?

We need the data for the following samples excluded:

- TSP:
  - GESTSP101722-653
  - GESTSP101722-654
- PM10:
  - GESPM101722-653
  - GESPM101722-654

Please include this email as an attachment in the modified laboratory report.

Please let me know if you have any questions.

Thank you,

[redacted]
Chemist I
GES | MBE
6790 S Dawson Cir
Centennial, CO 80112
[redacted]
GES-AIS.COM

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

January 5, 2023

[redacted]
AIS-GES, LLC
1501 W. FOUNTAINHEAD PKWY,
#550
TEMPE, AZ 85282

Laboratory Workorder ID: A363041

Client Project ID: J310000600 HUNTERS PT PARCEL C
Received: December 29, 2022
Reported: January 5, 2023

Attached are the results we obtained on the analysis of your samples submitted to Analytics. Any Chains-of-Custody associated by this sample group are enclosed. Air concentrations are calculated as a convenience to the client and the overall accuracy of this result depends on both the accuracy of the air volume and the amount found by analysis. Theoretical air volumes for passive monitors are calculated using the sampling time submitted and the manufacture's listed sampling rate for each compound. Results provided in this report relate only to the items tested.

For blanks and non-detects the results indicated with a '<' value represents the reporting limit for the analysis. Unless otherwise noted results are not corrected for blank values.

Unless the signature of the appropriate manager(s) appears on this report, this report should be considered PRELIMINARY and is subject to change.

We appreciate your confidence in allowing Analytics to be your testing laboratory. Any questions regarding this report can be addressed by calling our customer services department at (800) 888-8061.

[redacted]
Technical Director

Enclosures

eurofins | Built Environment Analytics

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Final Report

Work Order A363041

AIS-GES, LLC
1501 W. FOUNTAINHEAD PKWY, #550
TEMPE, AZ 85282

Customer: PARCELC1
Attention: [redacted]
PO Number J310000600

Date Received: 12/29/22
Client Project ID J310000600 HUNTERS PT PARCEL C

Lab ID: A363041001 Sample ID: PM113022-01 FIELDQC Media: 8X10 PREWEIGHED GLASS Sample Date: 12/19/2022 8:00:00 AM

Analyte	Method	Analysis Date	Volume		Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	0	L	1000 ug			81500 ug	--
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	0	L	14.0 ug			< 14 ug	--
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	0	L	98.0 ug			< 98 ug	--

Lab ID: A363041002 Sample ID: TSP113022-02 FIELDQC Media: 8X10 PREWEIGHED GLASS Sample Date: 12/19/2022 8:00:00 AM

Analyte	Method	Analysis Date	Volume		Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	0	L	1000 ug			< 1000 ug	--

Lab ID: A363041003 Sample ID: PM113022-03 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/20/2022 8:45:00 AM

Analyte	Method	Analysis Date	Volume		Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	1668080	L	1000 ug			40600 ug	24 ug/M3
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	1668080	L	14.0 ug			< 14 ug	< 0.0084 ug/M3
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	1668080	L	98.0 ug			< 98 ug	< 0.0588 ug/M3

eurofins | Built Environment Analytics

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Final Report

Work Order A363041

Lab ID: A363041004 Sample ID: TSP113022-04 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/20/2022 8:45:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	1682180 L	1000 ug			141000 ug	84 ug/M3

Lab ID: A363041005 Sample ID: PM113022-05 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/20/2022 8:35:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	1694700 L	1000 ug			42800 ug	25 ug/M3
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	1694700 L	14.0 ug			< 14 ug	< 0.0083 ug/M3
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	1694700 L	98.0 ug			< 98 ug	< 0.0578 ug/M3

Lab ID: A363041006 Sample ID: TSP113022-06 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/20/2022 8:35:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	1798100 L	1000 ug			59900 ug	33 ug/M3

Lab ID: A363041007 Sample ID: PM113022-07 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/21/2022 9:40:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	1698070 L	1000 ug			50100 ug	30 ug/M3
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	1698070 L	14.0 ug			< 14 ug	< 0.0082 ug/M3

eurofins | Built Environment Analytics

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Final Report

Work Order A363041

Lab ID: A363041007 Sample ID: PM113022-07 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/21/2022 9:40:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	1698070 L	98.0 ug			< 98 ug	< 0.0577 ug/M3

Lab ID: A363041008 Sample ID: TSP113022-08 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/21/2022 9:40:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	1720200 L	1000 ug			63300 ug	37 ug/M3

Lab ID: A363041009 Sample ID: PM113022-09 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/21/2022 9:30:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	1704090 L	1000 ug			50200 ug	29 ug/M3
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	1704090 L	14.0 ug			< 14 ug	< 0.0082 ug/M3
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	1704090 L	98.0 ug			< 98 ug	< 0.0575 ug/M3

Lab ID: A363041010 Sample ID: TSP113022-10 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/21/2022 9:30:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	1808380 L	1000 ug			66800 ug	37 ug/M3

eurofins | Built Environment Analytics

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Final Report

Work Order A363041

Lab ID: A363041011 Sample ID: PM113022-11 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/22/2022 7:53:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	1525860 L	1000 ug			156000 ug	102 ug/M3
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	1525860 L	14.0 ug			< 14 ug	< 0.0092 ug/M3
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	1525860 L	98.0 ug			< 98 ug	< 0.0642 ug/M3

Lab ID: A363041012 Sample ID: TSP113022-12 MSC01 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/22/2022 7:53:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	1537100 L	1000 ug			74500 ug	48 ug/M3

Lab ID: A363041013 Sample ID: PM113022-13 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/22/2022 7:46:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
PM10 Particulates	40CFR50 App.J	12/30/22	1619580 L	1000 ug			137000 ug	85 ug/M3
Lead	40CFR50App.G Mod./EPA 6010B	01/04/23	1619580 L	14.0 ug			< 14 ug	< 0.0086 ug/M3
Manganese	40CFR50App.G Mod./EPA 6010B	01/04/23	1619580 L	98.0 ug			< 98 ug	< 0.0605 ug/M3

Lab ID: A363041014 Sample ID: TSP113022-14 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/22/2022 7:46:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Final Report

Work Order A363041

Lab ID: A363041014 Sample ID: TSP113022-14 MSC02 Media: 8X10 PREWEIGHED GLASS Sample Date: 12/22/2022 7:46:00 AM

Analyte	Method	Analysis Date	Volume	Reporting Limit	Front	Rear	Total	Concentration
Total Suspended Particulates	40CFR50 App.B	12/30/22	1720940 L	1000 ug			199000 ug	116 ug/M3

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Final Report

Work Order A363041

General Laboratory Comments

Abbreviations:
ug = micrograms; mg=milligrams; g = grams, ppm=parts per million (volume), ppb = parts per billion (volume), mg/M3=milligrams per cubic meter of air, ug/M3=micrograms per cubic meter of air; Min=minutes, Qual=Qualifiers

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520

COC # LS122822AIRC

A363041

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS BUILT ENVIRONMENT TESTING ANALYTICS, ASHLAND, VA	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10329 Stony Run Lane, Ashland, VA 23005	

Comments:

Equipment:

Code	Matrix
AQ	Air Quality Control Matrix

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

Page 1 of ~~5~~ 4

[redacted] 12/5/12

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6010 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	PM113022-01	AQ	12/19/2022	0800	[redacted]	X		X	FIELDQC	FB1	0.00	0.00	1	
2	TSP113022-02	AQ	12/19/2022	0800			X		FIELDQC	FB2	0.00	0.00	1	
3														
4														
5														
6														
7														
8														
9														
10														

[redacted] 12/19/22

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/28/22	1200	FedEx	12/28/22	1200
			[redacted]	12/29/22	11:30

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/28/2022 / FEDEX ~~7707 7507 3007~~ 7708 6634 9949

[redacted] 12/28/22

Received by Laboratory: *(Signature, Date, Time)* **& condition**

[redacted] 12/29/22 11:30 Intact

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # LS122822AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS BUILT ENVIRONMENT TESTING ANALYTICS, ASHLAND, VA	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10329 Stony Run Lane, Ashland, VA 23005	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

[redacted] 12/28/22

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10 (1)	N0500 - Air TSP (1)	SW6010 - Air Pb Mn (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	PM113022-03	A	12/20/2022	0845	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	TSP113022-04	A	12/20/2022	0845			X		MSC01	N1	0.00	0.00	1	
3	PM113022-05	A	12/20/2022	0835		X		X	MSC02	N1	0.00	0.00	1	
4	TSP113022-06	A	12/20/2022	0835			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

[redacted] 12/28/22

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/28/22	1200	FedEx	12/28/22	1200
			[redacted]	12/29/22	11:30

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/28/2022 / FEDEX / ~~7707 7507 3097~~ 7708 6634 9949

[redacted] 12/28/22

Received by Laboratory: *(Signature, Date, Time)* **& condition**

[redacted] 12/29/22 11:30

Intact

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # LS122822AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS BUILT ENVIRONMENT TESTING ANALYTICS, ASHLAND, VA	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10329 Stony Run Lane, Ashland, VA 23005	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

[redacted] 12/28/22

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10 (1)	N0500 - Air TSP (1)	SW6010 - Air Pb Mn (1)	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
1	PM113022-07	A	12/21/2022	0940	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	TSP113022-08	A	12/21/2022	0940			X		MSC01	N1	0.00	0.00	1	
3	PM113022-09	A	12/21/2022	0930		X		X	MSC02	N1	0.00	0.00	1	
4	TSP113022-10	A	12/21/2022	0930			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

[redacted] 12/21/22

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/28/22	1200	FedEx	12/28/22	1200
			[redacted]	12/29/22	11:30

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/28/2022 / FEDEX / ~~7707 7507 3097~~ 7708 6634 9949

[redacted] 12/28/22

Received by Laboratory: *(Signature, Date, Time)* **& condition**

[redacted] 12/29/22 11:30 Intact

CHAIN-OF-CUSTODY RECORD

Gilbane Federal
[redacted]
2300 Clayton Road, Suite 1050, Concord, CA 94520
[redacted]

COC # LS122822AIRC

Gilbane

Project Name: Hunters Point Shipyard, Parcel C Removal Site Evaluation	Laboratory: EUROFINS BUILT ENVIRONMENT TESTING ANALYTICS, ASHLAND, VA	Event: **Parcel C Air Monitoring**
Project Number: J310000600	POC: [redacted]	
WBS Code: J310000600	Ship to: 10329 Stony Run Lane, Ashland, VA 23005	

Comments:

Equipment:

Code	Matrix
A	Air

Code	Container/Preservative
1	1x 250-mL Plastic, 4 Degrees C
1	1x Envelope, None

[redacted] 12/28/22

Event: Parcel C Air Monitoring

	Sample ID	Matrix	Date	Time	Samp Init.	Analytical Test Method: CAAIR - Air PM10	N0500 - Air TSP	SW6010 - Air Pb Mn	Location ID	Sample Type	Depth (ft bgs) Top	Depth (ft bgs) Bottom	Cooler	Comments
						1	1	1						
1	PM113022-11	A	12/22/2022	0753	[redacted]	X		X	MSC01	N1	0.00	0.00	1	
2	TSP113022-12	A	12/22/2022	0753			X		MSC01	N1	0.00	0.00	1	
3	PM113022-13	A	12/22/2022	0746		X		X	MSC02	N1	0.00	0.00	1	
4	TSP113022-14	A	12/22/2022	0746			X		MSC02	N1	0.00	0.00	1	
5														
6														
7														
8														
9														
10														

[redacted] 12/28/22

Turnaround Time: 5 days

Relinquished by: *(Signature)*	Date	Time	Received by: *(Signature)*	Date	Time
[redacted]	12/28/22	1200	FedEx	12/28/22	1200
			[redacted]	12/29/22	11:30

Shipping Date / Carrier / Airbill Number

Shipping Date: 12/28/2022 / FEDEX / ~~7707 7507 3097~~ 7708 6634 9949

SR 12/28/22

Received by Laboratory: *(Signature, Date, Time)* **& condition**

[redacted] 12/29/22 11:30

Intact

CHAIN-OF-CUSTODY RECORD **COC # LS122822AIRC**

Event: **Parcel C Air Monitoring**

Sample ID	Comments
PM113022-01	NA
TSP113022-02	NA
PM113022-03	VOLUME: 1668.08 (M3)
TSP113022-04	VOLUME: 1682.18 (M3)
PM113022-05	VOLUME: 1694.70 (M3)
TSP113022-06	VOLUME: 1798.10 (M3)
PM11302-07	VOLUME: 1698.07 (M3)
TSP113022-08	VOLUME: 1720.20 (M3)
PM113022-09	VOLUME: 1704.09 (M3)
TSP113022-10	VOLUME: 1808.38 (M3)
PM113022-11	VOLUME: 1525.86 (M3)
TSP113022-12	VOLUME: 1537.10 (M3)
PM113022-13	VOLUME: 1619.58 (M3)
TSP113022-14	VOLUME: 1720.94 (M3)

Sample ID	Cubic Meter	Volume
PM113022-03	1668.08	1668080
TSP113022-04	1628.18	1628180
PM113022-05	1694.7	1694700
TSP113022-06	1798.1	1798100
PM11302-07	1698.07	1698070
TSP113022-08	1720.2	1720200
PM113022-09	1704.09	1704090
TSP113022-10	1808.38	1808380
PM113022-11	1525.86	1525860
TSP113022-12	1537.1	1537100
PM113022-13	1619.58	1619580
TSP113022-14	1720.94	1720940

Eurofins Analytics, LLC
10329 Stony Run Lane
Ashland, Va 23005
Phone: (804) 365-3000 Fax: (804) 365-3002
AIHA-LAP, LLC Accreditation ID 100531

Level 2 QA/QC Summary Report

Work Order #: A363041

Report Date: 1/5/2023

Batch ID: ICP230103A

Blank Spike Results

			Percent Recovery		
QC ID	QC Type	Parameter	LCS	LCSD	RPD
LCS ICP2	BLKSPK	Lead	86.0	86.0	0
LCS ICP2	BLKSPK	Manganese	90.0	89.0	0

Method Blank Results

QC ID	QC Type	Parameter	Result	LOD	Units
LMB ICP2	LMB	Lead	< 14.0	14.0	ug
LMB ICP2	LMB	Manganese	< 98.0	98.0	ug