



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

Air Monitoring Summary Report

April 1 to April 30, 2022

Phase IV Non-Time Critical Removal Action, Solid Waste Disposal Area
Westside, Installation Restoration Site 12

Former Naval Station Treasure Island

San Francisco, CA

June 2022



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San Francisco, CA

June 2022

DCN: GLBN-0005-F5271-0023

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Naval Facilities Engineering Systems Command Southwest
BRAC PMO West
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Acronyms and Abbreviations

AMP	Air Monitoring Plan
BAAQMD	Bay Area Air Quality Management District
BAP(Eq)	benzo(a)pyrene equivalency
cfm	cubic feet per minute
CFR	Code of Federal Regulations
DAC	derived air concentration
DCP	Dust Control Plan
DTSC	Department of Toxic Substances Control
Gilbane	Gilbane Federal
HERO	Human and Ecological Risk Office
IR	Installation Restoration
mg/m ³	milligram per cubic meter
Navy	U.S. Department of the Navy
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PDR	personal data-logging real-time aerosol monitor
PM10	particulate matter less than 10 microns in diameter
PUF	polyurethane foam
Ra-226	radium-226
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TLV	threshold limit value
TSP	total suspended particulates
µg/m ³	microgram per cubic meter
USEPA	United States Environmental Protection Agency
Work Plan	<i>Final Work Plan, Phase IV Non-Time Critical Removal Action, Solid Waste Disposal Area Westside, Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California</i>

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1.0 Introduction

This Air Monitoring Report was prepared by Gilbane Federal (Gilbane) as requested by the United States Department of the Navy (Navy) under the Radiological Multiple Award Contract (RADMAC II) N62473-12-D-D005, Contract Task Order N6247317F5271.

Gilbane is performing dust and air monitoring at Former Naval Station Treasure Island in accordance with the Final Dust Control Plan (DCP) and Air Monitoring Plan (AMP), included as appendices to *Phase IV Non-Time Critical Removal Action Work Plan, Solid Waste Disposal Area Westside, Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California* (Work Plan; Gilbane, 2021).

The DCP describes best management practices and procedures to be implemented to minimize dust generation during work activities. Dust monitoring is conducted to ensure that these procedures are effective. Dust monitoring is also conducted to verify that the working environment meets occupational health and safety standards and that workers are safe. The AMP outlines the requirements for prevention of exposure for construction workers to dust and potential airborne chemicals of concern from the work area. The AMP also establishes the conservative project action levels for dust at the work area boundary to protect residents.

This summary report describes the following:

- Dust and air monitoring sampling locations – **Section 2.0**,
- Dust and air monitoring sample collection and analytical methods – **Section 3.0**,
- Dust and air monitoring data – **Section 4.0**, and,
- Dust and air monitoring results – **Section 5.0**.

This summary report presents the dust and air monitoring test results at Installation Restoration (IR) Site 12 from April 1st through April 30th, 2022 and compares the results with the established action levels included in the Work Plan (Gilbane, 2021). During this reporting period, the Site 12 air monitoring stations (AMSW1 and AMSW2) operated on April 1st, 4th, 5th, 6th, 7th, 12th, 13th, 14th, 15th, 18th, 19th, 21st, 25th, 26th, 27th, 28th, and 29th for earth-moving tasks involving potentially contaminated soil.

During the reporting period, personal data-logging real-time aerosol monitoring (PDR) dust data was collected. Air samples were collected and analyzed for lead, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), dioxin [2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)], total suspended particulates (TSP), and particulate matter less than 10 microns in diameter (PM10). In addition, air samples were analyzed for radiological gross alpha and beta levels.

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2.0 Monitoring Site Locations

2.1 Dust Monitoring

During earthmoving activities, several PDR stations are set up to monitor real-time airborne dust concentrations. The purpose of the PDR stations is to act as a first line of defense in protecting workers' health, and ultimately the public's health, during field activities. PDR stations are situated immediately adjacent to the current work area locations most likely to generate the greatest volume of airborne dust and are adjusted as necessary due to changes in wind direction and/or work location. Real-time dust monitoring ensures dust levels remain below action levels during fieldwork operations.

The general locations for dust monitors in IR Site 12 are shown on **Figure 1**. Specific locations of each PDR are described in the individual PDR daily data files. Field forms from each location are presented in **Attachment 1** of this report. During earth moving activities at IR Site 12 (i.e., transportation of excavated soil to the radiological screening yard, excavation, and backfilling), one PDR serves as the upwind (background) location and two PDRs are placed in downwind perimeter locations to represent dust generation from onsite activities. The dust monitors are moved to encompass field work whenever the contractor changes operations and are then given a new naming convention. During the April reporting period two different sets of monitoring locations were used (DMW25, DMW26, DMW27) and (DMW28, DMW29, DMW30). Specifically, the upwind PDR stations were DMW25 and DMW28 and the downwind monitors DMW26, DMW27, DMW29, and DMW30. The wind direction for this reporting period was predominately northern compared to previous periods and the dust monitoring locations were adjusted accordingly for this shift.

2.2 Air Monitoring

Air monitoring samples collected using high volume samplers are collected to identify and quantify airborne contaminants and to confirm the results recorded during dust (PDR) monitoring. Air monitoring stations are mobilized to collect air monitoring samples upwind and downwind of work areas. General locations of the IR Site 12 air monitoring stations are shown on **Figure 1**. The locations of the air monitoring stations are determined based on the prevailing wind direction (typically from the southwest) and are modified as needed.

Weather forecasts including wind direction are checked daily with a weather station located at Building 572. The weather station records temperature, pressure, wind speed and direction, etc., every 30 minutes, 24 hours per day. Wind speed is also monitored near the work site during soil excavation and handling to ensure that work is stopped if sustained winds over 25 miles per hour are encountered. No work stoppages due to sustained wind speed exceedances were required during this reporting period. Wind speed and direction data gathered during work hours for this reporting period, presented on a wind rose diagram in **Figure 2**, generally depict the

wind blowing from the South direction at 5-12 miles/hour with gusts up to 15 miles/hour. Detailed weather data is not reported in this document but can be provided upon request.

High volume air monitoring stations remain stationary while sampling is being conducted; however, locations may be adjusted when the wind direction changes and when overall excavation work areas change from one site to another. Each upwind and downwind high-volume monitoring station includes separate monitoring systems for the following:

- TSP - collected daily
- PM10 - collected daily
- Lead - collected daily
- PAHs, PCBs, and dioxin - collected on alternating days

2.3 Radiological Air Monitoring

Radiological air samplers are positioned adjacent to excavation work activities for radiologically impacted soil at one upwind and one downwind location during earthmoving activities associated with radiologically impacted soil. The radiological air samplers may be co-located with PDRs or the high-volume samplers.

3.0 Sampling and Analytical Methods

Dust and air samples are collected during earthmoving activities. However, during precipitation events, the dust and air monitoring units may not be operable. An attempt will be made to collect samples and readings regardless of the weather. If dust or air monitors are found to be malfunctioning or nonfunctional, earthmoving activities will stop until monitors can be repaired or replaced. The Site Health and Safety Officer is responsible for monitoring the air and dust monitoring sampling equipment. In rare cases, due to ancillary equipment malfunction such as generator failure during the night, a sample may be collected that represents a period of less than 24 hours. If this situation occurs, a note is added to the sample result data tables indicating why the full sampling period was not achieved. All AMS samplers run approximately 24 hours before the sample is collected however per FCR04 the final set of samples for the week will be collected on the last workday of the week once intrusive activities have finished for the day. These samples will have a runtime of 7-10 hours to cover the full work shift which meets the minimum 4-hour runtime required for lab analysis. Two sets of samples will be sent to the lab for examination on that final workday of the week. The results will be adjusted for the reduced runtime and fully comparable against project screening criteria.

3.1 Dust Samples

The PDR is a high sensitivity photometric monitor with a light-scattering sensing configuration that has been optimized for the measurement of the respirable fraction of airborne dust, smoke, fumes, and mists. PDRs are used to evaluate real-time monitoring of airborne dust concentrations, to determine if there is a need for additional dust control or personal protection.

3.2 Air Samples

Air samples were sampled in accordance with the United States Environmental Protection Agency (USEPA) reference sampling method for PM₁₀, described in 40 Code of Federal Regulations (CFR) 50, Subpart J. Each sample was collected on a filter over an approximately 24-hour period; the filter was then weighed to determine the amount of PM₁₀ collected.

TSP samples were collected with a high-volume (39 to 60 cubic feet per minute [cfm]) air sampler in accordance with USEPA's reference sampling method for TSP, described in Title 40 CFR, Part 50, Subpart B. Each sample was collected on a filter over an approximately 24-hour period; the filter was then weighed to determine the amount of TSP collected. Once the filter weight was determined, the sample was analyzed for lead in accordance with USEPA Method 6020 using inductively coupled mass spectrometry.

Air samples for PCBs, PAHs, and dioxin are collected and analyzed in accordance

with USEPA Methods TO-4A, TO-13, TO-9A, respectively, using TISCH polyurethane (PUF) samplers. The filter media collected from the air samplers is submitted to the analytical laboratory for appropriate analysis.

PCB, PAH, and dioxin samples are collected on alternating days at the downwind and upwind stations during earthmoving activities.

3.3 Radiological Air Samples

Radiological air monitoring is also conducted upwind and downwind on days of earthmoving activities. Radiological samples are collected with a LV-1 low volume air sampler. Air filters are counted on site 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, 2016).

The radiological air sample is counted on a Low Background Protean WPC-9950 and analyzed for gross alpha and beta activity. The calculated airborne concentration in microcuries is then compared to the effluent concentration (often but incorrectly refer to as a derived air concentration [DAC] which applies only to occupational exposures) limit specified in Table 2 of Appendix B to 10 CFR 20. The effluent concentration is the concentration of a given radionuclide 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 air monitoring 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.

4.0 Dust Monitoring Results

If dust (PDR) monitoring equipment alarms, the source of exceedance will be determined by evaluating both upwind and downwind dust (PDR) sample locations. If the difference between upwind and downwind concentrations is greater than the action level for a sustained period of 15 minutes, then earthmoving activities will be halted until dust control measures are implemented. These may include, but are not limited to, adding water to the work area during earth moving tasks, evaluation of alternate work procedures or equipment, and/or cessation of the activity that is creating the dust until the PDR readings are below the screening criteria.

Dust monitoring action levels that are implemented on a real-time basis are listed in **Table 1**. PDR data are collected and reviewed each day by the Site Health and Safety Manager. PDR data are included in **Attachment 1**.

Dust monitoring results from April 2022 did not exceed project-specific screening criteria.

Table 1: Dust Monitoring Project Action Levels

Method	Monitoring Location	Monitoring Frequency ^a	Action Level ^b	Action
PDR	Near Workers' Breathing Zones (typically on equipment)	Periodically ^c	<2.0 mg/m ³ >2.0 mg/m ³	<2.0 mg/m ³ continue work in Level D. Increase dust control (i.e., apply water or other suppression method) and/or upgrade to Level C if concentrations >2.0 mg/m ³ .
	Job Site Perimeter	Continuously	<1.0 mg/m ³ >1.0 mg/m ³	Continue work. STOP work, apply water or other dust suppression methods until levels decrease below 1.0 mg/m ³

Notes:

Only the Health and Safety Manager is authorized to downgrade levels of personal protective equipment.

- ^a Frequency of air monitoring may be adjusted by the project Certified Industrial Hygienist after sufficient characterization of site contaminants has been completed, tasks have been modified, or site controls have proven effective.
- ^b Five readings exceeding the action level in any 15-minute period or a sustained reading exceeding the action level for five minutes will trigger a response. Action levels represent airborne particulate concentrations in excess of background particulate concentrations.
- ^c PDR will be monitored a minimum of three times a day.
- < less than
- > greater than
- mg/m³ milligrams per cubic meter
- PDR personal data-logging real-time aerosol monitor

Table 2: Air Monitoring Project Screening Criteria

Chemicals of Concern	Project Screening Criteria (Threshold Limit Value) $\mu\text{g}/\text{m}^3$	Basis
Lead	1,575	TI Site 12 Subchronic Dust Action Level
TSP	50	TI Site 12 Dust Action Level
PM10	50	BAAQMD Ambient Air Quality Standard
BAP(Eq)	55,330	TI Site 12 Chronic Dust Action Level
PCBs ^a	NA	TI Site 12 Dust Action Level
Dioxin ^a	1E+07	TI Site 12 Chronic Dust Action Level
Radiological (Ra-226)	10% of DAC ^c	Occupational and public air concentration limits for Ra-226 published in 10 Code of Federal Regulations Part 20.

Notes:

- ^a The dust action level was increased by a factor of 10 to account for the short-term duration of the project relative to the lifetime assumptions incorporated into the toxicity criteria and exposure assumption.
- ^b BAP(Eq) action level will be ~55 mg/m³ for all excavations
- ^c Public air concentration limits are commonly referred to as DAC, but are actually Effluent Concentrations from Table 2 for 10 CFR Part 20.

BAAQMD	Bay Area Air Quality Management District
BAP(Eq)	benzo(a)pyrene equivalency
DAC	derived air concentration
mg/m ³	milligrams per cubic meter
PCBs	polychlorinated biphenyls
PM10	particulate matter smaller than 10 microns in diameter
Ra-226	radium-226
TSP	total suspended particulates
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter

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5.0 Air Monitoring Results

The Human and Ecological Risk Office (HERO) at the request of the California Department of Toxic Substances Control (DTSC) developed dust action levels for community air monitoring for IR Site 12. Sub-chronic and chronic dust action levels as PM10 were calculated for lead, dioxin, benzo(a)pyrene (BAP) equivalency (Eq) by PAHs analysis, and PCBs. As presented in the document *Dust Action Levels for Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California* (HERO, 2018), the action levels were calculated using the maximum chemicals of concern soil concentrations at IR Site 12.

Based on HERO's recommendations, a PM10 dust action level of 50 microgram per cubic meter ($\mu\text{g}/\text{m}^3$) will be implemented for all excavation areas at IR Site 12. TSP is expected to be further controlled based on the limit employed for PM10, in accordance with guidance provided by the San Francisco Bay Area Air Quality Management District (BAAQMD), which estimates that PM10 makes up approximately 55 percent of TSP. If it is apparent that project activities are the cause of exceedances, additional control measures will be considered and implemented.

Analytical results from air monitoring samples are compared with the project screening criteria (threshold limit values [TLV]) listed in **Table 2**. Air monitoring results are included in **Attachment 2**. Weather information (including ambient pressure and temperature data) and high-volume air monitoring sample results are presented in **Attachment 2**. Weather information was collected from the weather station at Building 572, Avenue M, Treasure Island, San Francisco, California. Radiological air monitoring results are presented in **Attachment 3**.

PM10 analytical results from April 2022 did not exceed the project-specific screening criteria presented in **Table 2-2**.

TSP analytical results from April 2022 are presented in **Table 2-3**. The following details any exceedances that occurred during the April reporting period.

- A one-day exceedance of the TSP screening criteria was observed on April 1st at $64.86 \mu\text{g}/\text{m}^3$. The associated PM10 reading ($34 \mu\text{g}/\text{m}^3$) and downwind PDR monitors ($0.003 \text{ mg}/\text{m}^3$ and $0.006 \text{ mg}/\text{m}^3$) were below project limits. The field crew was conducting earth moving operations and accepting clean import fill onsite this day. The morning fog and low hanging marine layer noted in the PDR log presented in **Attachment 1** was not considered a contributing factor to the exceedance. The appropriate parties were contacted when the contractor received the results and the field crew continues to maintain diligent dust control measures.

Metals (lead), PAHs, total PCBs, and dioxin analytical results from April 2022, did not exceed the project-specific screening criteria presented in **Table 2-4** through **Table 2-7**.

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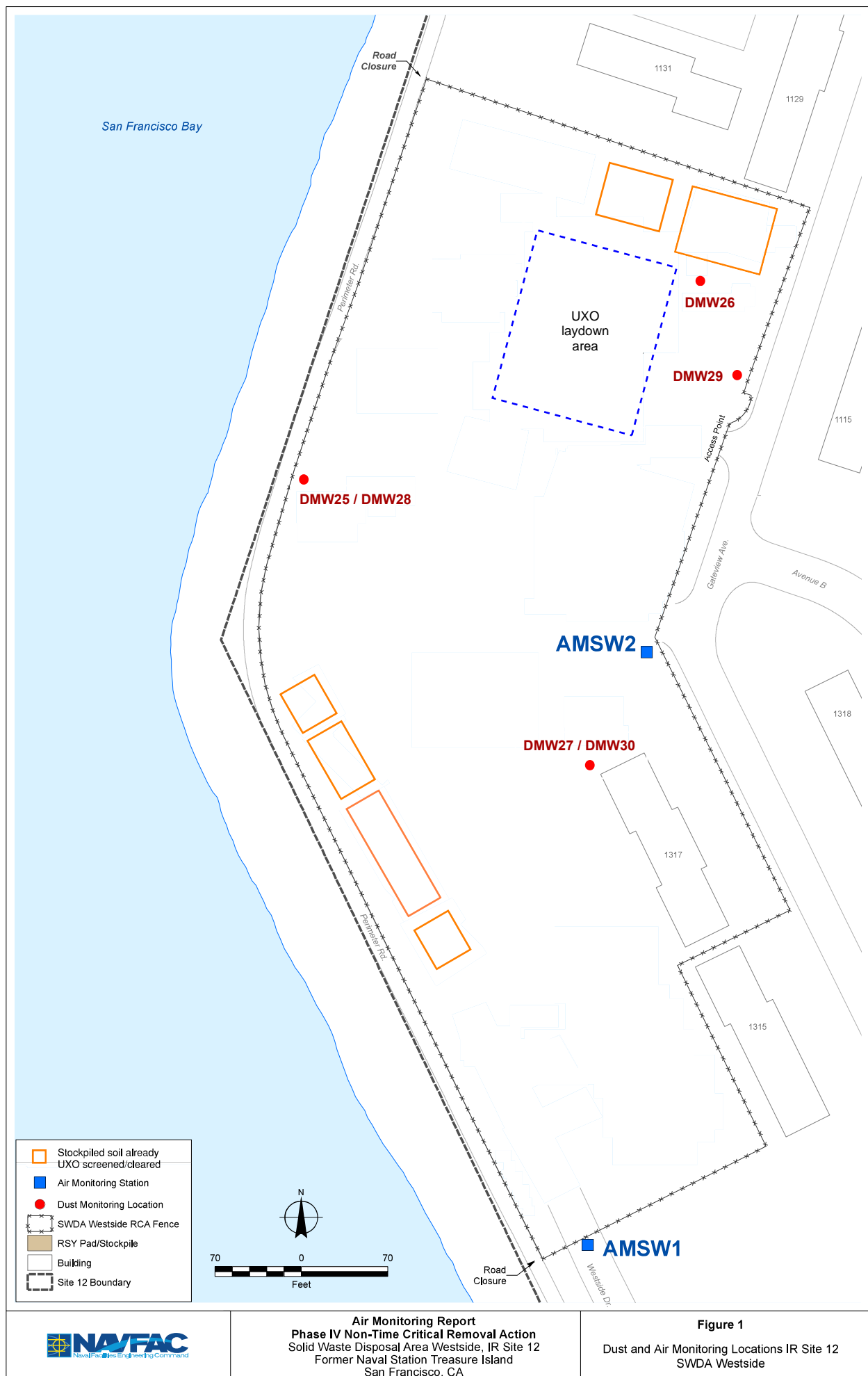
6.0 References

- Gilbane, 2016. *Radiological Procedure PR-RP-150 Radiological Survey and Sampling*. January.
- Gilbane, 2021. *Phase IV Non-Time Critical Removal Action Work Plan, Solid Waste Disposal Area Westside, Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California*. March.
- Gilbane, 2021. *Phase IV Non-Time Critical Removal Action Work Plan, Air Monitoring Plan, Solid Waste Disposal Area Westside, Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California*. March.
- Gilbane, 2021. *Phase IV Non-Time Critical Removal Action Work Plan, Dust Control Plan, Solid Waste Disposal Area Westside, Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California*. March.
- HERO, 2018. *Dust Action Levels for Installation Restoration Site 12, Former Naval Station Treasure Island, San Francisco, California*. September.

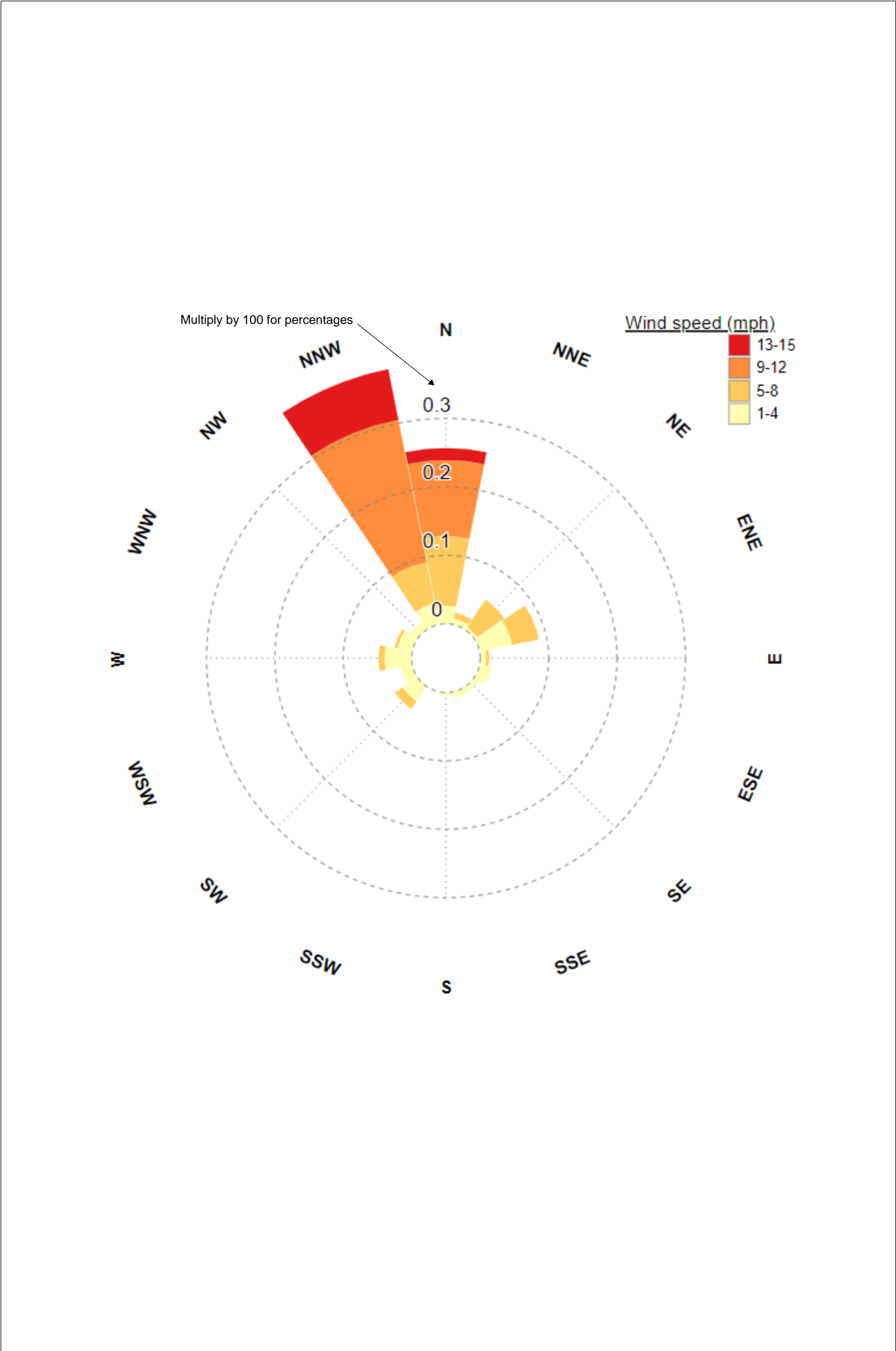
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FIGURES

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Air Monitoring Report
Phase IV Non-Time Critical Removal Action
Solid Waste Disposal Area Westside, IR Site 12
Former Naval Station Treasure Island
San Francisco, CA

Figure 2
Wind Rose
IR Site 12 SWDA Westside

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ATTACHMENT 1
PDR SUMMARY TABLE AND FIELD FORMS
(Provided on CD)

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Table 1-1: Personal Data-Logging Real-Time (PDR) Aerosol Monitoring Results

DustTrak Unit	IR Site	Date	Maximum ¹ (mg/m ³)	Average ¹ (mg/m ³)	Delta Between Upwind and Downwind Stations (mg/m ³)	Below action level? (0.050 mg/m ³) (Yes/No)
DMW25	Site 12	3/31/2022	0.039	0.023	NA	Yes
DMW26	Site 12		0.043	0.026	0.003	Yes
DMW27	Site 12		0.049	0.027	0.004	Yes
DMW25	Site 12	4/1/2022	0.048	0.030	NA	Yes
DMW26	Site 12		0.050	0.033	0.003	Yes
DMW27	Site 12		0.048	0.036	0.006	Yes
DMW25	Site 12	4/4/2022	0.029	0.018	NA	Yes
DMW26	Site 12		0.031	0.020	0.002	Yes
DMW27	Site 12		0.044	0.026	0.008	Yes
DMW25	Site 12	4/5/2022	0.037	0.016	NA	Yes
DMW26	Site 12		0.049	0.018	0.002	Yes
DMW27	Site 12		0.050	0.019	0.003	Yes
DMW28	Site 12	4/6/2022	0.031	0.017	NA	Yes
DMW29	Site 12		0.038	0.026	0.009	Yes
DMW30	Site 12		0.028	0.018	0.001	Yes
DMW28	Site 12	4/7/2022	0.028	0.016	NA	Yes
DMW29	Site 12		0.048	0.025	0.009	Yes
DMW30	Site 12		0.037	0.016	0.000	Yes
DMW28	Site 12	4/12/2022	0.018	0.010	NA	Yes
DMW29	Site 12		0.044	0.017	0.007	Yes
DMW30	Site 12		0.023	0.012	0.002	Yes
DMW28	Site 12	4/13/2022	0.011	0.007	NA	Yes
DMW29	Site 12		0.038	0.016	0.009	Yes
DMW30	Site 12		0.010	0.007	0.000	Yes
DMW28	Site 12	4/15/2022	0.010	0.006	NA	Yes
DMW29	Site 12		0.044	0.020	0.014	Yes
DMW30	Site 12		0.009	0.006	0.000	Yes
DMW28	Site 12	4/18/2022	0.010	0.008	NA	Yes
DMW29	Site 12		0.039	0.012	0.004	Yes
DMW30	Site 12		0.012	0.009	0.001	Yes
DMW28	Site 12	4/19/2022	0.012	0.005	NA	Yes
DMW29	Site 12		0.010	0.005	0.000	Yes
DMW30	Site 12		0.014	0.005	0.000	Yes
DMW28	Site 12	4/20/2022	0.015	0.010	NA	Yes
DMW29	Site 12		0.029	0.012	0.002	Yes
DMW30	Site 12		0.029	0.008	-0.002	Yes
DMW28	Site 12	4/25/2022	0.034	0.022	NA	Yes
DMW29	Site 12		0.050	0.026	0.004	Yes
DMW30	Site 12		0.031	0.025	0.003	Yes
DMW28	Site 12	4/26/2022	0.038	0.023	NA	Yes
DMW29	Site 12		0.048	0.028	0.005	Yes
DMW30	Site 12		0.043	0.029	0.006	Yes
DMW28	Site 12	4/27/2022	0.027	0.014	NA	Yes
DMW29	Site 12		0.041	0.020	0.006	Yes
DMW30	Site 12		0.025	0.017	0.003	Yes
DMW28	Site 12	4/28/2022	0.019	0.014	NA	Yes
DMW29	Site 12		0.044	0.027	0.013	Yes
DMW30	Site 12		0.025	0.018	0.004	Yes
DMW28	Site 12	4/29/2022	0.020	0.012	NA	Yes
DMW29	Site 12		0.046	0.021	0.009	Yes
DMW30	Site 12		0.022	0.016	0.004	Yes

Notes:

bold = results above screening criteria

mg/m³ = milligrams per cubic meter

NA = not applicable

¹ Maximum and average dust readings from daily PDR data downloads. Data are available upon request.



Calibration Standards Used Factory Calibrated, Zeroed in office

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date 4/1/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by Logan Schwinn

Weather 49°F - 64°F. partly cloudy. Am haze

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date 4/4/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by Logan Schwine

Weather 48°F - 58°F. Partly cloudy.

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

[illegible]

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities, Remarks
0800	DMW25	• NW exo screening + w/pt of 1	0.016	1280	• mob / setup
↓	DMW26	• DW Red screening area w/pt.	0.016	0534	
↓	DMW27	• DW ↓	0.015	2341	
1345	DMW25		0.026		• oxo finished.
↓	DMW26		0.025		
↓	DMW27		0.027		
1520	DMW25		0.026		• x.l.t. wrapping
↓	DMW26		0.025		• collect reading
↓	DMW27		0.029		
LSS 4/5/22					

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date

4/7/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by Logan Schwartz

Weather 54°F - 80°F. Sunny.

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date _____

4/12/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by Logan Schwing

Weather 42°F-53°F. Cloudy.

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities, Remarks
0800	DMW26	DDW area / Had screening	0.016	1280	Site setup
	DMW29	'DW' area work.	0.019	2341	
	DMW30	'DW'	0.014	0534	Mob
1355	DMW28		0.009		Team working collected.
	DMW29		0.010		
	DMW30		0.010		
1525	DMW28		0.009		Op finished
	DMW29		0.016		
	DMW30		0.009		

4/12/22

AIR MONITORING LOG

Client Name NAVFAC

Date _____

4/13/27

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by

Logan Schwiigg

Weather

42°F - 55°F. mostly cloudy.

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date _____

4/15/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by Loren Schwinger

Weather 42°F-55°F! Sunny. PM Wind
Instrument Type: Dust Trail II

Instrument Type: Dust Trak II

Calibration Standards Used	Factory Calibrated
1000 mg	1000 mg
500 mg	500 mg
250 mg	250 mg
125 mg	125 mg
62.5 mg	62.5 mg
31.25 mg	31.25 mg
15.625 mg	15.625 mg
7.8125 mg	7.8125 mg
3.90625 mg	3.90625 mg
1.953125 mg	1.953125 mg
0.9765625 mg	0.9765625 mg
0.48828125 mg	0.48828125 mg
0.244140625 mg	0.244140625 mg
0.1220703125 mg	0.1220703125 mg
0.06103515625 mg	0.06103515625 mg
0.030517578125 mg	0.030517578125 mg
0.0152587890625 mg	0.0152587890625 mg
0.00762939453125 mg	0.00762939453125 mg
0.003814697265625 mg	0.003814697265625 mg
0.0019073486328125 mg	0.0019073486328125 mg
0.00095367431640625 mg	0.00095367431640625 mg
0.000476837158203125 mg	0.000476837158203125 mg
0.0002384185791015625 mg	0.0002384185791015625 mg
0.00011920928955078125 mg	0.00011920928955078125 mg
0.000059604644775390625 mg	0.000059604644775390625 mg
0.0000298023223876953125 mg	0.0000298023223876953125 mg
0.00001490116119384765625 mg	0.00001490116119384765625 mg
0.000007450580596923828125 mg	0.000007450580596923828125 mg
0.0000037252902984619140625 mg	0.0000037252902984619140625 mg
0.00000186264514923095703125 mg	0.00000186264514923095703125 mg
0.000000931322574615478515625 mg	0.000000931322574615478515625 mg
0.0000004656612873077392578125 mg	0.0000004656612873077392578125 mg
0.00000023283064365386962890625 mg	0.00000023283064365386962890625 mg
0.000000116415321826934814453125 mg	0.000000116415321826934814453125 mg
0.000000582076609134674072265625 mg	0.000000582076609134674072265625 mg
0.0000002910383045673370361328125 mg	0.0000002910383045673370361328125 mg
0.00000014551915228366851806640625 mg	0.00000014551915228366851806640625 mg
0.000000072759576141834259033203125 mg	0.000000072759576141834259033203125 mg
0.0000000363797880709171295166015625 mg	0.0000000363797880709171295166015625 mg
0.00000001818989403545856475830078125 mg	0.00000001818989403545856475830078125 mg
0.000000009094947017729282379150390625 mg	0.000000009094947017729282379150390625 mg
0.0000000045474735088646411895751953125 mg	0.0000000045474735088646411895751953125 mg
0.00000000227373675443232059478759765625 mg	0.00000000227373675443232059478759765625 mg
0.000000001136868377216160297393798828125 mg	0.000000001136868377216160297393798828125 mg
0.0000000005684341886080801486968994140625 mg	0.0000000005684341886080801486968994140625 mg
0.00000000028421709430404007434844970703125 mg	0.00000000028421709430404007434844970703125 mg
0.000000000142108547152020037174224853515625 mg	0.000000000142108547152020037174224853515625 mg
0.0000000000710542735760100185871124267578125 mg	0.0000000000710542735760100185871124267578125 mg
0.00000000003552713678800500929355621337890625 mg	0.00000000003552713678800500929355621337890625 mg
0.000000000017763568394002504646778106689453125 mg	0.000000000017763568394002504646778106689453125 mg
0.0000000000088817841970012523233890533447265625 mg	0.0000000000088817841970012523233890533447265625 mg
0.00000000000444089209850062616169452667236328125 mg	0.00000000000444089209850062616169452667236328125 mg
0.000000000002220446049250313080847263336181640625 mg	0.000000000002220446049250313080847263336181640625 mg
0.0000000000011102230246251565404236316680908203125 mg	0.0000000000011102230246251565404236316680908203125 mg
0.00000000000055511151231257827221181583340541015625 mg	0.00000000000055511151231257827221181583340541015625 mg
0.0000000000002775557561562891361059079167027050	

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date 4/18/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Date 11/10/22
 Logged by: 12 Page 1 of 1

Logged by TR

Weather Sunny 49-62°F

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated, Zeroed in office

[illegible]

AIR MONITORING LOG

Client Name NAVFAC

Date _____

4/19/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island

Page

of

Logged by

TGR

Weather

cloudy

51-100 of

Sunny afternoon

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

Zeroed in office

[illegible]



Client Name NAVFAC

Date _____

4/20/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by TR

Weather Sunny 50-62 °F

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated zeroed in office

[illegible]

- K.L.I.K. finishing for today.
- Collect readings / test readings
- Collect monitors / folks off site for day.

AIR MONITORING LOG

Client Name NAVFAC

Date 4/26/22

Project No. J310000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by Leyan Schirmer

Weather 48°F-58°F. cloudy PM sun. Haze in AM

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities, Remarks
0800	DMW28	DW Imp + f.w! reading ok	0.037	1280	• readings same as work h
	DMW29	DW	0.040	2341	• now
	DMW30	DW	0.037	0534	• Heat, increasing dust reacting levels
1340	DMW28		0.021		• mid-day reading
	DMW29		0.018		
	DMW30		0.024		
1530	DMW28		0.019		• op finished for
	DMW29		0.020		
	DMW30		0.026		
LH 4/26/22					

[illegible]

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities, Remarks
0740	DMW28	•DW Tkd / import filter	0.018	1280	•setup / mobilize
↓	DMW29	•DW ↓	0.019	2341	
↓	DMW30	•DW ↓	0.020	0534	
1225	DMW28		0.013		•mid-day reading
↓	DMW29		0.024		
↓	DMW30		0.013		
1520	DMW28		0.019		•op wrapping
↓	DMW29		0.020		
↓	DMW30		0.017		
LSS 4/28/22					

[illegible]

ATTACHMENT 2
SUMMARY OF AIR MONITORING AND
AIR SAMPLING RESULTS
(Provided on CD)

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Table 2-1: Ambient Pressure and Temperature Monitoring Results

Sample Date	Ambient Pressure (inches of Hg)	Ambient Temperature (°F)	Ambient Temperature (°K)
04/01/2022	29.93	53.12	284.88
04/01/2022	29.96	56.55	286.79
04/05/2022	30.17	54.91	285.88
04/06/2022	30.14	55.57	286.24
04/07/2022	30.09	61.15	289.34
04/07/2022	30.10	71.38	295.03
04/13/2022	30.24	50.06	283.18
04/14/2022	30.18	52.74	284.67
04/15/2022	30.05	51.64	284.06
04/19/2022	30.05	55.15	286.01
04/21/2022	29.94	57.31	287.21
04/26/2022	30.04	55.42	286.16
04/27/2022	29.99	54.02	285.38
04/28/2022	30.02	53.13	284.89
04/29/2022	30.12	53.13	284.89
04/29/2022	30.16	53.76	285.24

Notes:

Weather data collected from weather station at Building 572, Avenue M, Treasure Island, San Francisco, CA

°F = Degrees Fahrenheit

Hg = mercury

°K = Degrees Kelvin

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

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Table 2-2: Particulate Matter Smaller than Ten Microns (PM10)

Location ID	Sampling Period (Hours)	Sample Date	Particulate Matter Less Than 10 Microns in Diameter (ug/m ³)	Delta between Downwind and Upwind Stations (ug/m ³)	PM10 Exceedance? (Yes/No)
Screening Criteria					50
AMSW1	20.8	04/01/2022	35	NA	NA
	7.82	04/01/2022	40	NA	NA
	23.16	04/05/2022	25	NA	NA
	21.82	04/06/2022	62	NA	NA
	21.54	04/07/2022	41	NA	NA
	7.4	04/07/2022	28	NA	NA
	23.79	04/13/2022	15	NA	NA
	20.36	04/14/2022	12	NA	NA
	6.96	04/15/2022	9.9	NA	NA
	23.6	04/19/2022	9	NA	NA
	25.34	04/21/2022	14	NA	NA
	24.65	04/26/2022	28	NA	NA
	21.5	04/27/2022	23	NA	NA
	23.8	04/28/2022	20	NA	NA
	22.88	04/29/2022	19	NA	NA
	6.7	04/29/2022	20	NA	NA
AMSW2	20.65	04/01/2022	49	14	No
	8.09	04/01/2022	74	34	No
	23.78	04/05/2022	43	18	No
	21.89	04/06/2022	54	-8	No
	21.98	04/07/2022	38	-3	No
	7.44	04/07/2022	58	30	No
	23.62	04/13/2022	20	5	No
	20.72	04/14/2022	13	1	No
	6.8	04/15/2022	6.7	-3.2	No
	24.05	04/19/2022	17	8	No
	25.69	04/21/2022	23	9	No
	25.3	04/26/2022	31	3	No
	21.9	04/27/2022	34	11	No
	24.26	04/28/2022	43	23	No
	23.16	04/29/2022	42	23	No
	6.58	04/29/2022	32	12	No

Notes:

ug/m³ = micrograms per cubic meter

NA = Not applicable

PM10 = particulate matter less than 10 microns in diameter

* = generator/sampler malfunction

bold = result above screening criteria

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

Table 2-3: Total Suspended Particulates Monitoring Results

Location ID	Sampling Period (Hours)	Sample Date	Total Suspended Particulate (ug/m ³)	Delta Between Downwind and Upwind Stations (ug/m ³)	TSP Exceedance? (Yes/No)
Screening Criteria					50
AMSW1	20.8	04/01/2022	47.5194	NA	NA
	7.82	04/01/2022	54.7718	NA	NA
	23.17	04/05/2022	70.5599	NA	NA
	21.8	04/06/2022	170.814	NA	NA
	21.53	04/07/2022	106.7307	NA	NA
	7.38	04/07/2022	52.6034	NA	NA
	23.79	04/13/2022	23.2592	NA	NA
	20.32	04/14/2022	22.3327	NA	NA
	6.97	04/15/2022	15.5242	NA	NA
	23.62	04/19/2022	19.593	NA	NA
	25.36	04/21/2022	18.1198	NA	NA
	24.64	04/26/2022	33.5958	NA	NA
	21.48	04/27/2022	36.5363	NA	NA
	23.78	04/28/2022	33.2994	NA	NA
	22.87	04/29/2022	33.2614	NA	NA
	6.69	04/29/2022	36.6255	NA	NA
AMSW2	20.66	04/01/2022	72.5768	25.0574	No
	8.11	04/01/2022	119.6351	64.8633	Yes
	23.79	04/05/2022	77.0424	6.4825	No
	21.9	04/06/2022	79.7008	-91.1132	No
	22.02	04/07/2022	54.755	-51.9757	No
	7.49	04/07/2022	81.323	28.7196	No
	23.61	04/13/2022	35.2013	11.9421	No
	20.73	04/14/2022	22.7502	0.4175	No
	6.79	04/15/2022	14.5385	-0.9857	No
	24.03	04/19/2022	33.055	13.462	No
	25.68	04/21/2022	42.3792	24.2594	No
	25.28	04/26/2022	35.9143	2.3185	No
	21.9	04/27/2022	49.8569	13.3206	No
	24.26	04/28/2022	63.631	30.3316	No
	23.15	04/29/2022	67.6512	34.3898	No
	6.58	04/29/2022	66.2656	29.6401	No

Notes:

J = estimated value

ug/m³ = micrograms per cubic meter

NA = Not applicable

TSP = total suspended particulate

bold = results above screening criteria

* = generator/sampler malfunction

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

Table 2-4: Lead by EPA 6020 Monitoring Results

Location ID	Sampling Period (Hours)	Sample Date	Lead (ug/m ³)	Lead Exceedance? (Yes/No)
Screening Criteria				1,575
AMSW1	20.8	04/01/2022	0.00076 J	No
	7.82	04/01/2022	0.0024	No
	23.16	04/05/2022	0.005	No
	21.82	04/06/2022	0.013	No
	21.54	04/07/2022	0.007	No
	7.4	04/07/2022	0.0035	No
	23.79	04/13/2022	0.0013	No
	20.36	04/14/2022	0.001	No
	6.96	04/15/2022	0.0022 J	No
	23.6	04/19/2022	0.001	No
	25.34	04/21/2022	0.001	No
	24.65	04/26/2022	0.0018	No
	21.5	04/27/2022	0.0012	No
	23.8	04/28/2022	0.0011	No
	22.88	04/29/2022	0.0011	No
	6.7	04/29/2022	0.0023 J	No
AMSW2	20.65	04/01/2022	0.0037	No
	8.09	04/01/2022	0.01	No
	23.78	04/05/2022	0.0083	No
	21.89	04/06/2022	0.0051	No
	21.98	04/07/2022	0.0039	No
	7.44	04/07/2022	0.0097	No
	23.62	04/13/2022	0.0029	No
	20.72	04/14/2022	0.0013	No
	6.8	04/15/2022	0.0025 J	No
	24.05	04/19/2022	0.002	No
	25.69	04/21/2022	0.0026	No
	25.3	04/26/2022	0.0056	No
	21.9	04/27/2022	0.0017	No
	24.26	04/28/2022	0.0061	No
	23.16	04/29/2022	0.0052	No
	6.58	04/29/2022	0.0046	No

Notes:

J = indicates an estimated value

ug/m³ = micrograms per cubic meter

* = generator/sampler malfunction

bold = results above screening criteria

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

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Table 2-5: Polycyclic Aromatic Hydrocarbons by TO-13 Monitoring Results																					
Location ID	Sampling Period (Hours)	Sample Date	BAP(Eq) Exceed- ance? (Yes/No)	BAP(Eq)	2-Methyl-naph- thalene (ug/m³)	Acenaph- thene (ug/m³)	Acenaph- thylene (ug/m³)	Anthracene (ug/m³)	Benzo(a) anthracene (ug/m³)	Benzo(a) pyrene (ug/m³)	Benzo(b) fluoran- thene (ug/m³)	Benzo(g,h,i) perylene (ug/m³)	Benzo(k) fluoran- thene (ug/m³)	Chrysene (ug/m³)	Dibenz(a,h)anth racene (ug/m³)	Fluoran- thene (ug/m3)	Fluorene (ug/m3)	Indeno (1,2,3- c,d) pyrene (ug/m3)	Naph- thalene (ug/m3)	Phenan- threne (ug/m3)	Pyrene (ug/m3)
Screening Criteria ¹				55,330	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
AMSW1	20.81	04/01/2022	No	0	0.0023	0.00036 J	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.00029 J	< 0.0007	0.0064	0.00053 J	< 0.0007
	21.73	04/06/2022	No	0	0.0021	0.00056 J	< 0.00064	< 0.00064	< 0.00064	< 0.00064	< 0.00064	< 0.00064	< 0.00064	< 0.00064	< 0.00064	0.00026 J	0.0004 J	< 0.00064	0.0048	0.00073	< 0.00064
	23.73	04/13/2022	No	0	< 0.0012	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	0.0015	0.00027 J	< 0.0006
	23.63	04/19/2022	No	0	0.0013	0.00033 J	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	0.00027 J	< 0.00059	0.0084	0.00051 J	< 0.00059
	25.36	04/21/2022	No	0	0.0011	0.00027 J	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	0.00023 J	< 0.00055	0.006	0.00039 J	< 0.00055
	6.69	04/29/2022	No	0	< 0.0041	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	0.0045	< 0.0021	< 0.0021
AMSW2	20.65	04/01/2022	No	0	0.0022	0.00032 J	< 0.00062	< 0.00062	< 0.00062	< 0.00062	< 0.00062	< 0.00062	< 0.00062	< 0.00062	< 0.00062	0.00046 J	0.0004 J	< 0.00062	0.007	0.0015	0.00029 J
	21.9	04/06/2022	No	0	0.0014	0.00026 J	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	0.00033 J	0.00034 J	< 0.0006	0.0031	0.0011	< 0.0006
	23.63	04/13/2022	No	0	< 0.0011	< 0.00056	< 0.00056	< 0.00056	< 0.00056	< 0.00056	< 0.00056	< 0.00056	< 0.00056	< 0.00056	< 0.00056	0.00022 J	< 0.00056	< 0.00056	0.00077 J	0.00085	< 0.00056
	24.06	04/19/2022	No	0	0.0012	0.00026 J	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	0.00061	0.00043 J	< 0.00059	0.0075	0.002	0.00036 J
	25.69	04/21/2022	No	0	0.0011	0.00021 J	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00057	0.00039 J	< 0.0005	0.0052	0.0018	0.00032 J
	6.58	04/29/2022	No	0	< 0.0039	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	0.0045	< 0.0019	< 0.0019

Notes:

¹ The dust action level was adjusted by a factor of 10 to account for the short-term duration of the project.

NA = Not applicable

NE = None established

BAP(Eq) = Benzo(a)pyrene equivalency

J = estimated value

UJ = Nondetected at an estimated reporting limit

ug/m3 = micrograms per cubic meter

bold = results above screening criteria

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

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Table 2-6: Polychlorinated Biphenyls by TO-4A Monitoring Results

Location ID	Sampling Period (Hours)	Sample Date	Total PCB Exceedance? (Yes/No)	Total PCB	PCB-1016 (Aroclor 1016) (ug/m ³)	PCB-1221 (Aroclor 1221) (ug/m ³)	PCB-1232 (Aroclor 1232) (ug/m ³)	PCB-1242 (Aroclor 1242) (ug/m ³)	PCB-1248 (Aroclor 1248) (ug/m ³)	PCB-1254 (Aroclor 1254) (ug/m ³)	PCB-1260 (Aroclor 1260) (ug/m ³)
Screening Criteria				NE							
AMSW1	7.76	04/01/2022	NA	0	< 0.0024	< 0.0024	< 0.0024	< 0.0024	< 0.0024	< 0.0024	< 0.0024
	21.47	04/07/2022	NA	0	< 0.00087	< 0.00087	< 0.00087	< 0.00087	< 0.00087	< 0.00087	< 0.00087
	20.28	04/14/2022	NA	0	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019
	21.42	04/27/2022	NA	0	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	22.44	04/29/2022	NA	0	< 0.00085	< 0.00085	< 0.00085	< 0.00085	< 0.00085	< 0.00085	< 0.00085
AMSW2	8.03	04/01/2022	NA	0	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021
	21.95	04/07/2022	NA	0	< 0.00081	< 0.00081	< 0.00081	< 0.00081	< 0.00081	< 0.00081	< 0.00081
	20.73	04/14/2022	NA	0	< 0.0017	< 0.0017	< 0.0017	< 0.0017	< 0.0017	< 0.0017	< 0.0017
	21.91	04/27/2022	NA	0	< 0.00084	< 0.00084	< 0.00084	< 0.00084	< 0.00084	< 0.00084	< 0.00084
	23.17	04/29/2022	NA	0	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008

Notes:

NA = Not applicable

NE = None established

PCB = polychlorinated biphenyl

ug/m³ = micrograms per cubic meter

< = nondetected less than associated reporting limit

J = estimated value

* = sampler/generator malfunction

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

Table 2-7: Dioxin as 2,3,7,8-TCDD by TO-9A Monitoring Results

Location ID	Sampling Period (Hours)	Sample Date	2,3,7,8-Tetrachlorodibenzo-p-dioxin (ug/m ³)	Dioxin Exceedance? (Yes/No)
Screening Criteria				10,000,000 ug/m³
AMSW1	23.19	04/05/2022	< 0.00000002	No
	7.31	04/07/2022	< 0.00000007	No
	6.97	04/15/2022	< 0.00000008	No
	24.64	04/26/2022	< 0.00000002	No
	23.73	04/28/2022	< 0.00000002	No
AMSW2	23.78	04/05/2022	< 0.00000002	No
	7.39	04/07/2022	< 0.00000006	No
	6.82	04/15/2022	< 0.00000007	No
	25.32	04/26/2022	< 0.00000002	No
	24.27	04/28/2022	< 0.00000002	No

Notes:

J = estimated value

UJ = Nondetected at an estimated reporting limit

ug/m³ = micrograms per cubic meter

< = nondetected less than associated reporting limit

bold = results above screening criteria

* = generator / sampler malfunction

Note: Air monitoring stations shutdown on days when import of clean soil was the only site activity

ATTACHMENT 3
RADIOLOGICAL AIR MONITORING RESULTS
(Provided on CD)

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AIR SAMPLING EQUIPMENT

Project Information								Effective as of: 03 Jun 2022			
Contract / Task Order Number:		Project Title / Location:						Gilbane Project Number:			
N62473-17-D-0005		IR Site 12 RD/RA, Treasure Island, SF, CA						J310000800			
Perimeter/Effluent Air Sampling Equipment					Breathing Zone Air Sampling Equipment						
Equip Number	Air Sampler Make/Model	Serial Number	Cal Due Date	Equip Number	Air Sampler Make/Model	Serial Number	Cal Due Date				
PE01	LV-1	4532	5/20/21	BZ01							
PE02	LV-1	4360	5/20/21	BZ02							
PE03	LV-1	4352	4/20/22	BZ03							
PE04	LV-1	4300	4/20/22	BZ04							
PE05	LV-1	4299	6/9/22	BZ05							
PE06	LV-1	4313	6/9/22	BZ06							
PE07				BZ07							
PE08				BZ08							
PE09				BZ09							
PE10				BZ10							
PE11				BZ11							
PE12				BZ12							
PE13				BZ13							
PE14				BZ14							
PE15				BZ15							
PE16				BZ16							
PE17				BZ17							
PE18				BZ18							
PE19				BZ19							
PE20				BZ20							
Sample Counting Instruments											
Inst Number	Model Number	Serial Number	Cal Due Date	Count Time (min)		Background (cpm) ^a		Abs Ct Eff (cnts/dis) ^b		MDC (dpm/sample) ^c	
				Bkgrd	Source	Alpha	Beta	Alpha	Beta	Alpha	Beta
A	Protean	615068	9/15/21	1	1	0.0	1.1	0.352	0.355	15.4	29.0
B	Protean	9085100	10/5/21	1	1	0.0	1.2	0.356	0.352	15.2	29.9
C	Protean	9085100	10/1/22	1	1	0.0	1.2	0.359	0.355	15.1	29.6
D	Protean	9085101	10/1/22	1	1	0.0	1.2	0.315	0.355	17.2	29.6
E											
Notes											
^a background values obtained from instrument set-up worksheet											
^b absolute counting efficiency = 4π efficiency calculated as ratio of measured count rate and contained activity [total dpm] of source (see IN-RP-141, <i>Alpha/Beta Scaler Instrument Set-Up and Operation</i>)											
^c MDC calculated using the Stapleton approximation (see IN-RP-141, <i>Alpha/Beta Scaler Instrument Set-Up and Operation</i>)											

AIR SAMPLE RESULTS - PUBLIC EXPOSURE MONITORING

Project Information										Effluent Air Concentration										Sampling Period										Color Codes									
Contract / Task Order Number:		Project Title / Location:				Gilbane Project Number:				Alpha		Beta		Air samples collected						Value < MDC				Value < 0.1 x Effluent Conc															
N62473-17-D-0005		IR Site 12 RD/IRA, Treasure Island, SF, CA				J310000800				Radionuclide		Ra-226		Sr-90		between 22 Mar 2021						< 72 hr decay time				Value > 0.1 x Effluent Conc													
Information effective as of: 03 Jun 2022										Effluent Conc (µCi/ml)										9.E-13		6.E-12		24 May 2022						Data reviewed				Value > Effluent Conc					
Sample Collection										Count Information										Sample Results										Initials									
Sample Number	Sample Type	Sample Location	Equip No	Ave Flow Rate (lpm)	Start Day Time	End Date Time	Elapsed Time (min)	Volume (ml)	Inst No	Count Date	Time (min)	Counting Units	Gross Activity Alpha Beta	Net dpm Alpha Beta	Activity (µCi/ml) Alpha Beta	*Effluent Conc (%) Alpha Beta	Count Tech	Data Reviewer																					
AS-431	Perimeter	Upwind	PE03	60	4/1/22 5:30	4/1/22 16:45	675	4.1E+07	C	4/29/22	1	cpm	0.15 4.55	0.4 9.4	4.6E-15 1.0E-13	0.5% 1.7%	DB	CB																					
AS-432	Perimeter	Downwind	PE04	60	4/1/22 5:35	4/1/22 16:50	675	4.1E+07	C	4/29/22	1	cpm	0.25 4.80	0.7 10.1	7.7E-15 1.1E-13	0.9% 1.9%	DB	CB																					
AS-433	Perimeter	Upwind	PE03	60	4/4/22 4:45	4/4/22 17:05	740	4.4E+07	C	4/29/22	1	cpm	0.35 5.45	1.0 12.0	9.9E-15 1.2E-13	1.1% 2.0%	DB	CB																					
AS-434	Perimeter	Downwind	PE04	60	4/4/22 4:50	4/4/22 17:00	730	4.4E+07	C	4/29/22	1	cpm	0.10 4.10	0.3 8.2	2.9E-15 8.4E-14	0.3% 1.4%	DB	CB																					
AS-435	Perimeter	Upwind	PE03	60	4/5/22 5:00	4/5/22 17:05	725	4.3E+07	C	4/29/22	1	cpm	0.15 5.00	0.4 10.7	4.3E-15 1.1E-13	0.5% 1.8%	DB	CB																					
AS-436	Perimeter	Downwind	PE04	60	4/5/22 5:05	4/5/22 17:00	715	4.3E+07	C	4/29/22	1	cpm	0.40 4.65	1.1 9.7	1.2E-14 1.0E-13	1.3% 1.7%	DB	CB																					
AS-437	Perimeter	Upwind	PE03	60	4/6/22 5:00	4/6/22 17:00	720	4.3E+07	C	4/29/22	1	cpm	0.20 4.95	0.6 10.6	5.8E-15 1.1E-13	0.6% 1.8%	DB	CB																					
AS-438	Perimeter	Downwind	PE04	60	4/6/22 5:05	4/6/22 17:05	720	4.3E+07	C	4/29/22	1	cpm	0.15 4.40	0.4 9.0	4.4E-15 9.4E-14	0.5% 1.6%	DB	CB																					
AS-439	Perimeter	Upwind	PE03	60	4/7/22 5:00	4/7/22 17:05	725	4.3E+07	C	4/29/22	1	cpm	0.10 5.40	0.3 11.8	2.9E-15 1.2E-13	0.3% 2.0%	DB	CB																					
AS-440	Perimeter	Downwind	PE04	60	4/7/22 5:05	4/7/22 17:00	715	4.3E+07	C	4/29/22	1	cpm	0.25 4.35	0.7 8.9	7.3E-15 9.3E-14	0.8% 1.6%	DB	CB																					
AS-441	Perimeter	Upwind	PE03	60	4/12/22 7:15	4/12/22 17:05	590	3.5E+07	C	4/29/22	1	cpm	0.25 4.70	0.7 9.9	9.8E-15 1.3E-13	1.0% 2.1%	DB	CB																					
AS-442	Perimeter	Downwind	PE04	60	4/12/22 7:15	4/12/22 17:00	595	3.6E+07	C	4/29/22	1	cpm	0.20 3.80	0.6 7.3	7.0E-15 9.2E-14	0.8% 1.5%	DB	CB																					
AS-443	Perimeter	Upwind	PE03	60	4/13/22 5:00	4/13/22 17:05	725	4.3E+07	C	4/29/22	1	cpm	0.25 4.60	0.7 9.6	7.2E-15 9.9E-14	0.8% 1.7%	DB	CB																					
AS-444	Perimeter	Downwind	PE04	60	4/13/22 5:05	4/13/22 17:00	715	4.3E+07	C	4/29/22	1	cpm	0.35 3.95	1.0 7.7	1.0E-14 8.1E-14	1.1% 1.4%	DB	CB																					
AS-445	Perimeter	Upwind	PE03	60	4/18/22 5:00	4/18/22 17:05	725	4.3E+07	C	4/29/22	1	cpm	0.30 4.20	0.8 8.5	8.7E-15 8.8E-14	1.0% 1.5%	DB	CB																					
AS-446	Perimeter	Downwind	PE04	60	4/18/22 5:05	4/18/22 17:00	715	4.3E+07	C	4/29/22	1	cpm	0.10 5.20	0.3 11.3	2.9E-15 1.2E-13	0.3% 2.0%	DB	CB																					
AS-447	Perimeter	Upwind	PE03	60	4/20/22 7:00	4/20/22 15:28	508	3.0E+07	C	4/29/22	1	cpm	0.25 5.40	0.7 11.8	1.0E-14 1.7E-13	1.1% 2.9%	DB	CB																					
AS-448	Perimeter	Downwind	PE04	60	4/20/22 7:05	4/20/22 15:32	507	3.0E+07	C	4/29/22	1	cpm	0.20 3.10	0.6 5.4	8.2E-15 7.9E-14	0.9% 1.3%	DB	CB																					
AS-449	Perimeter	Upwind	PE03	60	4/25/22 7:00	4/25/22 13:35	395	2.4E+07	D	6/2/22	1	cpm	0.40 4.40	1.3 9.0	2.4E-14 1.7E-13	2.7% 2.9%	DB	CB																					
AS-450	Perimeter	Downwind	PE04	60	4/25/22 7:05	4/25/22 13:00	355	2.1E+07	D	6/2/22	1	cpm	0.45 3.95	1.4 7.7	3.0E-14 1.6E-13	3.4% 2.7%	DB	CB																					
AS-451	Perimeter	Upwind	PE03	60	4/26/22 7:00	4/26/22 13:35	395	2.4E+07	D	6/2/22	1	cpm	0.35 3.95	1.1 7.7	2.1E-14 1.5E-13	2.3% 2.5%	DB	CB																					
AS-452	Perimeter	Downwind	PE04	60	4/26/22 7:05	4/26/22 13:30	385	2.3E+07	D	6/2/22	1	cpm	0.35 4.50	1.1 9.3	2.2E-14 1.8E-13	2.4% 3.0%	DB	CB																					
AS-453	Perimeter	Upwind	PE03	60	4/27/22 5:25	4/27/22 15:00	575	3.4E+07	D	6/2/22	1	cpm	0.30 2.80	1.0 4.5	1.2E-14 5.9E-14	1.4% 1.0%	DB	CB																					
AS-454	Perimeter	Downwind	PE04	60	4/27/22 5:20	4/27/22 14:55	575	3.5E+07	D	6/2/22	1	cpm	0.25 4.40	0.8 9.0	1.0E-14 1.2E-13	1.2% 2.0%	DB	CB																					
AS-455	Perimeter	Upwind	PE03	60	4/28/22 5:20	4/28/22 15:17	597	3.6E+07	D	6/2/22	1	cpm	0.50 3.50	1.6 6.5	2.0E-14 8.1E-14	2.2% 1.4%	DB	CB																					
AS-456	Perimeter	Downwind	PE04	60	4/28/22 5:15	4/28/22 15:20	605	3.6E+07	D	6/2/22	1	cpm	0.20 4.15	0.6 8.3	7.9E-15 1.0E-13	0.9% 1.7%	DB	CB																					
AS-457	Perimeter	Upwind	PE03	60	4/29/22 5:15	4/29/22 15:00	585	3.5E+07	D	6/2/22	1	cpm	0.10 5.25	0.3 11.4	4.1E-15 1.5E-13	0.5% 2.4%	DB	CB																					
AS-458	Perimeter	Downwind	PE04	60	4/29/22 5:20	4/29/22 14:50	570	3.4E+07	D	6/2/22	1	cpm	0.15 2.60	0.5 3.9	6.3E-15 5.2E-14	0.7% 0.9%	DB	CB																					

CFM to LPM Converter		
1 cfm = 28.316846592 lpm		
Enter cfm:	2.1	
lpm:	60.0	

Sample Types
Perimeter
Effluent

Counting Units
cris
cpm

10 CFR 20 Appendix B Table 2 Effluent Concentrations (listed in order of most to least restrictive radionuclide)

Column 1		
Alpha-Emitting Radionuclide	Retention Class	Air (µCi/ml)
Th-232	W	4.E-15
Pu-239/240	W	2.E-14
Am-241	W	2.E-14
U-233/234	Y	5.E-14
U-235	Y	6.E-14
U-238	Y	6.E-14
Ra-226	W	9.E-13
(TBD)	(TBD)	(TBD)

Color Legend	
No exceedance above regulatory criteria	
Elevated however no exceedance above regulatory criteria	
Exceedance above regulatory criteria	

* Effluent concentration is a regulatory number from the NRC considered protective of the public

Column 1		
Beta-Emitting Radionuclide	Retention Class	Air (µCi/ml)
Sr-90	Y	6.E-12
Eu-152	W	3.E-11
Eu-154	W	3.E-11
Co-60	Y	5.E-11
Cs-137	D	2.E-10
(TBD)	(TBD)	(TBD)