



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

Air Monitoring Summary Report

May 1 to May 31, 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

July 2022



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San Francisco, CA

July 2022

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Prepared for:

**Department of the Navy
Naval Facilities Engineering Systems Command Southwest
BRAC PMO West
33000 Nixie Way, Bldg. 50
San Diego, CA 92147**

Prepared by:



**Gilbane Federal
1655 Grant Street, Suite 1200
Concord, California 94520
Contract Number: N62473-17-D-0005; Task Order No. N62473-18-F5271**

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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 May 1st through May 31st, 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 May 2nd, 3rd, 4th, 5th, 10th, 11th, 12th, 13th, 16th, 17th, 19th, 20th, 24th and 25th 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 May reporting period two different sets of monitoring locations were used (DMW28, DMW29, DMW30) and (DMW31, DMW32, DMW33). Specifically, the upwind PDR stations were DMW28 and DMW31 and the downwind monitors DMW29, DMW30, DMW31, and DMW32. 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 16 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**.

- On May 20th the downwind PDR DMW32 recorded a reading above project screening criteria. The delta between the upwind and downwind monitors remained below action levels. The field crew continues to maintain diligent dust control measures.
- On May 24th PDR readings were observed above project screening criteria, however the field team documented foggy, hazy, and thick low hanging marine layer conditions presented in **Attachment 1**. In conclusion, field work continued as field activities were not generating visible dust and onsite atmospheric conditions generated elevated PDR data. The delta between downwind and upwind monitors remained below action levels.
- On May 25th the downwind PDR DMW32 recorded a reading above project screening criteria however the field team noted on the dust log presented in **Attachment 1** that the wind was kicking up dust from the clean import soil previously laid in the area. No soil movement occurred this day and the team was simply removing fencing on the opposite side of the site along the western most fence line. The delta between downwind and upwind monitors remained below action levels. Contractor continues to maintain diligent dust control measures including frequent surface soil spraying using the water truck onsite.

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/m^3 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 May 2022 did not exceed the project-specific screening criteria presented in **Table 2-2**.

TSP analytical results from May 2022 did not exceed the project-specific screening criteria presented in **Table 2-3**.

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

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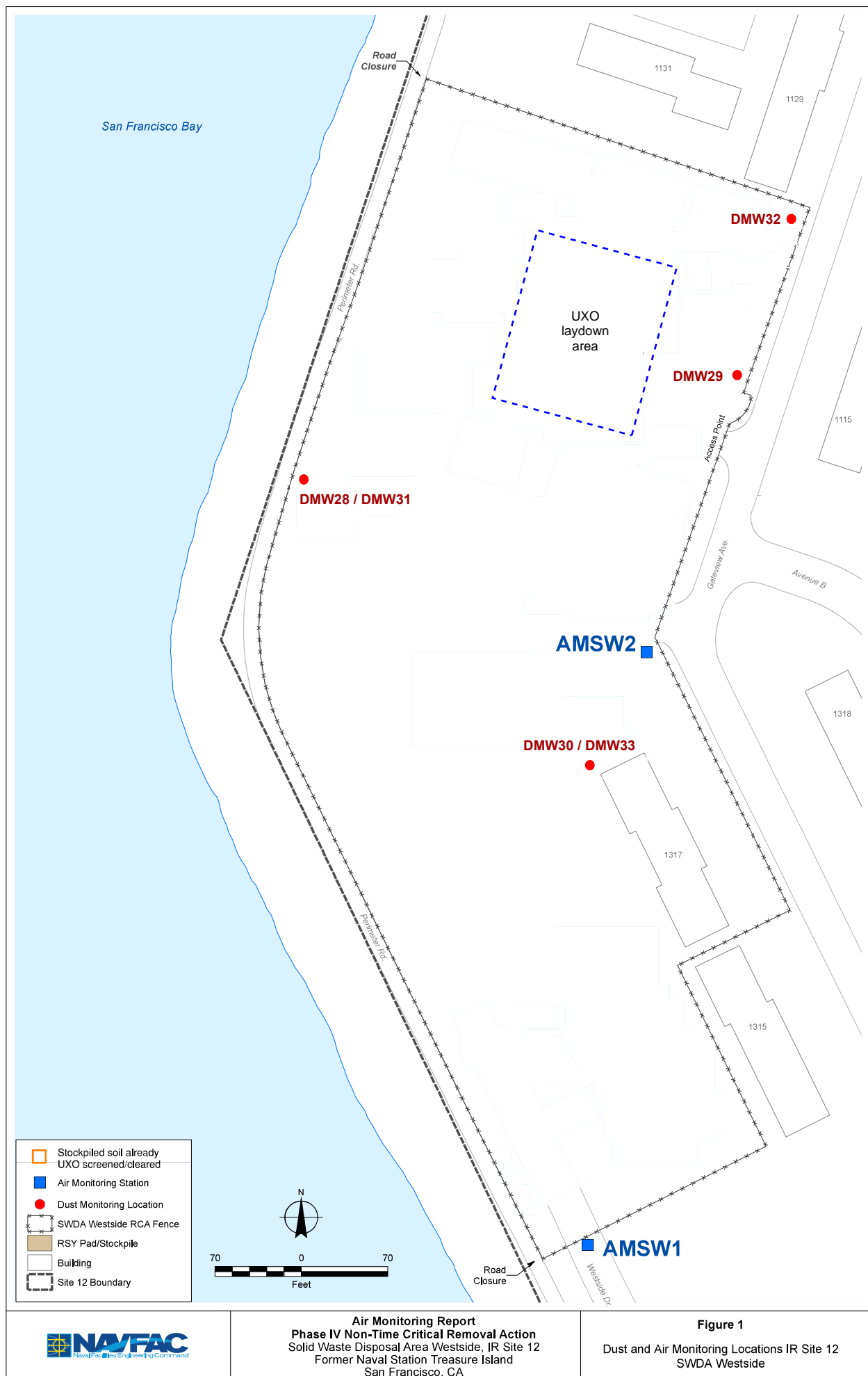
6.0 References

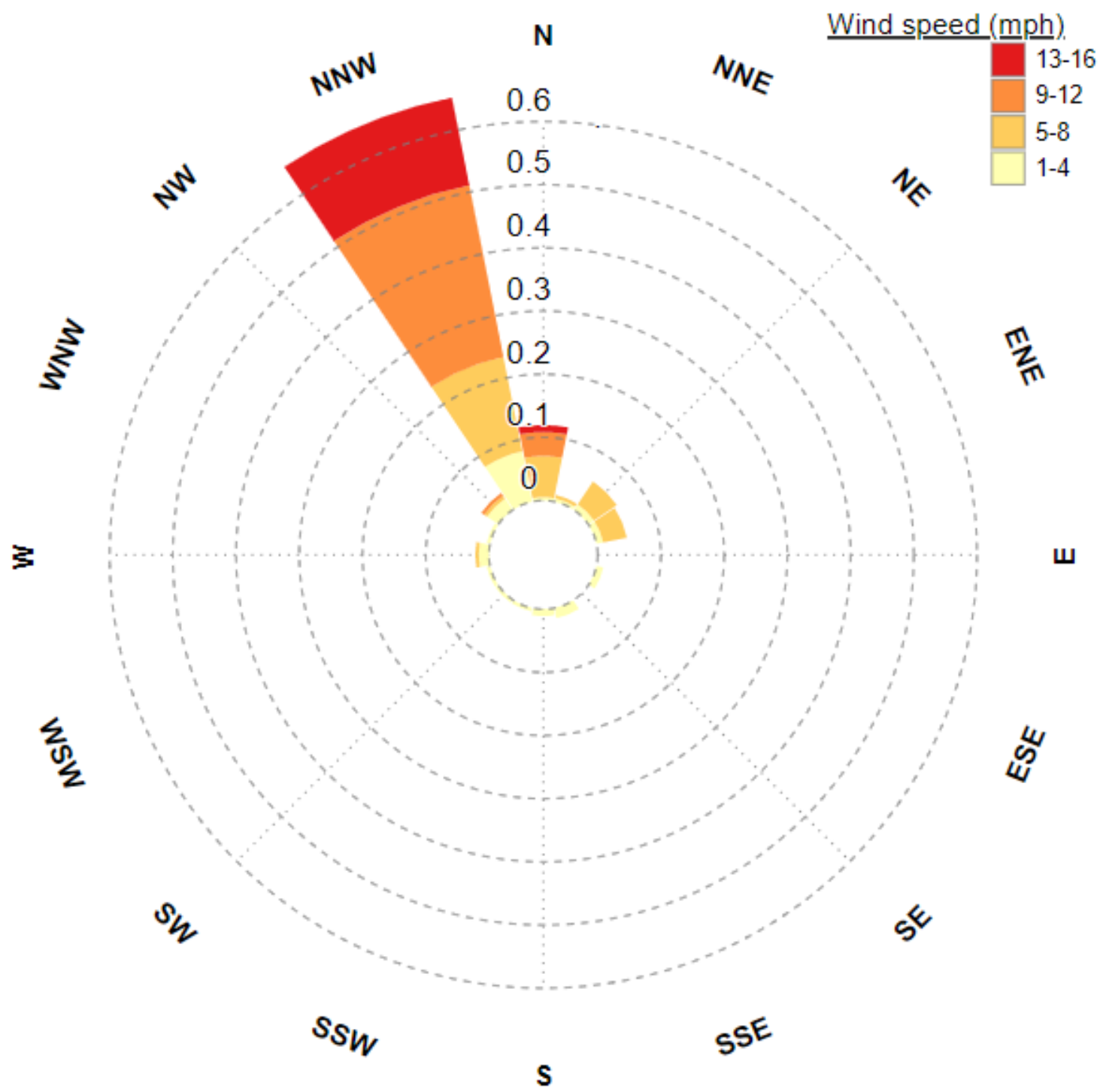
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FIGURES

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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

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)
DMW28	Site 12	5/2/2022	0.020	0.010	NA	Yes
DMW29	Site 12		0.021	0.010	0.000	Yes
DMW30	Site 12		0.027	0.013	0.003	Yes
DMW28	Site 12	5/3/2022	0.015	0.008	NA	Yes
DMW29	Site 12		0.023	0.010	0.002	Yes
DMW30	Site 12		0.048	0.014	0.006	Yes
DMW28	Site 12	5/4/2022	0.029	0.017	NA	Yes
DMW29	Site 12		0.036	0.026	0.009	Yes
DMW30	Site 12		0.041	0.024	0.007	Yes
DMW28	Site 12	5/6/2022	0.019	0.011	NA	Yes
DMW29	Site 12		0.021	0.013	0.002	Yes
DMW30	Site 12		0.020	0.012	0.001	Yes
DMW28	Site 12	5/9/2022	0.017	0.009	NA	Yes
DMW29	Site 12		0.017	0.011	0.002	Yes
DMW30	Site 12		0.018	0.011	0.002	Yes
DMW28	Site 12	5/10/2022	0.011	0.006	NA	Yes
DMW29	Site 12		0.047	0.019	0.013	Yes
DMW30	Site 12		0.023	0.009	0.003	Yes
DMW28	Site 12	5/11/2022	0.017	0.010	NA	Yes
DMW29	Site 12		0.027	0.011	0.001	Yes
DMW30	Site 12		0.013	0.009	-0.001	Yes
DMW28	Site 12	5/12/2022	0.010	0.006	NA	Yes
DMW29	Site 12		0.018	0.009	0.003	Yes
DMW30	Site 12		0.008	0.007	0.001	Yes
DMW28	Site 12	5/13/2022	0.017	0.008	NA	Yes
DMW29	Site 12		0.039	0.017	0.009	Yes
DMW30	Site 12		0.019	0.010	0.002	Yes
DMW28	Site 12	5/16/2022	0.011	0.008	NA	Yes
DMW29	Site 12		0.017	0.011	0.003	Yes
DMW30	Site 12		0.043	0.017	0.009	Yes
DMW31	Site 12	5/19/2022	0.026	0.021	NA	Yes
DMW32	Site 12		0.044	0.034	0.013	Yes
DMW33	Site 12		0.030	0.023	0.002	Yes
DMW31	Site 12	5/20/2022	0.017	0.010	NA	Yes
DMW32	Site 12		0.058	0.020	0.010	Yes
DMW33	Site 12		0.014	0.010	0.000	Yes
DMW31	Site 12	5/24/2022	0.053	0.030	NA	Yes
DMW32	Site 12		0.085	0.050	0.020	Yes
DMW33	Site 12		0.053	0.033	0.003	Yes
DMW31	Site 12	5/25/2022	0.037	0.023	NA	Yes
DMW32	Site 12		0.066	0.047	0.024	Yes
DMW33	Site 12		0.042	0.031	0.008	Yes
DMW31	Site 12	5/26/2022	0.008	0.006	NA	Yes
DMW32	Site 12		0.015	0.007	0.001	Yes
DMW33	Site 12		0.010	0.007	0.001	Yes
DMW31	Site 12	5/31/2022	0.032	0.020	NA	Yes
DMW32	Site 12		0.032	0.024	0.004	Yes
DMW33	Site 12		0.047	0.028	0.008	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.

WILLIAMS

WILLIAMS

Client Name NAVFAC

Date _____

5/2/2022

Project / No. T.I. Westside Phase IV NTCRA / J310000800

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Logged by TR

Weather Sunny

Instrument Type: Dust Trak II

Calibration Standards Used	Factory Calibrated	Zero in office

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities Remarks
0800	DMW28	upwind TAD	0.004	1280	Set up for TAD
	DMW29	Downwind TAD	0.005	2341	
	DMW30	Downwind TAD	0.008	0534	
1230	DMW28		0.009		Continue TAD
	DMW29		0.013		
	DMW30		0.017		
1430	DMW28		0.019		finishing TAD
	DMW29		0.020		
	DMW30		0.025		

5/2/22



AIR MONITORING LOG

Client Name NAVFAC

Date

5/3/2022

Project / No T.I. Westside Phase IV NTCRA / J310000800

Page 1 of 1

Logged by

T512

Weather

Sunny

51-70°F

Instrument Type: Dust Trak II

Calibration Standards Used

1, Zero calibrated in office

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities Remarks
0800	DMW 28	UP WIND grading	0.004	1280	set up for grading
	DMW 29	downwind grading	0.005	2341	
	DMW 30	downwind grading	0.006	0534	
1200	DMW 28		0.013		continue grading
	DMW 29		0.011		
	DMW 30		0.012		
1500	DMW 28		0.014		continue grading
	DMW 29		0.015		
	DMW 30		0.017		

5/3/22



Date _____

5/4/22

Project No. J310090800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by

Open Scenarios

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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
0845	DMW28	"DU" Tbd operation	0.027	1280	low hanging machine
	DMW29	↓ DU	0.020	2341	→ Tbd starting
	DMW30	↓ DU	0.031	0534	
1310	DMW28		0.017		no more trucks up for feed
	DMW29		0.025		grab dust monit.
	DMW30		0.018		

455 5/14/22

How hanging machine present in	
o 7000 starting @ 9 am today.	By.
o we were trucks of supplies	
up to today	
o grab dust men, others	



AIR MONITORING LOG

Client Name NAVFAC

Date

5/6/22

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

Page

Logged by

Logan Schwinn

Weather_

51°E-60°E. Cloudy. Fog low hanging moisture layers.

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	Waste dump	0.008	1280	W.B. i.e.
	DMW29	DW	0.009	2341	
	DMW30	DW	0.008	0534	
1310	DMW28		0.011		W.D. day.
	DMW29		0.013		
	DMW30		0.014		
1530	DMW28		0.004		unwrapping up
	DMW29		0.004		
	DMW30		0.004		

455
5/6/22



AIR MONITORING LOG

Client Name NAVFAC

Date _____

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

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Logged by Logan Schuring

Weather 47°F - 60°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
0806	DMW28	OW Interf. grading	0.010	1280	set up
	DMW29	↓ DW	0.011	2341	
	DMW30	↓ DW	0.014	0534	
1225	DMW28		0.012		mid-day
	DMW29		0.011		
	DMW30		0.012		
1515	DMW28		0.008		of wrapping up
	DMW29		0.010		
	DMW30		0.008		

645
5/9/02



AIR MONITORING LOG

Client Name NAVFAC

Date _____

5/10/22

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

Page

of

Logged by

Logan Schmitt

Weather

44°F - 55°F. Sunny

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	rw TD 6P 1	0.006	1280	Set up
	DMW29	DW DMW44 + f. in	0.005	2341	
	DMW30	DW	0.005	0534	
1145	DMW28		0.010		rmdb for lunch.
	DMW29		0.010		
	DMW30		0.009		
1500	DMW28		0.007		op finished for
	DMW29		0.011		
	DMW30		0.013		

455
5/16/22



AIR MONITORING LOG

Client Name NAVFAC

Date _____

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

Logged by Lojan Schwin

Weather 44°F - 57°F Sunny

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
0740	DMW28	W + R + D of Imp + Fil	0.013	1280	Setup prob
	DMW29	DW	0.010	2341	
	DMW30	DW	0.007	0534	
1145	DMW28		0.007		W. cl-day.
	DMW29		0.008		
	DMW30		0.008		
1450	DMW28		0.009		of finished
	DMW29		0.008		
	DMW30		0.015		



AIR MONITORING LOG

Client Name NAV-FAC

Date _____

Project No. J310009800 SWDA, Westside, Site 12, Treasure Island Page

1 of

Logged by

Weather_

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	DMU28	UV Supply Hall	0.009	1280	no T&D today
	DMU29	DU	0.008	2341	2nd fl.
	DMU30	DU	0.008	0534	mob.
1150	DMU28		0.005		mid-day
	DMU29		0.008		
	DMU30		0.008		
1500	DMU28		0.006		of wrapping up
	DMU29		0.009		
	DMU30		0.007		

135 5/11/12



AIR MONITORING LOG

Client Name NAVFAC

Date _____

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

Logged by Logan Schuring

Weather 48°F - 62°F Sunny.

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
0730	DMW28	• UU 7th / Tower 4	0.014	1280	• web.
	DMW29	• UU 8th	0.013	2341	
	DMW30	• UU 9th	0.012	0534	
1310	DMW28		0.009		
	DMW29		0.015		
	DMW30		0.013		
1500	DMW28		0.009		• of finishing work
	DMW29		0.025		• site security
	DMW30		0.008		



AIR MONITORING LOG

Client Name NAVFAC

Date 5/16/22

Project No. J31000800 SWDA Westside, Site 12, Treasure Island Page 1 of 1

Logged by TR

Weather Sunny 53-67°F

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated, Zeroed in the office

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m3)	Unit Number	Activities, Remarks
0800	Dmw28	upwind T&D	0.016	1280	set up for
↓	Dmw29	downwind T&D	0.012	0534	
↓	Dmw30	downwind T&D	0.010	2341	
1230	Dmw28		0.013		T&D trucks
↓	Dmw29		0.015		
↓	Dmw30		0.016		
1430	Dmw28		0.011		T&D trucks
↓	Dmw29		0.018		
↓	Dmw30		0.019		
5/16/22					
TR					



AIR MONITORING LOG

Client Name NAVFAC

Date _____

5/19/22

Project / No. T.I. Westside Phase IV NTCRA / J310000800Page 1 of 1

Logged by

16

Weather Sunny 58-72°F

Instrument Type: DustTrak II

Calibration Standards Used	Factory Calibrated, Zeroed in office

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities Remarks
0800	DmW31	UP Wind TAD	0.022	1280	Begin TAD
	DmW32	down Wind TAD	0.031	0534	
	DmW33	down Wind TAD	0.043	2341	
1300	DmW31		0.022		TAD
	DmW32		0.025		
	DmW33		0.021		
1500	DmW31		0.028		Finish TAD move stockpile
	DmW32		0.035		
	DmW33		0.025		

TK

5/18/22



AIR MONITORING LOG

Client Name NAVFAC

Date 5/20/22

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

Logged by TK

Weather Sunny 53-68°F

Instrument Type: Dust Trak II

Calibration Standards Used	Factory Calibrated	Zeroed in office

[illegible]



AIR MONITORING LOG

Client Name NAVFAC

Date _____

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

Page 1 of 7

Logged by

Logan Schwilke

Weather

487-6797. Sunny. AM haze / max. 19/19

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
0730	DMW31	OW T&D operation	0.054	1280	-reading 4.24 before haze began. This haze seen with
	DMW32	OW	0.053	0534	
	DMW33	OW	0.050	2341	event will start reading again
	DMW31		0.025		old in 10:25
	DMW32		0.036		
	DMW33		0.032		
1500	DMW31		0.030		
	DMW32		0.037		
	DMW33		0.033		

155 5/24/22

readings have come down somewhat. haze



Date _____

5/25/22

Page

○

Logan Schwinberg

50°F-67°F. Every. Windy. hazy

e: Dust Trak IIStandards Used Factory Calibrated

Time	Dust Monitoring Station Number	Location	Instrument Reading (mg/m ³)	Unit Number	Activities, Remarks
0800	DMW31	↓	0.039	1286	↑ readings high with outgoing.
	DMW32	↓	0.047	05341	
	DMW33	↓	0.037	2341	
1115	DMW31		0.026		* DMW32 blinking & Tupper clean & be blowing. No on the hills are turning. A
	DMW32		0.043		
	DMW33		0.030		
1445	DMW31		0.017		last readings
	DMW32		0.024		
	DMW33		0.033		

* DMU32 blinky
 Tupper + clear
 be blowing. No
 in it. This one
 + tancing. No
 movement.



AIR MONITORING LOG

Client Name NAVFAC

Date _____

5/26/22

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

Logged by

Logged by begin sketching
Weather 46°F - 60°F. cloudy.

48°F - 60°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	DMM31	• W site cleanup	0.007	1280	• site setup/pre
	DMM32	• W	0.007	2341	
	DMM33	• W	0.013	0534	
1310	DMM31		0.004		• off wrapping up for
	DMM32		0.011		
	DMM33		0.007		

145 5/26/22



Date _____

5/31/22

Page

logarithmic

46°F - 64°F. Sunny

Instrument Type: Dust Trak II

Calibration Standards Used Factory Calibrated

o definition involving up for class
site security.

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)
5/3/2022	30.03	56.15	286.57
5/4/2022	29.97	55.71	286.32
5/5/2022	29.99	52.33	284.44
5/11/2022	30.21	51.63	284.06
5/12/2022	30.28	53.13	284.89
5/13/2022	30.29	54.61	285.71
5/13/2022	30.22	61.78	289.69
5/17/2022	30.05	54.75	285.79
5/20/2022	29.89	60.86	289.18
5/20/2022	29.84	59.74	288.56
5/25/2022	29.81	60.95	289.23

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

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	24.71	05/03/2022	23	NA	NA
	22.12	05/04/2022	29	NA	NA
	23.55	05/05/2022	16	NA	NA
	22.36	05/11/2022	12	NA	NA
	23.19	05/12/2022	13	NA	NA
	22.99	05/13/2022	13	NA	NA
	6.77	05/13/2022	11	NA	NA
	24.40	05/17/2022	19	NA	NA
	22.06	05/20/2022	32	NA	NA
	6.42	05/20/2022	26	NA	NA
	24.71	05/25/2022	52	NA	NA
AMSW2	25.23	05/03/2022	32	9	No
	22.52	05/04/2022	55	26	No
	23.52	05/05/2022	57	41	No
	23.26	05/11/2022	36	24	No
	23.64	05/12/2022	33	20	No
	23.12	05/13/2022	24	11	No
	6.44	05/13/2022	16	5	No
	24.94	05/17/2022	31	12	No
	23.04	05/20/2022	39	7	No
	6.02	05/20/2022	45	19	No
	24.20	05/25/2022	68	16	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	24.73	05/03/2022	38.6558	NA	NA
	22.11	05/04/2022	37.898	NA	NA
	23.57	05/05/2022	29.4059	NA	NA
	22.35	05/11/2022	31.1608	NA	NA
	23.18	05/12/2022	22.745	NA	NA
	22.96	05/13/2022	21.299	NA	NA
	6.75	05/13/2022	22.5605	NA	NA
	24.41	05/17/2022	35.4307	NA	NA
	22.08	05/20/2022	48.4464	NA	NA
	6.44	05/20/2022	42.8623	NA	NA
	24.71	05/25/2022	84.8544	NA	NA
AMSW2	25.25	05/03/2022	48.0569	9.4011	No
	22.50	05/04/2022	79.2314	41.3334	No
	23.52	05/05/2022	67.3791	37.9732	No
	23.25	05/11/2022	49.4627	18.3019	No
	23.65	05/12/2022	43.7285	20.9835	No
	23.16	05/13/2022	41.0792	19.7802	No
	6.47	05/13/2022	33.6049	11.0444	No
	24.94	05/17/2022	53.7554	18.3247	No
	22.03	05/20/2022	39.5577	-8.8887	No
	6.01	05/20/2022	76.037	33.1747	No
	24.21	05/25/2022	96.3289	11.4745	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	24.71	05/03/2022	0.0013	No
	22.12	05/04/2022	0.00052 J	No
	23.55	05/05/2022	0.00063 J	No
	22.36	05/11/2022	0.0011	No
	23.19	05/12/2022	0.0014	No
	22.99	05/13/2022	0.0013	No
	6.77	05/13/2022	0.0025 J	No
	24.4	05/17/2022	0.00053 J	No
	22.06	05/20/2022	0.0014	No
	6.42	05/20/2022	0.0025 J	No
	24.71	05/25/2022	0.0032	No
AMSW2	25.23	05/03/2022	0.0027	No
	22.52	05/04/2022	0.0057	No
	23.52	05/05/2022	0.011	No
	23.26	05/11/2022	0.0048	No
	23.64	05/12/2022	0.0029	No
	23.12	05/13/2022	0.0024	No
	6.44	05/13/2022	0.0036	No
	24.94	05/17/2022	0.0017	No
	23.04	05/20/2022	0.0021	No
	6.02	05/20/2022	0.0062	No
	24.2	05/25/2022	0.0047	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

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	23.56	05/05/2022	No	0	0.00089 J	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	0.0027	0.00032 J	< 0.00059	
	22.94	05/13/2022	No	0	0.0017	0.00037 J	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	< 0.00059	0.00026 J	< 0.00059	0.0049	0.00057 J	< 0.00059
	22.05	05/20/2022	No	0	0.0014 J+	0.00042 J	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	< 0.00063	0.00035 J	< 0.00063	0.0038	0.00063	< 0.00063
AMSW2	23.52	05/05/2022	No	0	0.00066 J	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	< 0.00055	0.0019	0.00041 J	< 0.00055	
	23.09	05/13/2022	No	0	0.0016	0.0003 J	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	< 0.00053	0.00036 J	0.00035 J	< 0.00053	0.0041	0.0012	< 0.00053	
	23.04	05/20/2022	No	0	0.0015 J+	0.00041 J	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	< 0.0006	0.00051 J	0.00049 J	< 0.0006	0.0039	0.0019	0.00026 J	

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

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	22.04	05/04/2022	NA	0	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	23.19	05/12/2022	NA	0	< 0.00083	< 0.00083	< 0.00083	< 0.00083	< 0.00083	< 0.00083	< 0.00083
	24.42	05/17/2022	NA	0	< 0.00077	< 0.00077	< 0.00077	< 0.00077	< 0.00077	< 0.00077	< 0.00077
	24.65	05/25/2022	NA	0	< 0.00079	< 0.00079	< 0.00079	< 0.00079	< 0.00079	< 0.00079	< 0.00079
AMSW2	22.53	05/04/2022	NA	0	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	23.65	05/12/2022	NA	0	< 0.00074	< 0.00074	< 0.00074	< 0.00074	< 0.00074	< 0.00074	< 0.00074
	24.94	05/17/2022	NA	0	< 0.00072	< 0.00072	< 0.00072	< 0.00072	< 0.00072	< 0.00072	< 0.00072
	24.20	05/25/2022	NA	0	< 0.00077	< 0.00077	< 0.00077	< 0.00077	< 0.00077	< 0.00077	< 0.00077

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	24.70	05/03/2022	< 0.00000002	No
	22.31	05/11/2022	< 0.00000002	No
	6.65	05/13/2022	< 0.00000008	No
	6.43	05/20/2022	< 0.00000008	No
AMSW2	25.22	05/03/2022	< 0.00000002	No
	23.27	05/11/2022	< 0.00000002	No
	6.41	05/13/2022	< 0.00000008	No
	6.02	05/20/2022	< 0.00000008	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: 30 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: N62473-17-D-0005			Project Title / Location: IR Site 12 RD/RA, Treasure Island, SF, CA			Gilbane Project Number: J310000800					Alpha	Beta	Air samples collected between 22 Mar 2021 and 24 May 2022		Value < MDC		Value < 0.1 x Effluent Conc						
									Radionuclide		Ra-226	Sr-90			< 72 hr decay time		Value > 0.1 x Effluent Conc						
Information effective as of: 30 Jun 2022									Effluent Conc (µCi/ml)		9.E-13		6.E-12		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		Net dpm		Activity (µCi/ml)		*Effluent Conc (%)		Count Tech	Data Reviewer	
													Alpha	Beta	Alpha	Beta	Alpha	Beta	Alpha	Beta			
AS-459	Perimeter	Upwind	PE03	60	5/2/22 5:25	5/2/22 15:20	595	3.6E+07	D	6/2/22	1	cpm	0.45	4.70	1.4	9.9	1.8E-14	1.2E-13	2.0%	2.1%	DB	CB	
AS-460	Perimeter	Downwind	PE04	60	5/2/22 5:30	5/2/22 15:15	585	3.5E+07	D	6/2/22	1	cpm	0.35	5.10	1.1	11.0	1.4E-14	1.4E-13	1.6%	2.3%	DB	CB	
AS-461	Perimeter	Upwind	PE03	60	5/3/22 5:18	5/3/22 14:53	575	3.4E+07	D	6/2/22	1	cpm	0.10	4.40	0.3	9.0	4.1E-15	1.2E-13	0.5%	2.0%	DB	CB	
AS-462	Perimeter	Downwind	PE04	60	5/3/22 5:15	5/3/22 15:00	585	3.5E+07	D	6/2/22	1	cpm	0.30	4.25	1.0	8.6	1.2E-14	1.1E-13	1.4%	1.8%	DB	CB	
AS-463	Perimeter	Upwind	PE03	60	5/4/22 5:05	5/4/22 13:25	500	3.0E+07	D	6/2/22	1	cpm	0.30	4.05	1.0	8.0	1.4E-14	1.2E-13	1.6%	2.0%	DB	CB	
AS-464	Perimeter	Downwind	PE04	60	5/4/22 5:00	5/4/22 13:20	500	3.0E+07	D	6/2/22	1	cpm	0.05	3.05	0.2	5.2	2.4E-15	7.8E-14	0.3%	1.3%	DB	CB	
AS-465	Perimeter	Upwind	PE03	60	5/10/22 5:15	5/10/22 15:08	593	3.6E+07	D	6/2/22	1	cpm	0.25	3.95	0.8	7.7	1.0E-14	9.8E-14	1.1%	1.6%	DB	CB	
AS-466	Perimeter	Downwind	PE04	60	5/10/22 5:10	5/10/22 15:00	590	3.5E+07	D	6/2/22	1	cpm	0.35	4.20	1.1	8.5	1.4E-14	1.1E-13	1.6%	1.8%	DB	CB	
AS-467	Perimeter	Upwind	PE03	60	5/11/22 5:10	5/11/22 14:55	585	3.5E+07	D	6/2/22	1	cpm	0.25	3.60	0.8	6.8	1.0E-14	8.7E-14	1.1%	1.4%	DB	CB	
AS-468	Perimeter	Downwind	PE04	60	5/11/22 5:15	5/11/22 15:00	585	3.5E+07	D	6/2/22	1	cpm	0.30	3.95	1.0	7.7	1.2E-14	9.9E-14	1.4%	1.7%	DB	CB	
AS-469	Perimeter	Upwind	PE03	60	5/12/22 5:10	5/12/22 15:00	590	3.5E+07	D	6/2/22	1	cpm	0.20	4.55	0.6	9.4	8.1E-15	1.2E-13	0.9%	2.0%	DB	CB	
AS-470	Perimeter	Downwind	PE04	60	5/12/22 5:05	5/12/22 15:05	600	3.6E+07	D	6/2/22	1	cpm	0.10	4.30	0.3	8.7	4.0E-15	1.1E-13	0.4%	1.8%	DB	CB	
AS-471	Perimeter	Upwind	PE03	60	5/13/22 5:10	5/13/22 14:00	530	3.2E+07	D	6/2/22	1	cpm	0.05	3.85	0.2	7.5	2.2E-15	1.1E-13	0.2%	1.8%	DB	CB	
AS-472	Perimeter	Downwind	PE04	60	5/13/22 5:05	5/13/22 14:05	540	3.2E+07	D	6/2/22	1	cpm	0.15	3.90	0.5	7.6	6.6E-15	1.1E-13	0.7%	1.8%	DB	CB	
AS-473	Perimeter	Upwind	PE03	60	5/16/22 5:10	5/16/22 14:50	580	3.5E+07	D	6/2/22	1	cpm	0.15	4.70	0.5	9.9	6.2E-15	1.3E-13	0.7%	2.1%	DB	CB	
AS-474	Perimeter	Downwind	PE04	60	5/16/22 5:15	5/16/22 14:45	570	3.4E+07	D	6/2/22	1	cpm	0.05	4.20	0.2	8.5	2.1E-15	1.1E-13	0.2%	1.9%	DB	CB	
AS-475	Perimeter	Upwind	PE03	60	5/19/22 5:10	5/19/22 15:15	605	3.6E+07	D	6/2/22	1	cpm	0.25	3.85	0.8	7.5	9.8E-15	9.3E-14	1.1%	1.5%	DB	CB	
AS-476	Perimeter	Downwind	PE04	60	5/19/22 5:15	5/19/22 15:08	593	3.6E+07	D	6/2/22	1	cpm	0.15	4.85	0.5	10.3	6.0E-15	1.3E-13	0.7%	2.2%	DB	CB	
AS-477	Perimeter	Upwind	PE03	60	5/20/22 5:15	5/20/22 14:30	555	3.3E+07	D	6/2/22	1	cpm	0.35	4.05	1.1	8.0	1.5E-14	1.1E-13	1.7%	1.8%	DB	CB	
AS-478	Perimeter	Downwind	PE04	60	5/20/22 5:20	5/20/22 14:40	560	3.4E+07	D	6/2/22	1	cpm	0.45	4.20	1.4	8.5	1.9E-14	1.1E-13	2.1%	1.9%	DB	CB	
AS-479	Perimeter	Upwind	PE03	60	5/24/22 5:10	5/24/22 14:30	560	3.4E+07	D	6/2/22	1	cpm	0.25	4.80	0.8	10.1	1.1E-14	1.4E-13	1.2%	2.3%	DB	CB	
AS-480	Perimeter	Downwind	PE04	60	5/24/22 5:15	5/24/22 14:35	560	3.4E+07	D	6/2/22	1	cpm	0.05	3.90	0.2	7.6	2.1E-15	1.0E-13	0.2%	1.7%	DB	CB	
												cpm			#N/A	#N/A	#N/A	#N/A					
												cpm			#N/A	#N/A	#N/A	#N/A					

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

Sample Types
Perimeter
Effluent

Counting Units
cnts
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)

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)

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