The Bellwether District
Air Monitoring Monthly Data Report

November 2023

3144 Passyunk Avenue, Philadelphia, Pennsylvania

Prepared for

Philadelphia Energy Solutions Refining and Marketing LLC
c/o Hilco Redevelopment Partners (HRP)
2929 Arch Street, Suite 1650
Philadelphia, Pennsylvania 19104

Prepared by

Terraphase Engineering Inc.
252 W. Swamp Road, Suite 35
Doylestown, Pennsylvania 18901

December 2023

Project Number P069.001.002B

terraphase engineering

Contents

Acronyms and Abbreviations iii
1 Introduction 1
1.1 Background 1
1.2 Purpose and Objective 1
2 Perimeter Air Monitoring 1
2.1 Dust Monitoring Data 2
2.2 VOC Monitoring Data 2
2.3 Corrective Measures 2
2.4 Equipment Maintenance 2

Figures

1 Air Monitoring Locations
2 PM-10 24-Hour Averages
3 VOC 8-Hour Averages

Acronyms and Abbreviations

PM	particulate matter
Terraphase	Terraphase Engineering Inc.
Site	3144 Passyunk Avenue, Philadelphia, Pennsylvania
VOC	volatile organic compound

1 Introduction

On behalf of Philadelphia Energy Solutions Refining and Marketing LLC (PESRM), Terraphase Engineering Inc. (Terraphase) has prepared this *Air Monitoring Monthly Data Report* detailing the monitoring of total volatile organic compounds (VOCs) and particulates (i.e., respirable dust) in support of the planned earthwork and construction at 3144 Passyunk Avenue in Philadelphia, Pennsylvania (Site).

A perimeter air monitoring plan previously submitted by Terraphase established project action levels and prescribed protocols for corrective measures should VOC or dust levels approach action levels.

1.1 Background

The Site was formerly operated as a petroleum refinery between 1860 and 2019. Soil and groundwater investigation and remediation activities have been ongoing at the Site for decades. Known soil contaminants at the Site include various VOCs, various semivolatile organic compounds, and lead.

1.2 Purpose and Objective

This report provides monitoring results at the Site in November 2023 as well as any corrective measures that were required per the air monitoring plan.

2 Perimeter Air Monitoring

Six weather-proof monitoring stations were placed along the perimeter of the Industrial Phase I area, the approximately 447-acre central portion of the Site, as shown in Figure 1, for real-time air monitoring and data collection. The monitors are equipped with telemetry and data logging software, solar panels, and batteries. The monitors have been continuously collecting data beginning November 1, 2022, prior to earthwork activities.

2.1 Dust Monitoring Data

Particulate Matter (PM) concentrations have been monitored at the six perimeter monitoring stations, measuring PM-10[1] continuously and reporting 15-minute, time-weighted averages. The PM-10 24-hour average data are depicted in Figure 2. Due to a sensor malfunction, there is no available PM-10 data at Station 6 from November 1st to November 14th. As shown in the figure, there were no exceedances of the calculated site-specific 24-hour action level of 150 micrograms per cubic meter.

2.2 VOC Monitoring Data

VOC[2] concentrations have been continuously monitored at the six perimeter monitoring stations, reporting 15-minute, time-weighted averages. The VOC 8-hour average data are depicted in Figure 3. Due to a sensor malfunction, there is no available VOC data at Station 6 from November 25th to November 26th. As shown in the figure, there were no exceedances of the calculated site-specific 8-hour action level of 4.6 parts per million.

2.3 Corrective Measures

No corrective measures were required for dust or VOC mitigation in November 2023 because dust and VOC concentrations remained below the calculated site-specific action levels.

2.4 Equipment Maintenance

Terraphase reviews air monitoring data daily and equipment is programmed to alert failures via email and text messaging. Ongoing monthly maintenance visits to test battery power and assess site conditions in proximity of units are also conducted to minimize impact to continuous operation of the units. Periodic downtime windows are noted in sections 2.1 and 2.2 for each sensor, when applicable.

[1] NextPM sensor manufactured by Tera Sensor.

[2] 10.6-electron volt lamp photoionization detector manufactured by IonScience.

Figures

1 Air Monitoring Locations
2 PM-10 24-Hour Averages
3 VOC 8-Hour Averages



0 1,500 3,000 Feet

1 Inch = 1500 Feet

N

Legend

Air Monitoring Locations

SAFETY FIRST

terraphase engineering

CLIENT: Philadelphia Energy Solutions Refining and Marketing LLC

PROJECT: Bellwether District Air Monitoring

PROJECT NUMBER: P069.001

Air Monitoring Locations

FIGURE 1

N:\GIS\Prj\P044.001_PESRM-PES\QGIS_QGZ and GPKG\Main Branch\(20230111) QGZ322_P044.001_Hilco.qgz Air Monitoring - Locations Map 2021-03-26T15:56:13.000 Created by: Resource Checked by: initial

Figure 2 - Dust Concentration 24-Hour Averages
Nov. 1, 2023 – Nov. 30, 2023
The Bellwether District

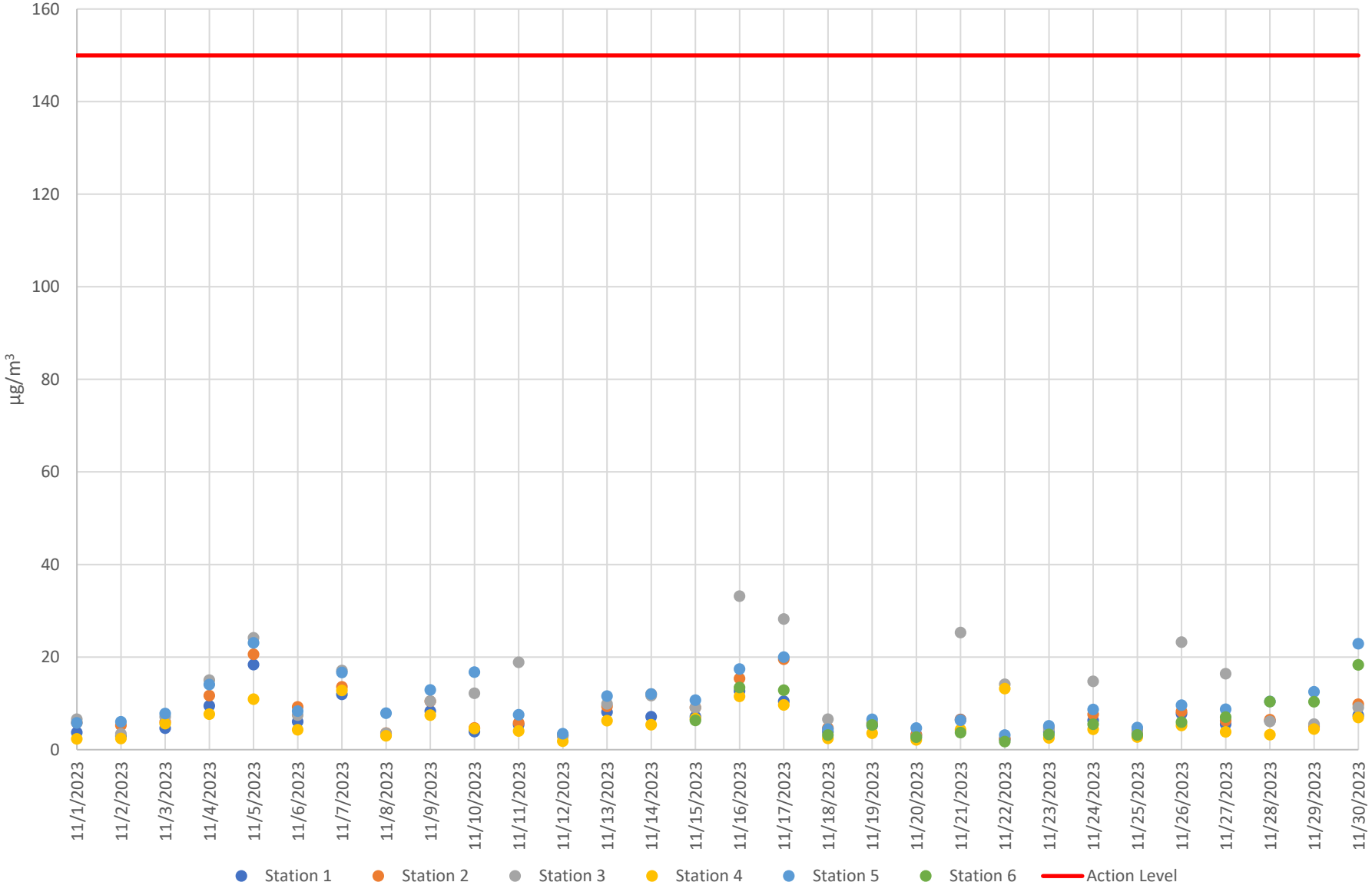
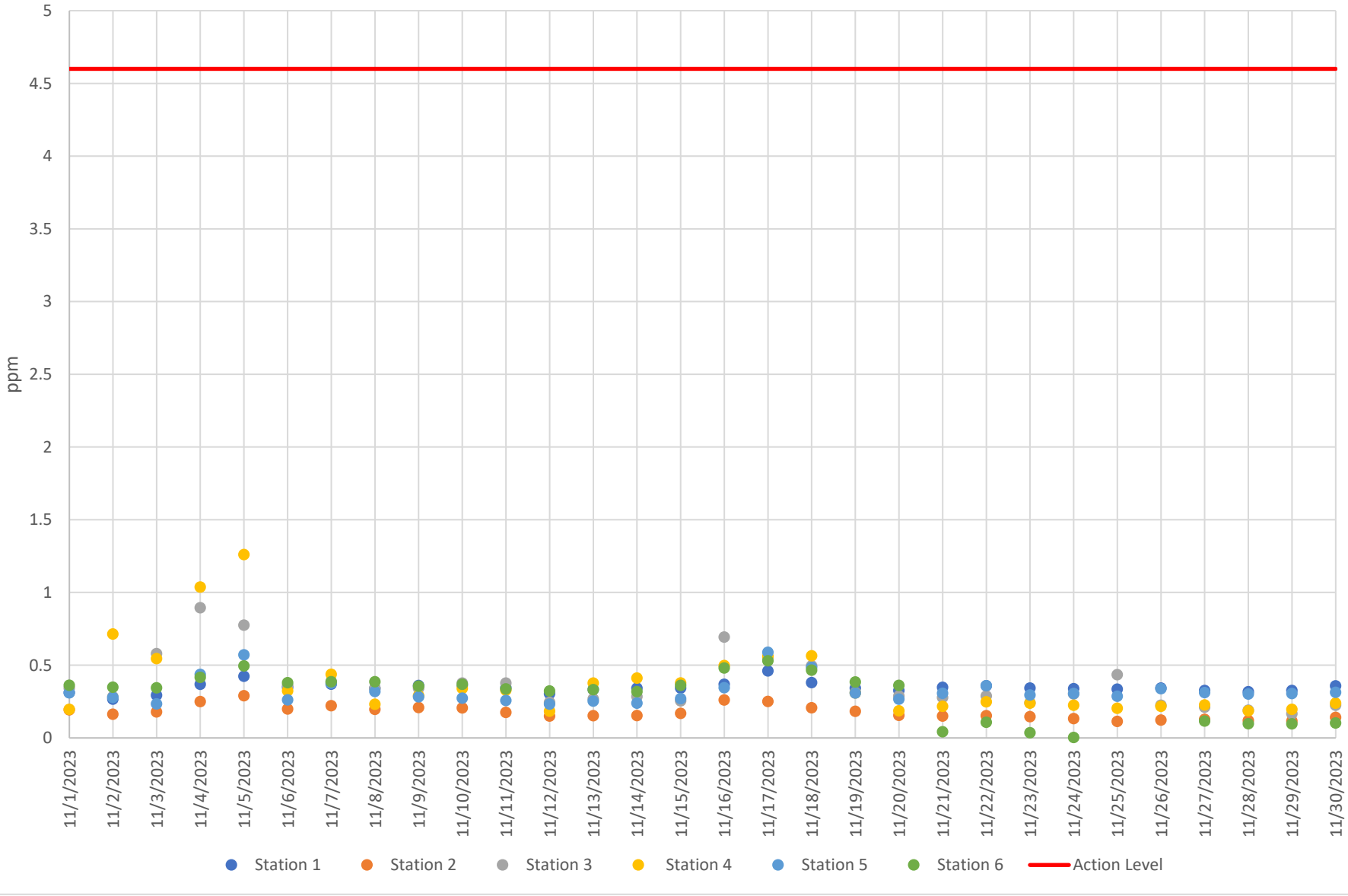


Figure 3 - VOC Concentration 8-Hour Averages
Nov. 1, 2023 – Nov. 30, 2023
The Bellwether District



For visualization purposes, the highest of the 3 TVOC 8-hour average periods per day is shown.