

# **Monitoring and Sampling Plans**

*Naturally Occurring Asbestos (NOA)  
Particulate Matter (PM2.5, PM10)  
Noise*

## **Birdsboro Materials H&K Group, Inc.**

Union Township  
Berks County, Pennsylvania

### **Plan Prepared by:**

H&K Group, Inc.  
Engineering & Environmental Services Division  
2052 Lucon Road  
P.O. Box 196  
Skippack, PA 19474

**September 2024**

## 1.0 Executive Summary

The Pennsylvania Department of Environmental Protection (PADEP), in 2022, implemented an Application Supplement – Naturally Occurring Asbestos (NOA) for new or amended mining permit areas in proximity to igneous or metamorphic rock types having the potential to host naturally occurring asbestos (NOA). Since 2022, Birdsboro Materials has not filed for a major permit modification which would necessitate the completion of the NOA application supplement. Birdsboro Materials, since 2022, has been performing annual monitoring and sampling for NOA at the Birdsboro Materials facility, given the known potential for its presence, to ensure protection of the workforce and surrounding community. To date, no detections above the mandated PADEP established threshold of 0.001 structures per cubic centimeter (str/cc), fibers  $\geq 0.5 \mu\text{m}$  long and having  $\geq 3:1$  aspect ratio, have been reported.

Birdsboro Materials proposes the Naturally Occurring Asbestos (NOA) Sampling Plan in Attachment 1 providing bi-annual sampling events and providing the data to the Township and Township residents. Refer to Attachment 1 for specifics of the proposed plan.

The PADEP, through oversight of the air quality permits issued specifically to Birdsboro Materials, require visible emissions testing (opacity) to ensure compliance with the standards of said permits. Ongoing monitoring requirements involve weekly inspections and record keeping.

To better address concerns raised by residents specific to particulate matter, Birdsboro Materials proposes the Particulate Matter Sampling Plan in Attachment 2 providing bi-annual sampling events for PM 2.5 and PM 10 to ensure the National Ambient Air Quality Standard (NAAQS) standards, established by the Environmental Protection Agency (EPA), are met for 24-hour PM 2.5 and PM 10. Refer to Attachment 2 for specifics of the proposed plan.

The October 16, 1995 Union Township Agreement, specifically paragraph 21, stipulates allowable noise levels, measured in the A-weighted (dBA) scale, for specific points around the perimeter of the operation. Specifically, paragraph 21 stipulates that noise levels should not exceed 75 dBA at the property line of the operation in Union Township. In addition, along the northern boundary line the noise level should not exceed 65 dBA. This northern boundary line is parallel to Hopewell Street and adjacent to residential areas. An expansion of operation within Union Township would apply the 65 dBA level along the eastern boundary line adjacent to the residential areas along Chestnut Street.

Although routine noise monitoring is not required per the Union Township Agreement or PADEP, Birdsboro Materials proposes the Noise Monitoring Plan in Attachment 3 providing bi-annual noise monitoring events and providing the data to the Township and Township residents. Refer to Attachment 3 for specifics of the proposed plan.

**Table of Contents**

**Attachment 1: Naturally Occurring Asbestos (NOA) Sampling Plan**

**Attachment 2: Particulate Matter (PM2.5, PM10) Sampling Plan**

**Attachment 3: Noise Monitoring Plan**

**ATTACHMENT 1**

# **Naturally Occurring Asbestos (NOA)** **Sampling Plan**

## **Birdsboro Materials** **H&K Group, Inc.**

Union Township  
Berks County, Pennsylvania

**Plan Prepared by:**  
H&K Group, Inc.  
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**September 2024**

## 1.0 Introduction

This naturally occurring asbestos (NOA) sampling plan has been developed to provide specific procedures and guidance for Birdsboro Materials for the air monitoring of NOA associated with aggregates mined at Birdsboro Materials. Specifically, air monitoring will take place during daytime facility operation, during which activities include crushing, transportation and handling of aggregate at Birdsboro Quarry.

### 1.1 Purpose and Scope

Elements of this Plan include procedures and guidance for the following:

- a. Sampling equipment specifications, calibration procedures and operation;
- b. Laboratory designation and analysis methods; and
- c. Setup of sampling/monitoring points and consideration of weather conditions.

Each element is addressed as part of the complete Plan in the following sections.

## 2.0 Sampling Equipment and Procedures

This section of the Plan describes the types of sampling equipment, sample media, calibration procedures and operation procedures.

The sampling equipment used for the NOA sampling will be Zefon 120V High Volume Diaphragm Sampling Pumps. Each pump will be calibrated prior to the start of each sampling event utilizing a Bios Defender 510 Calibrator and rotameter. Assuming each sampling event will be conducted over the course of a 6-hour work activity, the pumps will be calibrated to a 3.33 liters per minute (L/min.) flow rate to achieve a target sample volume of 1,200 liters (L). In the event that work activities are anticipated to be more or less than 6-hours at a given location, flow rate will be adjusted to achieve the target sample volume of 1,200 L.

Air pumps will be powered by portable generators due to the anticipated remote sample locations where electrical power is not available. Pumps will be checked periodically during sampling events to ensure proper operation. Flow rates will be measured before and at the conclusion of the sampling event. The initial and final flow rates will be recorded.

The sampling media used will be 25-millimeter (mm) transmission electron microscopy (TEM) cassettes with 0.45-micron ( $\mu\text{m}$ ) mixed cellulose ester (MCE) filters. Calibration will occur with the filter media in-line. Air samples will be collected utilizing equipment and media in accordance with National Institute of Occupational Safety and Health (NIOSH) Methods 7400 and 7402. Air samples will be submitted for analysis referenced in Section 3.0.

## 3.0 Laboratory and Analysis

Birdsboro Materials will submit samples via chain of custody to EMSL Laboratory of Cinnaminson, NJ, an AIHA-LAP, LLC - IHLAP, ELLAP, EMLAP (ISO/IEC 17025 and USEPA NLLAP) accredited lab for analysis (ID#100194).

Air samples will be analyzed by ISO 10312-2019-10 "Ambient Air - Determination of Asbestos Fibers - Direct transfer Transmission Electron microscopy Method". ISO method 10312 modified per OSWER Directive #9200.0-68 to include fibers  $\geq 0.5 \mu\text{m}$  long and  $\geq 3:1$  aspect ratio. EMSL will achieve analytical

sensitivity of 0.001 structures per cubic centimeter (str/cc). Two blank air samples will be submitted for each sampling event for quality control.

#### **4.0 Air Sampling Setup**

Prior to initiating a sampling event, Birdsboro Materials will notify the Township in advance of a scheduled sampling event allowing them to have a representative present during the setup to observe and provide input regarding the specific sampling point locations. Air sample collection locations will be along the perimeter of the property in the direction of residential area to the north, along Hopewell Street, and to the east, along Chestnut Street. These locations will coincide with the sampling locations associated with the particulate matter sampling.

Birdsboro Materials will record daily wind direction data from local weather stations and/or utilizing an electronic, on-site meteorological station.

Air samples will be collected at these two (2) locations during first shift operating hours, specifically, 7AM to 3PM.

To the greatest extent possible, sampling events will commence following a period of no precipitation for three (3) days and the sampling event will occur during no precipitation events. To the greatest extent possible, NOA sampling will coincide with the proposed particulate matter sampling.

Upon receipt of the analytical data, a summary report will be provided to the Township that can be posted to the Township website for resident review. The Summary Report will document sampling and analytical methods detailed in this Sampling Plan, include an aerial map of the sampling locations, the certificates of analysis from the laboratory and provide the data in tabular format. Analytical results will be compared to standards set by the Pennsylvania Department of Environmental Protection (PADEP) Bureau of District Mining Operations for NOA.

**ATTACHMENT 2**

**Particulate Matter (PM2.5, PM10)**  
**Sampling Plan**

**Birdsboro Materials**  
**H&K Group, Inc.**

Union Township  
Berks County, Pennsylvania

**Plan Prepared by:**  
H&K Group, Inc.  
Engineering & Environmental Services Division  
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**September 2024**

## 1.0 Introduction

The Environmental Protection Agency (EPA), in accordance with the Clean Air Act, originally promulgated primary and secondary National Ambient Air Quality Standard (NAAQS) in 1971. Over the years, the NAAQS have been amended recognizing the risks of adverse health effects associated with smaller particles that are more likely to penetrate deeper in the respiratory system. As a result, the EPA created particle matter standards based upon particles with a diameter of 2.5 microns or less (PM2.5) and based upon particles with a diameter of 10 microns or less (PM10). PM10 is referred to as inhalable coarse particles. PM2.5 is referred to as fine particulate matter.

The NAAQS standards, established by EPA, are as follows:

- PM2.5 annual primary standard: 9 micrograms/cubic meter
- PM2.5 annual secondary standard: 15 micrograms/cubic meter
- PM2.5 24-hour standard: 35 micrograms/cubic meter (primary and secondary)
- PM10 24-hour standard: 150 micrograms/cubic meter (primary and secondary)

Note that the primary standard is human health based and the secondary standard is animal/crop, etc. based.

The Pennsylvania Department of Environmental Protection (PADEP) manages ambient monitoring data stations in geographic areas across the State where PM2.5 and PM10 data is collected. The closest ambient monitoring data station to Birdsboro Materials is in Reading, PA.

Birdsboro Materials proposes to perform two sampling events annually involving two monitoring stations set up in between the quarry and community receptors (residential areas) along the periphery of the quarry boundary within Union Township. The first event will occur in the spring prior to leaf emergence and the second event will occur in the fall following leaf loss. Each event will involve the collection of five (5) 24-hour PM2.5 and PM10 samples which will occur of the course of approximately two (2) weeks.

Collected data will be provided in a summary report comparing the results to the Reading ambient monitoring data station, for the sampling time frame, as well as the NAAQS PM2.5 24-hour and PM10 24-hour standards. The summary report will be provided to Union Township for posting on the Township website and made available for review by Township residents.

### 1.1 Purpose and Scope

Elements of this Plan include procedures and guidance for the following:

- a. Sampling equipment specifications, calibration procedures and operation;
- b. Laboratory designation and analysis methods; and
- c. Setup of sampling/monitoring points and consideration of weather conditions.

Each element is addressed as part of the complete Plan in the following sections.

## **2.0 Sampling Equipment and Procedures**

This section of the Plan describes the types of sampling equipment and deployment, sample media, calibration procedures and operation procedures.

The sampling equipment used for the PM2.5 and PM10 sampling will be battery operated PQ200 Particulate Samplers and temporary tripod monitoring systems. Calibration of the PQ200 will occur at the start of each sampling event in accordance with EPA federal equivalency method (FEM) parameters outlined in Volume II, Part I of the EPA Quality Assurance Handbook for Air Pollution Measurement Systems, May, 2013. Field calibration results will be recorded in field logbooks to document that the calibrations were in accordance with EPA FEM criteria. The sampling equipment set up will involve the installation of PM2.5 and PM10 particulate filters (Teflon filter media) and programming of the PQ200 to collect a 24-hour sample. At the conclusion of each 24-hour sampling event the PM2.5 and PM10 filters will be collected in accordance with EPA criteria and prepared for delivery to an accredited laboratory for analysis.

At the start of the collection of the next 24-hour sample, new PM2.5 and PM10 particulate filters will be installed and the EPA required quality control (QC) flowrate, temperature, pressure, and leak checks will be performed. All QC checks will be performed with National Institute of Standards and Technology (NIST) certified equipment. The PQ200 will be programmed to operate for a 24-hour period following the new filter installations.

To the greatest extent possible, sampling events will commence following a period of no precipitation for three (3) days and the sampling event, specifically the 24-hour collection periods, will occur during no precipitation events. Temperature, precipitation, wind speed and wind direction will be collected and recorded utilizing an electronic, on-site meteorological station.

## **3.0 Laboratory and Analysis**

Air samples will be analyzed via mass measurement (gravimetric analysis) in accordance with 40 CFR 50 Appendix L for PM2.5 and 40 CFR 50 Appendix J for PM10.

## **4.0 Air Sampling Setup**

Prior to initiating a sampling event, Birdsboro Materials will notify the Township in advance of a scheduled sampling event allowing them to have a representative present during the setup to observe and provide input regarding the specific sampling point locations. Air sample collection locations will be along the perimeter of the property in the direction of residential receptors being to the north, along Hopewell Street, and to the east, along Chestnut Street. As described in Section 2.0, the sampling equipment used for the PM2.5 and PM10 sampling will be battery operated PQ200 Particulate Samplers and temporary tripod monitoring systems. The sampling locations will be able to be adjusted between individual sampling events based upon Township input and/or biasing the location in the vicinity of on-site activities, at the time.

Upon receipt of the analytical data, a summary report will be provided to the Township that can be posted to the Township website for resident review. The Summary Report will document sampling and analytical methods detailed in this Sampling Plan, include an aerial map of the sampling locations, the certificates of analysis from the laboratory and provide the data in tabular format, similar to the example on the next page:

**Table 1**  
**H&K Group, Inc. - Birdsboro Materials**  
**PM2.5 & PM10 Monitoring Program Results Summary**

Date	Onsite Meteorological Data		24-Hour, PM2.5 ( $\mu\text{g}/\text{m}^3$ )			24-Hour PM10 ( $\mu\text{g}/\text{m}^3$ )			
	24-hr Average Wind Speed	24-hr Average Wind Direction	Onsite PQ200	NAAQS Standard	PADEP Ambient Monit. Stat. (Reading)	Onsite PQ200	NAAQS Standard	PADEP Ambient Monit. Stat. (Reading)	
4/13/2021	1.91	NE (47.6)	3.04	35	4.39	6.69	150	9.13	

**ATTACHMENT 3**

# **Noise Monitoring Plan**

## **Birdsboro Materials H&K Group, Inc.**

Union Township  
Berks County, Pennsylvania

**Plan Prepared by:**  
H&K Group, Inc.  
Engineering & Environmental Services Division  
2052 Lucon Road  
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Skippack, PA 19474

**September 2024**

## **1.0 Introduction**

Birdsboro Materials proposes to perform two noise monitoring events annually involving twelve (12) monitoring locations spaced approximately five hundred (500) feet apart along the property boundary within Union Township, specifically along Hopewell Street and Chestnut Street. The first event will occur in the spring prior to leaf emergence and the second event will occur in the fall following leaf loss.

Collected data will be provided in a summary report comparing the results to allowable noise levels prescribed in Paragraph 21 of the October 16, 1995 Union Township Agreement. The summary report will be provided to Union Township for posting on the Township website and made available for review by Township residents.

### **1.1 Purpose and Scope**

Elements of this Plan include procedures and guidance for the following:

- a. Monitoring equipment specifications, calibration procedures and monitoring procedures;
- b. Summary Report.

Each element is addressed as part of the complete Plan in the following sections.

## **2.0 Monitoring Equipment and Procedures**

This section of the Plan describes the types of monitoring equipment, calibration procedures and monitoring procedures.

A Metrologger by Metrosonics, db-3080 Model, or equivalent monitoring device, will be utilized to collect noise data, at each monitoring location, for a period of two (2) consecutive minutes. Prior to commencement of a monitoring event, the monitoring device will be calibrated in accordance with manufacture specified procedures.

Measurements will be collected in the “A” weighted scale, i.e. dBA. Data measurements will be recorded in an average reading over the two (2) minute recording intervals as well as a peak reading occurring over that same recording interval. Ambient background noise will be documented, at each monitoring location, during the recording interval. Ambient background noises are typically passing vehicles, wind, nearby lawn power equipment, etc.

Prior to initiating a noise monitoring event, Birdsboro Materials will notify the Township in advance of a scheduled monitoring event allowing them to have a representative present during the event to observe and provide input regarding the specific monitoring locations and also collect data utilizing a Township monitoring device.

## **3.0 Summary Report**

At the conclusion of the monitoring event, the collected data will be provided to the Township in a Summary Report that can be posted to the Township website for resident review. The Summary Report will document monitoring equipment utilized and monitoring procedures detailed in this Monitoring Plan, include an aerial map of the monitoring locations and provide the data in tabular format.