

**Asbestos Monitoring  
and Mitigation Plan  
at  
Hanson Aggregates  
Rock Hill Quarry Site**

**Project No: LLH901997**

**Date: July 6, 2021**

**Prepared for:**

**Hanson Aggregates**

## **1. Introduction**

This Asbestos Monitoring and Mitigation Plan ("Plan") has been prepared on behalf of Hanson Aggregates Pennsylvania LLC (Hanson) to establish asbestos monitoring and mitigation protocols for Hanson's non-metallic mineral quarry and processing plant at the existing site located near 2055 North Rockhill Road, Sellersville, PA 18960 in Bucks County. The primary business of the site is to quarry a diabase rock that is then crushed and sold as construction aggregate.

This Monitoring and Mitigation Plan is intended to address all operations at the Rock Hill Quarry. Hanson's current intention to operate at the quarry is limited to loading and hauling out 500 tons of aggregate material once per calendar year. Where appropriate, this Plan addresses any differences between full quarry operations and the currently planned limited operations, including any 500-ton aggregate removal (hereinafter referred to as "500 Ton Removal Operations") and the five (5) background monitoring days that are to be conducted. In general, Hanson will provide the Pennsylvania Department of Environmental Protection (PADEP) Pottsville District Mining Office notice prior to initiating aggregate processing activities at least five (5) days before commencement of sampling activities and quarry operations. Prior to operation in its initial year following DEP approval, Hanson will not conduct 500 Ton Removal Operations until first collecting ambient air samples on 5 separate occasions as described in this plan. In subsequent years, Hanson will collect one round of perimeter ambient air samples prior to and one round during 500 ton removal operations. When Hanson intends to increase the frequency or extent of its quarry operations, Hanson will notify PADEP in advance. Hanson requests that the PADEP provides a specific contact and method for submitting the notice.

## **2. Description of Facility**

The Rock Hill Site is located in East Rockhill Township, Bucks County, PA. The site includes 109.8 acres authorized under Large Noncoal Surface Mine Permit Number 7974SM1. Currently, the Rock Hill Site generally consists of a water-filled quarry pit, stockpile storage areas, and related erosion and sediment/stormwater control features (e.g., sediment ponds and traps, collection ditches, and other best management practice features). Hanson plans to extract diabase at the Rock Hill Site to produce multiple crushed aggregate products for Hanson customers. If at some point in the future, Hanson plans to operate a portable crushing plant to size the diabase for a salable product or to use a contractor with an existing portable plant, Hanson, or a subcontractor, will obtain the necessary air permits prior to operation of any crushing equipment as required by 25 PA Code 127.621.

## **3. Perimeter Air Monitoring**

To monitor for potential airborne asbestos exposures at or near the Site property lines, Hanson will conduct perimeter air monitoring in accordance with the protocols set forth in this Section 3.

### **3.1 Perimeter Air Sampling Locations and Wind Monitoring**

# Asbestos Monitoring and Mitigation Plan at Hanson Aggregates LLC

Project Number: LLH901997

There are a number of locations along the perimeter of the property at which air samplers can be located. These locations will encompass both upwind and downwind locations without the need to relocate due to possible shifting winds. The same locations will be utilized during mining activity on site.

The general locations of the samplers have been selected based on a number of factors including existing equipment operating locations, historic prevailing winds at the Quarry, site-specific activities connected with quarrying and processing of aggregate products, and locations of potential offsite receptors. Based on the historic Wind Rose plots from nearby NOAA station at the Quakertown Airport (climate data can be obtained from:

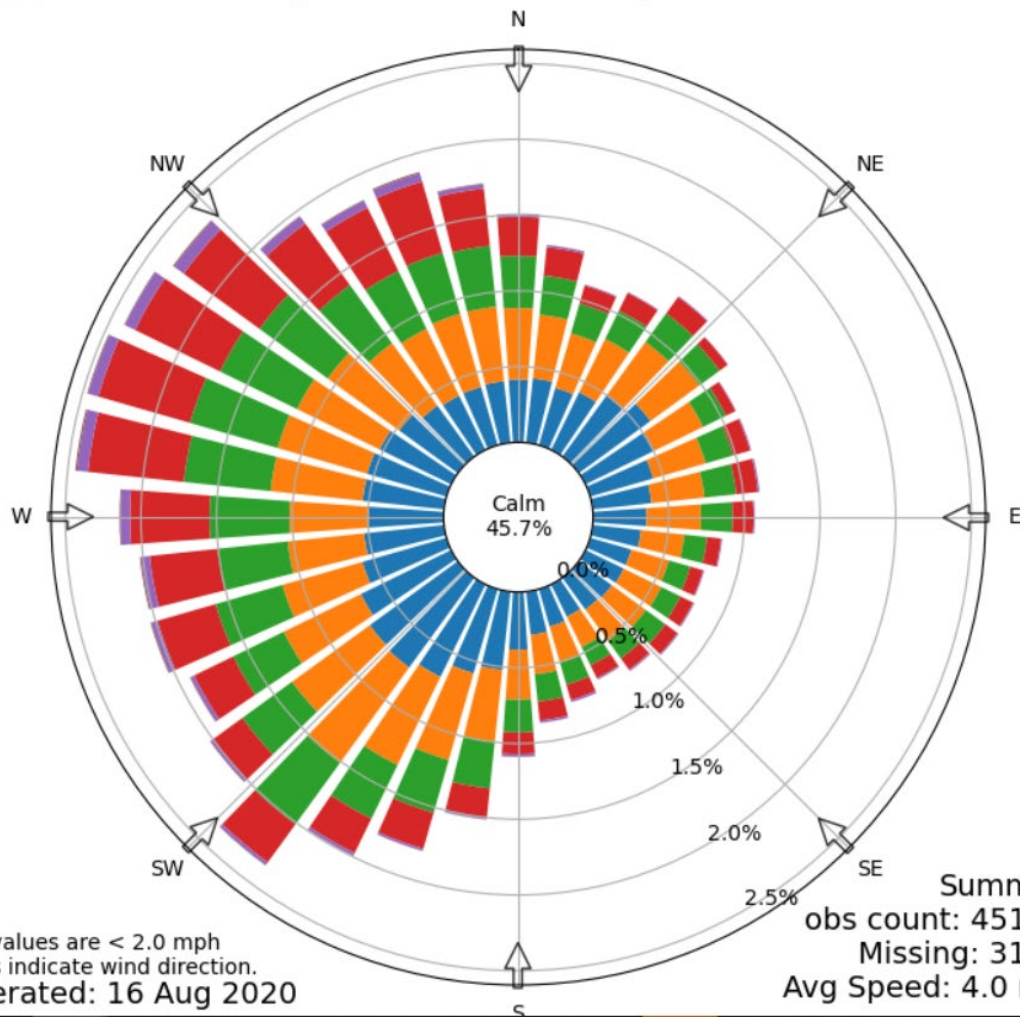
[https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=UKT&network=PA\\_ASOS](https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=UKT&network=PA_ASOS)), the wind generally blows from the west (Figure 1).



[UKT] QUAKERTOWN\_ARPT

Windrose Plot

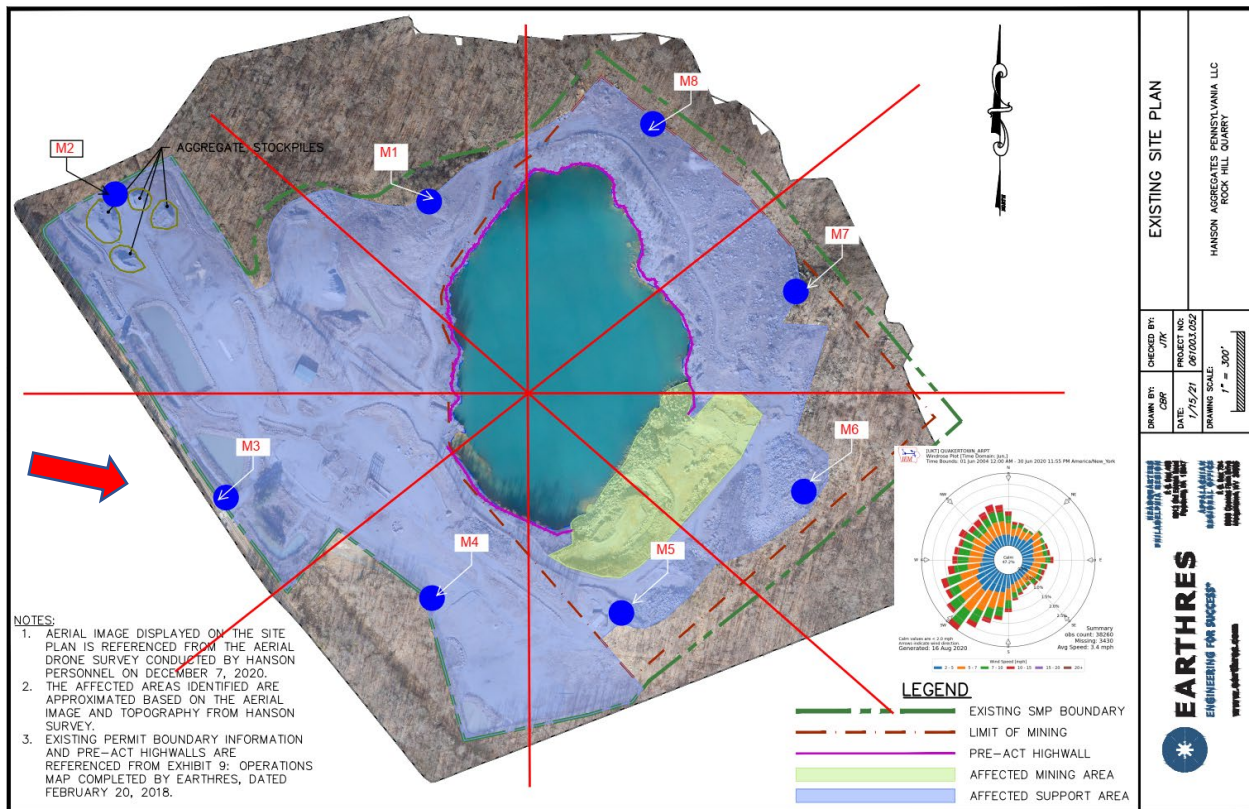
Time Bounds: 01 Jul 2003 12:00 AM - 16 Aug 2020 02:55 AM America/New\_York



**Asbestos Monitoring and Mitigation Plan at Hanson Aggregates LLC**  
**Project Number: LLH901997**

**Figure 1. Wind rose diagram displaying wind direction and speed data from the Quakertown Airport**  
 (Data source: [https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=UKT&network=PA\\_ASOS](https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=UKT&network=PA_ASOS))

Based on this, eight (8) proposed sampling locations are shown in Figure 2. The sampling locations are intended to be fixed, however, the selected locations may change over time based on changes in operations.



**Figure 2. Proposed locations of up to 8 samplers along the general perimeter of the Hanson Aggregates property at Rockhill, PA. The red arrow indicates the approximate direction in which the wind typically blows.**

Unless otherwise approved by the PADEP, wind direction and wind speed will be monitored and recorded continuously at the Site each operating day using an automated weather station (Tempest Weather System, or similar) permanently installed at the Hanson facility. The recorded monitoring data will be maintained for a minimum of one (1) year. Note, as explained in Section 3.2, below, during 500 Ton Removal Operations, Hanson will perform handheld measurements to monitor wind direction and wind speed.

If at any time the automated weather station does not monitor either wind speed or wind direction for a period of greater than 12 hours, then monitoring of wind speed and/or wind direction shall be performed manually and recorded at least twice each operating day until the weather station has been repaired or replaced and has resumed monitoring the wind speed and wind direction.

If the automated weather station stops monitoring or recording the wind speed or wind direction as a result of a malfunction, within one (1) business day of discovery of the malfunction, Hanson will take steps to have the automated weather station repaired or replaced. The weather station shall resume operation within one (1) month unless otherwise approved in writing by the Department.

If significant wind direction changes during a sampling event in any one sampling phase, the time and change in direction will be documented to reflect the change and provide data for review of analytical data. If it is determined that the wind direction has changed, creating a situation where the designated downwind samples are no longer downwind of the active operational areas, this fact will be noted on the sample data forms and the appropriate “new” downwind samples will be identified.

In the unlikely event that, based on professional judgment and knowledge of offsite concerns, sampling areas may be adjusted between perimeter sampling events to provide more representative data and consideration of spatial conditions. All adjustments will be documented properly to show the change and the reason for the change.

### **3.2 Field Sample Collection Methodology**

The perimeter air samples will be collected at the selected locations as indicated in Section 3.1 above and will be collected using low flow air sampling pumps. The perimeter air sampling pumps used for the sample collection will be the Escort Elf air pumps by Zefon International (or equivalent).

Consistent with the analytical methods discussed in Section 3.4, each perimeter pump will be affixed with a cassette (and cowl) that contains either a 25 millimeter (mm) diameter Mixed Cellulose Ester (MCE) filter with a maximum pore size of 0.45 micrometer ( $\mu\text{m}$ ) or a 25 mm diameter capillary pore polycarbonate filter of maximum pore size 0.4  $\mu\text{m}$ . The cassette and cowl shall be fully conductive to reduce fiber loss to the sides of the cassette due to electrostatic attraction. All samples will be collected at an elevation above ground that is typically referred to as the “breathing zone.” This is an area approximately 4-6 ft. above the ground surface. The sampling cassette and filter will be affixed to a sampling post station or tripod that will be used to set the sampling height. At least two (2) field blanks (or 10% of the total samples, whichever is greater) will be collected for each sampling event.

Each perimeter air sampling pump will be operated at approximately 1 to 4 liters per minute (lpm). Sampling times will vary, however, all sample durations will be established to assure an adequate sample volume to achieve a reporting limit of 0.005 f/cc or lower. Pump calibration is to be performed at the beginning and end of a sampling event with a rotameter (DRI-CAL or Digical primary calibrator or equivalent) using the cassette on which the sample is collected. Samples will be collected during the routine operations to provide a representative sample.

## **Asbestos Monitoring and Mitigation Plan at Hanson Aggregates LLC**

**Project Number: LLH901997**

The sample collector will record the pump serial number, sample number, initial flow rate, sample start/end times, sample locations, and final flow rate on the Field Data Sheets (see Attachment 1 – Field Sampling Documents). Sampling Field Data Sheets will be used to record sample collection information, field measurement and field observations obtained during each sampling event. Information in the datasheets will include, at a minimum, the following:

- Location of the sample, site activities being conducted during sample collection;
- Date and time of collection;
- Sampling flow rate and volume;
- Description of temperature, wind direction, wind speed and general weather conditions; and
- The unique sample identification number for each air sample.

Field notes will also be maintained during all sampling events. The notes will include general information, weather conditions, wind direction, etc. (see Attachment 1 – Field Sampling Documents for examples of both the Field Data Sheets and the Field Notes). Field notes will include a site map with the sample locations for each sampling event clearly marked on the map, and references to photographs as needed to document site sampling activities. Any non-routine site activities will also be noted in the field notes (e.g., lawn mowing, grading, etc.).

Data sheets and field notes will be completed, signed, and dated by the field technician.

### **Photographs of Air Sampling Activities**

Photographs will be taken during selected air sampling activities. The photographs will be used to provide backup documentation of sampling activities. A log of the photographs will be recorded and will include the sampling activity and approximate location for each photograph.

### **Chain of Custody Records**

Chain of custody procedures will be used to maintain and document sample collection and possession. During the sampling process, a laboratory Asbestos Chain-of-Custody form provided by the Laboratory will be completed (see Attachment 1 – Field Sampling Documents). The completed Chain-of-Custody Record will accompany all samples and be signed as required as each sample package recipient receives and relinquishes possession of the sample package.

### **Sample Packaging and Shipment**

The air sample filter cassettes will be carefully packaged and delivered to the analytical laboratory using standard practices. Plastic bags and other acceptable packaging containers will be used for sample shipment and convenience. Shipment tracking information will be provided for each sample shipment.

### **Weather and Wind Direction Data**

During full quarrying operations, all field monitoring events, wind speed and wind direction will be monitored from the onsite permanent weather station. The data will be collected as referenced in Section 3.1 and will be reviewed prior to and following each sampling event. The weather station data will be provided as part of the final report at the completion of the project.

### **500-Ton Removal Operations and Background Monitoring:**

- **Field Sampling Collection Methodology:** Prior to the initial 500 ton removal event, samples will be collected on five (5) separate occasions (5 rounds from 8 locations – 40 total samples) in advance of the 500 ton removal event. Sampling duration during 500 ton removal activities will be at least four hours in duration or for the entire duration of material handling during a 500 ton removal event to ensure adequate volume of air is collected to allow for efficient analysis to meet the required 0.005 f/cc reporting limit.
- **Photography of Air Samples:** All photography of air sampling activities in the field will occur during 500 ton removal operations as described for full quarry operations.
- **Chain of Custody Records:** All chain of custody records will be maintained during 500 ton removal operations as described for full quarry operations.
- **Sample Packaging and Shipment:** All sample packaging and shipment practices will be maintained during 500 ton removal operations as described for full quarry operations.
- **Weather and Wind Direction Data:** The sampling locations will remain as described in Section 3.1 to 500 Ton Removal Operations. During the 500-ton removal event and Background Monitoring, a hand-held weather meter such as a Kestra 4500 or equivalent along with data from the nearby air Pennridge Airport Weather Station will be used to evaluate wind direction and wind speed. The wind direction and speed will be recorded approximate every hour.

### **3.3 Sampling Frequency**

During periods of full quarry operation, perimeter monitoring samples will be collected on a bi-monthly basis. Bi-monthly Samples will be collected for an initial 6-month period of full quarry operations. Although daily hours of operation may vary, sampling events will coincide with times the aggregate processing equipment is operating and will not be conducted on closed days except to perform ambient or low activity sampling as described below. Samples will also be collected during blasting activities.

After the initial six-month period of full quarry operations, Hanson may request permission from PADEP to decrease the frequency of sampling or to cease asbestos air monitoring, provided that airborne asbestos fiber levels are consistently less than the corrective action threshold of 0.01

f/cc as determined pursuant to Section 3.4. Hanson shall keep a log of quarry activities that occur during each sampling event.

### **500 Ton Removal Operations**

Due to the infrequent nature of any 500 ton removal events planned for the site, samples will be collected during the following instances:

1. During the entirety of the 500 ton removal activity; and
2. In the initial year of operation, five (5) separate events during idle or low activity conditions prior to the planned activity and that will be used to establish that the ambient asbestos concentrations are less than the action level (0.01 f/cc).
3. Following the initial year, one (1) sampling event during idle or low activity conditions prior to planned activity and that will be used to establish that the ambient asbestos concentrations are less than that action level (0.01 f/cc).

The actual day on which the samples are collected can vary to minimize the possibility of precipitation, which could affect the overall airborne particulates.

Background sampling will be conducted prior to the initial year of operation on five (5) separate occasions. The sampling will be conducted every two weeks, unless weather dictates otherwise, and shall avoid precipitation events that could adversely impact data collection. In subsequent years, Hanson will perform one (1) round of sampling prior to operation.

Hanson or its designated contractor will notify PADEP at least five (5) working days prior to initiating each air sampling event conducted pursuant to this Plan so that PADEP representatives have an opportunity to collect samples at the same locations during the same time period. Hanson or its designated contractor will facilitate PADEP's sample collection efforts by providing access to sampling locations and sufficient time and space to sample. Once regular monitoring is underway, the Department will be notified of any unusual changes in the sampling via electronic mail. In addition, PADEP will be notified as soon as possible if any sampling event has been cancelled along with the reason for the cancellation.

In the event that background samples collected herein exceed the established action threshold, Hanson will perform corrective actions as described in Section 3.6, as necessary.

### **3.4 Analytical Methods**

The analytical methods and laboratory analysis for asbestos in air analysis to be utilized as part of this plan shall be those described in ISO 10312-2019-10 "Ambient Air – Determination of Asbestos Fibers – Direct Transfer Transmission Electron Microscopy Method", as modified by Page C-3 of EPA's "OSWER Directive #9200.0-68, September 2008, Framework For Investigating Asbestos-Contaminated Superfund Sites", which states that "*Under the ISO method, two specific counting schemes are detailed. The first scheme is more general and allows for the counting of*



## Asbestos Monitoring and Mitigation Plan at Hanson Aggregates LLC

Project Number: LLH901997

*fibers that are 0.5  $\mu\text{m}$  in length or greater, and have aspect ratios of 5:1 or greater. In routine practice, TEM is able to resolve fibers down to approximately 0.1  $\mu\text{m}$  in width, as compared to the resolution for routine PCM (0.25  $\mu\text{m}$ ). Therefore, short thin fibers that would not be detected using PCM will be detected using TEM under the general counting scheme. EPA recommends modification of the aspect ratio to 3:1 for this counting scheme."*

Although the above methods must be used for all air samples, Hanson may, at its discretion, concurrently analyze air samples using alternative methods as follows, in order to compare the results of the methods. The allowable alternative methods which may be used for comparison shall include PCM in accordance with either the Occupational Safety & Health Administration (OSHA) Method ID-160 (see 29 C.F.R. 1910.1001, Appendix B) or the National Institute for Occupational Safety and Health (NIOSH) Manual for Analytical Methods (NMAM), Method 7400, Asbestos and other Fibers by PCM. These PCM methods are used to count all visible fibers, including non-asbestos fibers, that are longer than 5  $\mu\text{m}$  with a 3:1 aspect ratio or greater.

If PCM analysis detects potential fiber concentrations in excess of 0.01 fiber/cc, then NIOSH Method 7402, Asbestos by TEM, shall be employed to ascertain the mineralogy of the fibers in the sample. TEM analysis is used to identify and differentiate asbestos fibers from non-asbestos fibers.

If Hanson chooses to do comparative analyses with PCM/TEM NIOSH 7402, and if Hanson after a period of three years of such analyses, concludes that the results of these analyses do not significantly differ from the results of the required ISO 10312 sampling, Hanson may petition DEP to discontinue the ISO 10312 analyses in favor of PCM/TEM NIOSH 7402 analyses.

During the analysis of air samples by TEM, sufficient filter area will be analyzed to achieve a reporting limit (i.e., analytical sensitivity) of 0.005 f/cc or lower.

If any TEM method of asbestos analysis confirms asbestos fiber concentrations in excess of 0.01 fiber/cc in any sample, then the reporting and corrective action requirements set forth in Section 3.6 are triggered. For the purposes of determining whether corrective action is necessary, this analysis will only count asbestos fibers that exceed 5 micrometers in length.

In the unlikely event that any air sampling filters are determined to be overloaded with particulate and cannot be read by ISO 10312, Hanson shall report this to DEP within 7 days of the determination, and shall propose corrective action of re-analyzing the filters using ISO 13794 (as modified by Page C-3 of EPA's OSWER Directive #9200.0-68, described above). During full quarry operations, resampling may be possible. Due to the infrequent nature of 500 ton removal activity resampling may not be feasible. Hanson will coordinate with DEP in the event that air sampling filters are determined to be overloaded with particulate following 500 Ton Removal Operations.

### **Analytical Laboratory**

All samples will be analyzed by an analytical laboratory selected from the list of asbestos analytical laboratories that are part of the National Voluntary Laboratory Approval Program

## **Asbestos Monitoring and Mitigation Plan at Hanson Aggregates LLC**

**Project Number: LLH901997**

(NVLAP) and are accredited by the American Industrial Hygiene Association (AIHA) and by the Department of Environmental Protection – Bureau of Laboratories. Any accredited laboratory that meets the requirements listed above may be used for sample analysis.

Samples collected during full quarry operations will be analyzed based on standard 10 business day turnaround time. Samples collected during 500 ton removal activities will be requested to be analyzed on an expedited basis. When possible, results will be provided from the laboratory to Hanson within five business days of sample receipt. When expedited turnaround of results is not possible, results should be provided from the laboratory to Hanson as quickly as is possible.

### **Quality Control**

A quality control (QC) program will be implemented to assure data quality. The field program includes the use of blanks and duplicate samples. Should any sample fail at a particular location, that sample at that location will be resampled within two weeks.

### **Field Blanks**

At least 2 field blanks (or 10% of the total number of samples collected, whichever is greater) will be submitted with each set of samples. A field blank is a new sampling cassette that is opened on site during the sampling period, kept uncovered for at least 30 seconds, and then is closed and sealed for transport to the laboratory. The purpose of the field blank is to document the possible contamination of the filter media that could occur as a result of handling the samples in the field.

### **Duplicate Samples**

Duplicate samples may be collected if directed by Hanson or DEP to evaluate the reproducibility of sampling and analysis. Duplicate samples will be collected, stored and transported in the same manner as the actual samples. A separate number will be assigned to each duplicate, and all duplicates will be submitted blind to the laboratory. For this monitoring program, duplicate sampling will be conducted through the collection of co-located samples collected during the same sampling interval.

### **Field Equipment**

The following equipment will be utilized for this sampling:

- Air sampling pumps (personal or low volume pumps).
- Asbestos sample filter cassettes with filters (25 mm, 0.45 µm pore, MCE).
- Air pump calibration equipment.
- Quart and gallon size resealable bags.
- Sample transport containers and packing material.
- Additional supplies as needed including health and safety equipment.
- Hanson Permanent Weather Station.

### **500 Ton Removal Operations:**

- Analytical Methods: the analytical methods for full quarry operations will be applied as described to any 500 ton removal.
- Analytical Laboratory: the analytical laboratory provisions for full quarry operations will be applied as described to any 500 ton removal.
- Quality Control: the quality control provisions for full quarry operations will be applied as described to any 500 ton removal.
- Field Blanks: the field blank provisions for full quarry operations will be applied as described to any 500 ton removal.
- Duplicate Samples: the duplicate sample provisions for full quarry operations will be applied as described to any 500 ton removal.
- Field Equipment: the field sample provisions for full quarry operations will be applied as described to any 500 ton removal, except that Hanson will perform handheld measurements to monitor wind and weather instead of with a permanent weather station. A permanent weather station will be installed prior to commencing full quarry operations.

### **3.5 Recordkeeping and Reporting**

All records and documents related to the airborne asbestos monitoring program will be maintained by Hanson for at least five (5) years and will be made readily available to PADEP upon request. Field Data Sheets and Field Notes will be completed, signed, and dated by the recorder. All logs will be written with waterproof ink. Corrections to data entered will be made by crossing out the error with a single horizontal line, initialing and dating the correction, and entering the correct information. Crossed-out information shall be readable. Photographs will be taken during selected air sampling activities. The photographs will be used to provide documentation of sample locations, site activities, etc. that are pertinent to the asbestos monitoring task. A log of the photographs will be recorded and will include the sampling activity and approximate location for each photograph.

All laboratory reports and associated data sheets, as well as progress reports and other documentation related to perimeter air sampling, will be properly maintained for five (5) years. Copies of the reports will be submitted to DEP quarterly, ninety (90) days after the end of each quarter. All samples analyzed will be retained by the laboratory for at least one (1) year from the date of analysis to allow for follow-up testing should the need arise.

Perimeter air monitoring reports submitted to PADEP will include a summary of the analytical results for all samples collected and analyzed during the reporting period; copies of applicable chain of custody sheets and applicable field sampling logs; and a written report detailing any investigative actions or corrective measures that may have been taken during the reporting

period in response to a result exceeding 0.01 asbestos fibers/cc (counting only asbestos fibers that exceed 5 micrometers in length).

Analytical reports provided to Hanson by the analytical laboratory will be sent to PADEP via email within 24 hours of receipt, whenever possible, but no later than 48 hours of receipt.

**500 Ton Removal Operations:** the recordkeeping and removal provisions for full quarry operations will be applied as described to any 500-ton Removal operations.

### **3.6 Corrective Actions**

For the purposes of determining whether corrective action is necessary, Hanson will only count asbestos fibers that exceed 5 micrometers in length. If TEM analysis confirms asbestos fiber concentrations in excess of 0.01 fiber/cc in any sample, Hanson will undertake the following corrective measures to abate any potential harmful migration of asbestos fibers:

1. Report the results immediately to the Hanson site manager and Senior Director of Operations. Hanson will also notify the PADEP within 24 hours of receipt of the TEM analysis results.
2. Daily air sampling of that location will commence for 7 days.
3. Investigate the potential cause of the results. The investigation will include at least the following elements:
  - a. Review of operational activities that were occurring during sampling,
  - b. Confirmation that dust suppression systems are fully operational, and
  - c. Quality Assurance and Quality Control review of all sampling and laboratory equipment and procedures.
4. Hanson will take immediate corrective measures. These corrective measures may vary based on the location of the sample, and findings of the investigation. The investigation will begin as soon as the result is confirmed and will be completed in an expedited manner. The corrective actions may include investigation of the source of any airborne asbestos, extra dust suppression measures, cleanup, repairs or modifications to systems and controls, or temporary cessation of operations.
5. Within seven calendar days of receipt of the TEM analysis results from the 7-day daily air sampling in 2) above, submit to PADEP a written report of the sampling results, and a plan and schedule of steps that have been or will be taken to identify and mitigate the source of the airborne asbestos, and to re-monitor ambient air at the facility perimeter. This written report should also include the results of the most recent EPA Method 100.1 water sampling described in Section 5.

6. Hanson will record the results and all corrective measures taken at the site in a permanent written log.

**500 Ton Removal Operations:** the corrective action provisions for full quarry operations will be applied as described to any 500-ton Removal operations, except for 3.6(2). In the event that the perimeter background samples collected during a removal event exceed the established action level, Hanson will perform an additional round of perimeter sampling (1 round of 8 samples) and will perform necessary corrective actions as prescribed by Section 3.6.

#### **4. Activity-Based Air Monitoring**

On a quarterly basis, unless otherwise approved in writing by PADEP, Hanson will collect and analyze air samples during each of the following operations using the same collection and analysis methods described above in Sections 3.2 and 3.4:

- Immediately downwind vicinity of blasting, if blasting is conducted during the quarter.
- Near drilling machinery during operations, if drilling is conducted during the quarter.
- Next to internal quarry roads on which haul trucks travel.
- Near crushing/processing machinery during operations.

If TEM analysis confirms asbestos fiber concentrations in excess of MSHA asbestos standard (0.1 f/cc) in any sample, Hanson will (1) notify PADEP within 24 hours of receipt of the TEM analysis results, and (2) within three calendar days, conduct perimeter air monitoring in accordance with Section 3 above.

Hanson will maintain records associated with quarterly activity-based monitoring in accordance with Section 3.5.

Hanson may petition DEP after 3 years of operation to discontinue activity-based monitoring required under this section.

**500 Ton Removal Operations:** In the event that the perimeter background samples collected during a removal event exceed the established action level, Hanson will perform an additional round of perimeter sampling (1 round of 8 samples) and will perform necessary corrective actions as prescribed by Section 3.6.

#### **5. Dust Suppression Water Source Monitoring**

On an annual basis, unless otherwise approved in writing by PADEP, Hanson will collect a sample from dust suppression water source for asbestos analysis. This sample will be collected and analyzed in accordance with EPA Method 100.1, Analytical Method for Determination of Asbestos Fibers in Water. Hanson will maintain records of annual EPA Method 100.1 water analyses for at least five (5) years, and will make these records available to PADEP upon request.

Furthermore, if perimeter air sampling triggers corrective action requirements in accordance with Section 3.6, then Hanson will submit the results of the most recent EPA method 100.1 analyses to PADEP in accordance with Section 3.6.

**500 Ton Removal Operations:** the dust suppression water source monitoring provisions for full quarry operations will be applied as described to any 500-ton Removal operations.

## **6. Asbestos Avoidance Measures**

### **6.1 Mineral Identification and Management**

Hanson has established and implemented a Mineral Identification and Management Guide. This guide defines the company's procedures to properly identify and manage any materials that meet the guide's definition of "Protocol Mineral Fibers." The Guide covers a number of topics, including the following:

- Identification and mapping of suspect zones and structures of interest.
- Geologic field inspections by a trained geologist.
- Shot rock (muck) pile inspections for suspect minerals.
- Training requirements for key site personnel.
- Proper management and disposal of suspect materials if identified.
- Recordkeeping requirements.

In addition to implementation of the Protocol Mineral Fibers protocols set forth in the Guide, Hanson will also conduct asbestos sampling and analysis of settled dust samples in accordance with the following procedures:

1. Hanson will collect a minimum of one composite sample per month of material deemed non-suspect under the Guide.
2. Samples will be analyzed by Polarized Light Microscopy (PLM) using EPA Method 600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials. All visible elongate mineral particles (EMPs) (those identified as asbestos fibers and cleavage fragments) with aspect ratios greater than 3:1 must be counted.
3. If PLM analysis does not detect asbestos fibers in the sample, the sample will be analyzed by TEM to verify results using EPA Method 600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials. All visible EMPs (those identified as asbestos fibers and cleavage fragments) with lengths greater than 0.5  $\mu\text{m}$  and aspect ratios greater than 3:1 must be counted.

Hanson will report the results of these analyses to PADEP on a quarterly basis.

**500 Ton Removal Operations:** the mineral identification and management provisions for full quarry operations will be applied as described to any 500-ton Removal Operations, except that Hanson will only perform settled dust analysis during aggregate removal operations.

## **6.2 Emissions Mitigation Plan**

Hanson implements a number of practices that are consistent with the industry standards and regulatory requirements in order to control emissions at the Rock Hill site. All control strategies will be located at the site prior to any commencing of operations. Below are the largest potential sources of dust emissions at the site, as well as the practices utilized at Rock Hill to control them. Hanson will utilize these practices as described below, and also as necessary in order to maintain compliance with 25 Pa. Code §123.2 and §123.1(c):

### **Vehicle Traffic:**

Hanson will utilize a dedicated street sweeper to clean paved plant roads and public roadways near site entrances as needed. Hanson's street sweeper is a state-of-the-art sweeper utilizing a broom system and water sprays to collect debris while minimizing dust generation. Hanson will maintain a log of the time and day when the street sweeper is used.

Site entrance is paved to reduce tracking and improve sweeping efficiency.

When operating, Hanson will conduct a daily visual inspection for material tracked onto public roads. If material has accumulated on a public road, Hanson will clean the road promptly or, at minimum, by the end of the workday. During full quarry operations, one camera will be installed to monitor the entrance of the quarry to allow the operator to observe any accumulated material.

Hanson will install a truck wash utilizing spray nozzles and pressurized water to remove loose or dusty material from loaded trucks leaving the site through the main gate.

All trucks transporting materials off-site will be covered with tarps or other devices.

Hanson operates and maintains a minimum of one truck equipped with water sprays to control dust from roadways.

A water truck will be equipped with a water cannon to spray hard-to-reach areas of stockpiles during times of need.

Posted vehicle speed limits on haul roads in quarry and stockpile areas to no more than 15 miles per hour

### **Haul Roads:**

Application of water or commercial dust suppressing liquids during extremely dry or windy conditions and in winter months as needed.

## **Asbestos Monitoring and Mitigation Plan at Hanson Aggregates LLC**

**Project Number: LLH901997**

Roads are resurfaced/regraded as needed to maintain a clear and safe working surface and thereby reducing dust generation.

### **Stockpiles and material handling:**

Limit the size and disturbance of stockpiles to the minimums necessary.

Storage piles will be wetted using water sprays as necessary to control emissions. Stock and working piles will be adequately wetted or controlled using dust palliatives or suppressants, wind berms, or breaks during the addition and removal of material.

Hanson may occasionally apply surface binders to stockpiles of fines in order to control particulate emissions from areas that will be temporarily inactive and may be subject to wind erosion.

Hanson may wet materials to be handled prior to loading trucks. The drop height will be minimized as safety permits. Trucks will be loaded on the leeward side of the storage pile. The facility will install a wind sock to easily identify wind direction.

Dust will be controlled with wet sprays and/or dust collection systems in accordance with best available technology requirements on all conveyors/transfer points.

Hanson will ensure that material being excavated, crushed, screened, loaded, transferred or conveyed does not result in visible dust emissions exceeding 40 CFR Part 60, Subpart OOO limits for applicable sources.

Overburden will be wetted (if necessary) prior to movement or handling to minimize dust generation.

Wooded buffers and/or vegetated earthen berms surround the quarry. These buffers and berms within Hanson's control will remain in place for the life of the mining operation.

All efforts are to be made to limit stripping of overburden to the spring and winter months, and/or timed to be during or soon after precipitation events, when soil conditions are not conducive for the generation of large amounts of dust.

Mining activities are primarily within a pit surrounded by mining faces with the majority of rock disturbance occurring at the bottom of the faces. The overlying benches and perimeter faces help screen the quarrying activity from wind, thereby reducing wind velocity and associated dust generation. The pit design also helps to confine dust within the quarry.

The stone has a natural moisture content that helps bind finer particles together and minimizes the generation of dust.



**Crushing and Sizing Equipment:**

Hanson will submit air permit applications prior to installation of aggregated processing equipment. Air Pollution Control devices will be installed and operated according to PADEP Best Available Technology requirements, coupled with work practices, inspection, and source observation.

Shot rock and processed aggregate spillage will be cleaned up as needed to minimize creation of excessive amounts of dust and to maintain general housekeeping in the quarry. The frequency of cleaning up spillage will vary depending upon how much material is running through the plant and how much product is being produced, loaded, and sold on a given day.

Conveyors will have belt scrapers where necessary to keep belts clean and reduce the amount of spillage from the conveyors. As a general practice, conveyors will not be run empty for long time periods. If there are prolonged periods when no material is being conveyed, the belts will be turned off.

**Drill Rigs:**

On-board dust collection and/or water sprays on drill rigs will be used to limit dust generation. .

A drill shroud is utilized at the ground level to control fugitive emissions from drilling activities.

**Blasting:**

Prior to blasting, all drill cuttings will be removed from around the drill holes. The use of dust or screenings as stemming for blast holes will not be permitted. Coarse aggregate will be used for stemming.

To minimize the dust offsite migration, the blast area will be pre-wetted to minimize the release of surface dust and fines, scheduling blasts only under favorable meteorological conditions. In addition, smaller blasts can be employed when possible.

**Training and Inspections for Visual Emissions:**

Key plant personnel will be trained to conduct visual observations of NOA, for fugitive emissions as well as opacity readings on emissions sources to ensure they are operating properly.

Hanson conducts preventative maintenance of operational and dust collection equipment to ensure the timely replacement of worn components.

**500 Ton Removal Operations:**

- Emissions Mitigation Plan: All equipment to be utilized for dust suppression will be verified to be on site and in usable condition prior to commencement of any full quarry operation or 500 ton removal activity
- Vehicle Traffic: the vehicle traffic plan provisions for full quarry operations will be applied as described to any 500-ton Removal operations, except that a camera to monitor the entrance will not be installed until full quarry operations commence.
- Haul Roads: the haul road provisions for full quarry operations will be applied as described to any 500-ton Removal operations.
- Stockpiling and Material Handling: the stockpiling and material handling provisions for full quarry operations will be applied as described to any 500-ton Removal operations.
- Crushing and Sizing Equipment: the crushing and sizing equipment provisions for full quarry operations will be applied as described to any 500-ton Removal operations.
- Drill Rigs: the drill rig provisions for full quarry operations will be applied as described to any 500-ton Removal operations.
- Blasting: the blasting plan provisions for full quarry operations will be applied as described to any 500-ton Removal operations.
- Training and Inspection for Visual Emissions: the training and inspection for visual emissions provisions for full quarry operations will be applied as described to any 500-ton Removal operations.

# Attachment 1

## Field Sampling Documents



# AIR SAMPLE DATA SHEET

Date _____		Technician _____		Page _____ of _____			
Project # _____		Calibration # _____					
Barametric Pressure _____	Temperature _____ Humidity _____ Altitude _____	Start Time (Clock)	Stop Time (Clock)	Elapsed Time HR-MIN	Time Sampled Minutes	Flow Rate L/MIN (Start/Stop)	Volume Sampled Liters
Assigned Sample #	Pump No.					/	
Location	Height	Observations/Comments				/	
Filter <input type="checkbox"/> PC <input type="checkbox"/> MCE	Sample <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Personal SS#					Total Volume	
Assigned Sample #	Pump No.					/	
Location	Height	Observations/Comments				/	
Filter <input type="checkbox"/> PC <input type="checkbox"/> MCE	Sample <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Personal SS#					Total Volume	
Assigned Sample #	Pump No.					/	
Location	Height	Observations/Comments				/	
Filter <input type="checkbox"/> PC <input type="checkbox"/> MCE	Sample <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Personal SS#					Total Volume	
Assigned Sample #	Pump No.					/	
Location	Height	Observations/Comments				/	
Filter <input type="checkbox"/> PC <input type="checkbox"/> MCE	Sample <input type="checkbox"/> Indoor <input type="checkbox"/> Outdoor <input type="checkbox"/> Personal SS#					Total Volume	

# Request for Environmental and IH Laboratory Analytical Services

<b>ATTENTION TO:</b>					Purchase Order No.:					Client Job No.:																																							
<b>Lab Use Only</b>	Project No.:				Client No.:				<b>Date Results Needed</b>	Rush Charges Authorized? (check one)					<input type="checkbox"/> YES <input type="checkbox"/> NO																																		
	Date Logged In:				Logged In By:																																												
<b>Report Results To</b>	Name:														<b>Drinking Water Sample Only</b>					Sample Purpose: Information <input type="checkbox"/> Regulatory <input type="checkbox"/> Accreditation (please list below):																													
	Company:																			System ID #:																													
	Address:														DOH Source #:																																		
	City, State, Zip:														Multiple Sources #s:																																		
	Phone: Fax:														Sample Purpose: A <input type="checkbox"/> B <input type="checkbox"/> Other <input type="checkbox"/>																																		
	Email Results To:														<b>Chemistry Analysis Key</b>					<b>Preservation:</b> Unpres H <sub>2</sub> SO <sub>4</sub> 4 °C HNO <sub>3</sub> Other <b>Matrix:</b> WW=Wastewater GW=Groundwater S=Soil/Sludge E=Extract <b>Container:</b> P=Plastic G=Glass W=Wipe A=Air (filter or tube)																													
Name: <input type="checkbox"/> If a hard copy of invoice is needed, check here Company: Email: Address: City, State, Zip: Phone: Fax:																																																	
<b>Invoice To</b>															<b>Analysis Requested</b>					Pres. Upon Receipt (Y/N)					Preservation					Matrix					Container Type					pH					No. Containers				
<b>Special Instructions</b>																																																	
<b>Client Sample ID</b>			<b>Sample Description</b>			<b>Sample Date</b>	<b>Sample Time</b>		<b>Wipe Area / Air Volume</b>	<b>Sample Location (Please specify if NY state)</b>											Pres. Upon Receipt (Y/N)	Preservation	Matrix	Container Type	pH	No. Containers																							
							<b>Start</b>	<b>Stop</b>																																									
<b>Chain of Custody</b>		Relinquished By (Signature):				Date:				Time:				<b>Chain of Custody</b>		Received By (Signature):				Date:				Time:																									
		Relinquished By (Print Name):				Relinquished To:										Received By (Print Name):				Relinquished To:																													
		Company Name:				Method of Shipment:										Company Name:				Method of Shipment:																													
<b>Chain of Custody</b>		Relinquished By (Signature):				Date:				Time:				<b>Chain of Custody</b>		Received By (Signature):				Date:				Time:																									
		Relinquished By (Print Name):				Relinquished To:										Received By (Print Name):				Relinquished To:																													
		Company Name:				Method of Shipment:										Company Name:				Method of Shipment:																													

Pennsylvania - HQ  
350 Hochberg Road  
Monroeville, PA 15146

Washington  
Columbia Basin Analytical Laboratories  
2710 North 20th Avenue  
Pasco, WA 99301

724.325.1776 Phone  
724.733.1799 Fax

509.545.4989 Phone  
509.544.6010 Fax

