



December 27, 2021

Richard E. Tallman, PE  
Environmental Engineer, Bureau of District Mining Operations  
Pennsylvania Department of Environmental Protection  
5 West Laurel Boulevard  
Pottsville, PA 17901

**Re: Rock Hill Quarry, East Rockhill Township, Bucks County, PA**

Dear Mr. Tallman:

Attached please find a technical memorandum of December 27, 2021 from Erskine Environmental Consulting (EEC): "Response to Hanson and RJLG letters: Hanson, December 6, 2021 Elevated Review Technical Deficiencies Application No. 7974SM1C10 Rock Hill Quarry East Rockhill Township, Bucks County Response to DEP October 21, 2021 Comment Letter".

REPA notes that, once again, Hanson provides inadequate responses to PA DEP's Technical Deficiency notices. Hanson's repeated efforts to evade the proper testing, monitoring and handling of Naturally Occurrence Asbestos (NOA) at the Rockhill Quarry threatens the future health of the community and surrounding areas that would use any asbestos contaminated stone. At what point does PA DEP acknowledge that Technical Deficiencies are not being addressed by Hanson, and that the health of residents is at risk if Hanson is allowed to operate the Rockhill Quarry without addressing these deficiencies?

REPA calls on PA DEP to do its job and "protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment". End the delays, deny Hanson's permit and permanently cease all operations at the Rockhill Quarry.

Respectfully,

Rockhill Environmental Preservation Alliance, Inc.

cc: The Honorable Thomas Wolf, Governor of Pennsylvania  
The Honorable Patrick McDonnell, Secretary, PA-DEP  
The Honorable Brian Fitzpatrick, U.S. Representative PA-01  
The Honorable Steven Santarsiero, 10<sup>th</sup> Senatorial District  
The Honorable Craig Staats, PA's 145<sup>th</sup> Legislative District  
The Honorable Diane Ellis-Marseglia, Chair, Bucks County  
Board of Commissioners  
The Honorable Robert Harvie, Jr., Vice Chair, Bucks County  
Board of Commissioners  
The Honorable Gene DiGirolamo, Bucks County Board of  
Commissioners  
Steven Baluh, P.E  
Marianne Morano, East Rockhill Township Manager  
Megan Banis-Clemens, Pennridge School District, School  
Board Member  
Amiee Bollinger PADEP  
Virginia Cain, PADEP  
Robert Fogel, PADEP  
Erika Furlong, PADEP  
Craig Lambeth, PADEP  
Shawn Mountain, PADEP  
Patrick Patterson, PADEP  
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John Stefanko, PADEP  
Daniel Koury, PADEP

# ***Erskine Environmental Consulting***

*Geologic Investigations Hazardous Materials Naturally Occurring Asbestos*

## **Technical Memorandum**

December 27, 2021

**Subject:** Response to Hanson and RJLG letters:

Hanson, December 6, 2021  
Elevated Review Technical Deficiencies Application No. 7974SM1C10  
Rock Hill Quarry  
East Rockhill Township, Bucks County  
Response to DEP October 21, 2021 Comment Letter

Erskine Environmental Consulting, Inc. (EEC) herein provides its comments on the response to DEP's technical deficiencies prepared by Hanson Aggregates Pennsylvania LLC, as cited above.

To assist the reader in matching responses with comments, the Hanson document was imported into WORD format, and the responses were inserted beneath the relevant comment text. EEC responses are colored red, and each response refers to the text that is colored black above the response. Please excuse formatting issues that accompanied the reproduction into WORD format from PDF format.

Please contact me if you have any questions.



Bradley G. Erskine, Ph.D., PG, CEG, CHG, CAC  
Erskine Environmental Consulting



**SENT VIA E-MAIL AND FIRST CLASS MAIL**

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December 6, 2021

Richard Tallman, P.E.

Pottsville District Mining Office  
Pennsylvania Department of Environmental Protection  
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Pottsville, PA 17901

**Re: Elevated Review Technical Deficiencies Application No. 7974SM1C10  
Rock Hill Quarry  
East Rockhill Township, Bucks County  
Response to DEP October 21, 2021 Comment Letter**

Dear Mr. Tallman:

Hanson Aggregates Pennsylvania LLC ("Hanson") provides this response to your letter dated October 21, 2021, requesting additional information in connection with Rock Hill Quarry (the "Quarry").

**1. Technical Deficiency 4:**

**4. Module 10.1: Equipment and Operation Plan: "Annual Removal of 500 tons.":  
§77.452, §77.455, §77.404(5)**

**According to sampling results provided by Hanson in their August 14, 2020, Additional Sample Analysis report, seven (7) of the sixteen (16) aggregate samples showed results ranging from 0.11% to 0.52% by weight using ISO10312, 2019-10, Annex C counting rules. Considering the limited data provided by the sample set, please explain:**

DEP Comment: Please provide the "explicit" statement in ISO 10312 that you refer to in the above italicized and bolded passage in your response.

RESPONSE: Hanson stated in its July 6, 2021 response to DEP's April 12, 2021 Technical Deficiency letter that "ISO 10312 states explicitly that it cannot differentiate asbestiform from non-asbestiform morphologies of the amphiboles in the fibers collected

from an air sample.” The basis for this statement comes directly from the ISO 10312 guidelines:

This document specifies a reference method using transmission electron microscopy for the determination of airborne asbestos fibres and structures in a wide range of ambient air situations, including the interior atmospheres of buildings, and for a detailed evaluation for asbestos structures in any atmosphere. The method allows determination of the type(s) of asbestos fibres present and also includes measurements of the lengths, widths and aspect ratios of the asbestos structures. *The method cannot discriminate between individual fibres of asbestos and elongate fragments (cleavage fragments and acicular particles) from non-asbestos analogues of the same amphibole minerals.*

See International Organization for Standardization Method 10312: Ambient Air – Determination of Asbestos Fibres – Direct Transfer Transmission Electron Microscopy Method (Second Edition, 2019-10), Scope, at p. 1 (emphasis added).

As stated by Hanson in its October 29, 2021 response letter, although ISO 10312 does not necessarily discriminate between asbestiform and elongated/cleavage fragments of other non-asbestiform structures, ISO 10312 does not remove or prohibit the differentiation of asbestiform from non-asbestiform fibers and doing so would be an acceptable “optional procedure” to be documented in a test report. Differentiating asbestiform fibers from cleavage fragments would be acceptable under ISO 10312 so long as the differentiation is described and documented in the report according to Section 14.g of the ISO 10312 Method.

As stated by Hanson, differentiating cleavage fragments from asbestiform fibers is prohibited under ISO 10312. The method requires reporting asbestos as determined by the procedures that are provided in the test method, and test results should not be modified by supplementary procedures that are not provided in the test method. Adding procedures that are not included in a test method is contrary to the central core of a standardized test method is improper and illogical.

If RJLG wishes to apply an undocumented test method to the samples as an independent test, the results should be provided in an independent report, and the purpose and procedures should be clearly disclosed. Under no circumstances should the ISO reporting of asbestos be modified based on an independent procedure, particularly one that is considered proprietary and cannot be evaluated by a client. If modifications to procedures within the test method are applied, or additional procedures are applied, the test cannot be characterized as conforming to the test method.

## **2. Technical Deficiency 4.c**

**4 c.: Explain how receivers of the aggregate will be advised of the asbestos content of the aggregate and precautions they will be required to take concerning the use of the aggregate.**

DEP Comment: Please provide the material safety data sheet that you intend to use to comply with the OSHA and MSHA Hazard Communication Standards.

RESPONSE: Please see Attachment A for a copy of the Safety Data Sheet to be used with the sale of products from the Quarry.

The Safety Data Sheet submitted as Appendix A does not advise receivers that they are purchasing a material that contains asbestos. For the purposes of disclosure, Hanson used the term “actinolite, asbestiform” rather than indicating what the hazardous particle is: asbestos. The hazardous particulate of concern described under CAS 1332-21-4 is asbestos, and this defined particulate name should not be replaced with another descriptive term.

Highlighted in yellow in Attachment A, below, are references to the term “actinolite, asbestiform”. Highlighted in blue are references to the correct term, “asbestos”. DEP will note that the term asbestos is used only where state regulations are described, but not used for the accurate identification of the particulate that resides in the material. CAS 1332-21-4, the TLV, PEL, ISO10312 (and all asbestos test methods), and the OSHA Standard (and all federal regulations) define the constituent of concern as asbestos.

The use of the term “actinolite, asbestiform” does not communicate to a recipient that the diabase product contains asbestos. “Actinolite, asbestiform is not a synonym of asbestos. Recipients who are not well-versed in mineralogical nomenclature cannot be expected to equate “actinolite, asbestiform” with the regulatory-defined term “asbestos”. Contractors are expected to know that asbestos is regulated, and are required to comply with regulations involving asbestos.

Hanson needs to disclose that the product contains asbestos as reported by ISO 10312, described under CAS 1332-21-4, and regulated under the OSHA Standard. Otherwise, a recipient will not be made aware that the product is subject to the OSHA Standard and that special handling procedures are required to protect workers and the public.

### **3. Technical Deficiency 5.b**

#### **5. Module 10.1: Equipment and Operation Plan: "Non-Scheduled Site Maintenance" §77.452, §77.455**

**b) Please explain why air monitoring is excluded for dry aggregate or earthen material disturbance activities lasting less than 4 hours.**

DEP Comment: Please include the following sampling in your air monitoring for disturbance activities:

1. Please develop, submit to DEP for approval and execute an activity-based sampling program to gain an understanding asbestos exposure at low levels of activity (driving vehicles onsite, moving piles, etc.) in order to demonstrate that removal should not cause NOA fiber migration.

2. DEP requires a 24-hour lab analysis turnaround for samples taken during active operations at the Rock Hill Quarry.

**RESPONSE:**

1. Please see Attachment B for a copy of Hanson's proposed limited activity events sampling plan that is representative of activities that will occur during limited 500-ton removal operations. These activities include site staging, use of a street sweeper, driving various equipment (e.g. rubber-tire loader and water truck), and loading aggregate into tri-axle trucks. Note, absent DEP direction and approval, these activities do not include crushing, screening, drilling, or blasting of aggregate.

2. Once a limited activity event ends, the subsequent limited activity event will not commence until Hanson receives analysis of air samples and confirms that the proposed thresholds have not been exceeded. See Response 6.a. Hanson will provide the laboratory analysis to DEP within 24 hours of receipt from the selected laboratory. In this way, DEP will have the ability to review relevant laboratory sampling data prior to any additional activities occurring at the Quarry.

As stated in Section 1 of Hanson's Asbestos Monitoring and Mitigation Plan (AMMP), Hanson will notify DEP in advance if it intends to increase the frequency or extent of its operations and commits to coordinating laboratory analysis timeframes at that time, if necessary.

**4. Technical Deficiency 6**

**6. Module 10.7: Identification of Toxic Materials §77A52, §77.404**

- a) **Please explain the response of N/A to this module, particularly since NOA, a toxic substance, has been found to exist in the rock at the Rock Hill Quarry.**

DEP Comment: Hanson states above that "it will be treating all aggregate (and by extension, the diabase from which the aggregate is produced) at the Rock Hill Quarry as if it contains NOA".

Please explain why the corrective action level described in the AMMP for improving or modifying dust controlling best management practices can be determined by excluding a portion of the "counted" elongate mineral particles based on selected asbestiform properties.

RESPONSE: Hanson understands that DEP requires a corrective action threshold that reflects the performance and efficiency of Hanson's dust mitigation measures and that, to measure this, DEP requires Hanson to apply all elongated mineral particles (EMPs) that exceed 0.5 um in length. However, it is important that EMPs not be associated with any risk-based measurements. While EMPs may or may not contain asbestos fibers, they should not be equated with asbestos nor the risk posed by exposure to asbestos to off-site receptors.

The 0.01 PCMe asbestos f/cc action level in Hanson's AMMP incorporates a risk-based approach that measures potential off-site exposure to asbestos at the Quarry perimeter from naturally occurring asbestos. As articulated by Hanson in its prior response, measuring off-site exposure against PCMe asbestos fibers is consistent with EPA's Framework and EPA's practice at various superfund sites.

EPA's Framework identifies the 0.01 PCMe asbestos f/cc measurement as an assumed exposure concentration exclusively in the context of PCMe asbestos fibers. See, e.g., EPA Framework, E-2.<sup>1</sup> In comparison, the general counting scheme articulated in EPA's Framework and required by DEP (i.e., counting all EMPs that exceed 0.5  $\mu$ m) is not associated with risk. Requiring Hanson to incorporate a corrective action scheme that counts all EMPs against a 0.01 f/cc threshold is not consistent with EPA's Framework, is overly restrictive, will generate a significant amount of data unrelated to risk, and will ultimately create unnecessary confusion and concern regarding any EMPs identified during a sampling event.

Given this, Hanson proposes to incorporate an additional corrective action level into its AMMP of 0.1 EMP/cc, which will be used to evaluate the effectiveness of Hanson's dust control measures onsite. Exceedance of this threshold will result in corrective action(s) in accordance with Hanson's AMMP, as appropriate. This satisfies DEP's request for a corrective action level that considers all EMPs. Practically, this evaluation can occur using the same set of sampling data. As stated in prior correspondence, Hanson has committed to counting all fibers that exceed 0.5  $\mu$ m in length. These data will be presented to DEP. From that data set, Hanson will analyze PCMe asbestos fibers against the proposed 0.01 PCMe asbestos f/cc threshold as a measurement of risk (if any) posed to off-site receptors and, separately, will analyze EMPs detected at the Quarry perimeter against a threshold of 0.1 EMP/cc to determine the effectiveness of dust control measures.

Hanson believes that this proposal satisfies DEP's request and appropriately maintains a risk-based threshold consistent with EPA's Framework that will not create unnecessary confusion and concern regarding data collected at the Quarry perimeter.

Hanson's new proposal for reporting asbestos fibers against a perimeter threshold appears antithetical to DEP's requirement for a perimeter monitoring program that is protective to offsite residents.

First, Hanson proposes to select a subset (>5 $\mu$ m length) to apply to the perimeter threshold. This subset will substantially reduce the concentration of asbestos that will be applied.

Second, rather than decrease the proposed threshold to account for the reduction of fiber concentration, they propose to increase it by a factor of ten, to 0.1 f/cc.

Consider: If, for example, the number of fibers that are >5 $\mu$ m represent 10% of the total fibers, and the threshold is increased from 0.01 f/cc to 0.1 f/cc, the protection factor at the perimeter will be reduced by two orders of magnitude. This appears neither protective nor consistent with DEP's call to design a perimeter monitoring program that is highly protective to offsite residents.



## 5. Technical Deficiency 6.b

**6.b. Please describe in detail the procedures that will be employed in identification of NOA. The asbestos fiber structure counting criteria should be in concert with the structure counting criteria expressed in ISO 10312, 2019-10, Annex C.**

DEP Comment: Title 25, § 77.455. Air pollution control plan states:

"The description shall include an air pollution control plan which includes the following:

1. A plan for fugitive dust control practices, as required under § 77 .575 (relating to air resources protection), and if applicable, how the requirements of Chapters 123 and 127 (relating to standards for contaminants; and construction, modification, reactivation and operation of sources) will be met.
2. If requested by the Department, an air quality control monitoring program to provide sufficient data to evaluate the effectiveness of the air pollution control plan."

In the Asbestos Monitoring and Mitigation Plan (AMMP), Section 3.4, Analytical Methods is this passage: "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." DEP directs that the method of counting fibers that shall be employed is expressed as the first scheme underlined below counting U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMPs with the intent that this is the standard that shall be used when determining if corrective actions are needed to improve dust controlling Best Management Practices.

### *Fiber Measurement and Identification:*

Under the ISO method, two specific counting schemes are detailed. The first scheme is more general and allows for the counting of fibers that are 0.5 um 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 um in width, as compared to the resolution for routine PCM (0.25 um). 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.

The other counting scheme allows for the counting of PCM equivalent fibers, or PCMe. Under this scheme, the analyst is to count fibers that are longer than 5 um in length with aspect ratios of 3: 1 or greater. PCMe fibers and structures under the ISO method also have a defined width range of between 0.2 um and 3.0 um. (Note that EPA recommends a width range between 0.25 um and 3.00 um, as recommended by World Health Organization [WHO, 1986]). The purpose of

counting fibers as PCMe fibers is that the method is attempting to mimic the size fraction of fibers that would be detected if the sample were being run under PCM.

RESPONSE: See Response to Technical Deficiency 6.a. Hanson proposes to incorporate a risk-based corrective action threshold of 0.01 PCMe asbestos f/cc and a performance-based corrective action threshold of 0.1 EMP/cc.

Hanson is unresponsive to a key element of DEP's request: "Please describe in detail the procedures that will be employed in identification of NOA".

There is no description of the procedure used by their consulting lab, RJLG, to remove particles from the reporting requirements of test methods on the basis of morphology. RJLG has yet to disclose the procedures that are employed to modify the test methodologies. To comply with DEP's technical deficiency, Hanson/RJLG should produce the operating procedures that analysts use to differentiate particles based on morphology, and DEP should allow the procedures to be reviewed publicly.

## 6. Technical Deficiency 7.b.

**7.b. Please describe in detail the procedures that will be employed in the handling of NOA including NOA containing rock and/or soil. The asbestos fiber structure counting criteria should be in concert with the structure counting criteria expressed in ISO 10312, 2019- JO, Annex C.**

DEP Comment: Please provide the destination and use of the 500 tons per year and if it will be crushed upon arrival at its destination. If the ultimate use of the 500 tons includes further crushing in its use, monitoring of that site for asbestos will be required.

RESPONSE: Hanson has no current plans to sell unprocessed aggregate material from the Rock Hill Quarry to third-party customers. Hanson intends to transport already crushed aggregate material currently stockpiled at the Rock Hill Quarry to the nearby Ottsville Quarry for stockpiling and future sale to customers. The existing crushed aggregate stockpiles at the Rock Hill Quarry have previously been sampled and shown to contain less than 1.0% naturally occurring asbestos. Therefore, the material is not considered to be hazardous or asbestos containing material (ACM). When the aggregate material is sold to a third-party, Hanson will provide the customer with a safety data sheet, as appropriate. At this time, Hanson has no knowledge of any future customer's intended use or destination for aggregate material from the Rock Hill Quarry. It is also highly unlikely that Hanson can know the intended destination and use of any aggregate material by any third-party customer.

The claim that material that containing less than 1% (defined as ACM) is not considered hazardous is incorrect. OSHA regulates asbestos in any amount, specifically because the handling of asbestos in any amount may produce an adverse exposure to workers. Why else would OSHA require special work practices such as wet methods, specialized training, and personal air monitoring for materials where the asbestos content is less than 1%? EPA has shown, and stated in writing, that low levels of asbestos in rock and soil

can produce unacceptable exposures to the public. Hanson should simply state the fact that the diabase material contains asbestos, is subject to OSHA regulatory control, and may be hazardous if not handled properly.

Hanson claims that they have no knowledge of any future customer's intended use or destination for aggregate material from the Rock Hill Quarry. This claim seems a bit disingenuous, considering that Hanson has been producing and selling construction materials for decades, and knows better than anyone else who purchases it and the intended use. They also should know who they intend to market the material to. Hanson may not be in a position to identify a specific future purchaser, but their own web page provides information that could have been used as a response to DEP's query. Hanson states:

*"Hanson Aggregates is one of the largest producers of crushed stone, sand and gravel in the U.S. With its robust network of plants and ability to transport materials by water and rail, Hanson Aggregates has the capability to supply construction projects in major markets across the country. Hanson supplies aggregates for a variety of uses. While the majority of our materials are used for the production of ready mixed concrete and asphalt, our aggregates are also used for base material, filter stone, drainage and erosion control, landscaping, railroad ballast and backfill".*

See: ([www.lehighhanson.com/sites/hanson-aggregates](http://www.lehighhanson.com/sites/hanson-aggregates))

Because the Rock Hill quarry is local to the Rockhill Township, it would be expected that this material would be sold locally for asphalt, concrete, base material, filter stone, drainage and erosion control, landscaping, railroad ballast, and backfill on projects within and outside of the area. Based on the language on their web page, it can be concluded that recipients are normally contractors or agencies that purchases this material for these projects.

## **7. Technical Deficiency 9.a.iv.**

**9.a.iv. Please include provisions ensuring that street sweepers are only operated with sufficient water and dust suppression controls to prevent them from being a source of dust emissions.**

DEP Comment: Please add provisions that the street sweeper will only operate with sufficient water and dust controls to prevent the street sweeper from becoming a source of dust emissions.

Please add provisions that the street sweeper will follow a schedule such as once per hour, four times per day.

RESPONSE: Hanson will revise its AMMP to incorporate this request.

## **8. Technical Deficiency 9.a.v**

**9.a.v. DEP requests that a commercial wash station be installed at a sufficient distance from the exit so that vehicles can be cleaned to prevent deposition of material off-site. This should be used by all vehicles leaving the site.**

DEP Comment: Please add the provision that the use of the truck wash will be required for all vehicles leaving the site.

RESPONSE: At such time that Hanson plans to ramp up mining activity at the site (i.e. resume full aggregate production activities), a wheel wash station will be installed to enable cleaning of vehicles prior to their leaving the site. In the interim, the paved section at the site entrance and the crushed aggregate on the site roads will prevent track-out.

As stated in Section 1 of Hanson's Asbestos Monitoring and Mitigation Plan (AMMP), Hanson will notify DEP in advance if it intends to increase the frequency or extent of its operations and commits to coordinating any revisions to address vehicle traffic, as necessary, at that time.

**Paved roads are not designed to prevent track-out, and driving over crushed aggregate that contains asbestos would naturally increase track-out. It is the driving over asbestos-containing materials that provides the source of asbestos on tires and undercarriages, leading to the track-out of this material.**

## **9. Technical Deficiency 9.a.vii**

**9.a.vii. Existing moisture level of aggregate piles and roads may not always be sufficient to control emissions. Please include provisions indicating that you will add moisture to roads, product stockpiles, soil, or other on-site material, as needed to control dust, prior to disturbing said material and during times when no activity is occurring on-site.**

DEP Comment: Please include provisions that Hanson will add moisture to roads, product stockpiles, soil, or other on-site material, as needed to control dust, prior to disturbing said material and during times when no activity is occurring on-site.

RESPONSE: Hanson will revise its AMMP to incorporate this request.

## **10. Technical Deficiency 9.a.viii**

**9.a. viii.: Please include additional provisions for dust control measures during loading of trucks, such as water sprays during loading, use of directed fog cannons, etc.**

DEP Comment: Please include provisions that Hanson will add surface binders to stockpiles of fines as needed. Please include provisions that Hanson will add moisture to materials prior to loading on trucks as needed.

RESPONSE: Hanson will revise its AMMP to incorporate this request.

#### **11. Technical Deficiency 9.a.x.**

**9.a.x. : During any 500 ton removal activities, ensure that the air samples are delivered to the laboratory for analysis after each workday and the sample results have a 24-hour turnaround time from the laboratory.**

DEP Comment: DEP has stated previously the requirement is a 24-hour turnaround time on analysis of samples.

RESPONSE: Once a limited activity event ends, the subsequent limited activity event will not commence until Hanson receives analysis of air samples and confirms that the proposed thresholds have not been exceeded. Hanson will provide the laboratory analysis to the DEP within 24 hours of receipt from the selected laboratory. In this way, DEP will have the ability to review all relevant laboratory sampling data prior to any additional activities occurring at the Quarry.

As stated in Section 1 of Hanson's Asbestos Monitoring and Mitigation Plan (AMMP), Hanson will notify DEP in advance if it intends to increase the frequency or extent of its operations and commits to coordinating laboratory analysis timeframes at that time, if necessary.

#### **12. Technical Deficiency 9.a.xi.**

**9.a.xi. : Please clearly indicate that sampling during 500 ton removal events will take place while material is being handled and moved regardless of any 4-hour time constraint.**

DEP Response: The proposed sampling program frequency is inadequate, please commit to the following:

- a. Develop, submit to DEP for approval and execute an activity-based sampling program to gain an understanding asbestos exposure at low levels of activity and demonstrate that removal should not cause U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMP migration. This must be done before 500-ton removal can be approved.
- b. Develop, submit to DEP for approval, and commit to execute a daily sampling program to be implemented in a stepped-up basis as each Quarry activity begins should full Quarrying activity be approved.
- c. Commit to daily sampling for at least the first month of Quarry operation during full Quarry operations.

Commit to twice weekly sampling for six months after the daily sampling shows no migration of U.S. regulatory asbestos minerals and their non-asbestos mineral analog

EMPs from the Rock Hill Quarry site.

**RESPONSE:**

- a. Please see Attachment B for a copy of Hanson's proposed limited activity events sampling plan that is representative of activities that will occur during limited 500-ton removal operations. These activities include site staging, use of a street sweeper, driving various equipment (e.g. rubber-tire loader and water truck), and loading aggregate into tri-axle trucks. Note, absent DEP direction and approval, these activities do not include crushing, screening, drilling, or blasting of aggregate.
- b./c. It is premature to determine the sampling frequency at this time with respect to full Quarry operations. In accordance with Section 1 of Hanson's AMMP, Hanson will notify DEP in advance of any planned increase in frequency or extent of its Quarry activities. Full quarry operations will likely also require additional permit applications. Hanson will coordinate required sampling frequencies with DEP prior to initiating more frequent or extensive quarrying operations.

Hanson does not appear to be responsive to DEP's request. In particular, Hanson did not commit to showing "no migration of U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMPs from the Rock Hill Quarry site".

**13. Technical Deficiency 9.a.xiv.**

**9.a.xiv.: Please provide specific engineering detail(s) on all devices planned to be used for dust suppression specific to each operational application including rates of application.**

DEP Response: Please provide specific engineering details of all dust suppression equipment including:

- Mobile, stationary or both
- Wheel washing facilities
- Scheduling and/or sequence of operations

RESPONSE: Hanson is unable to adequately respond to this comment at this time. Until Hanson has a more definitive understanding on when it can expect relief from DEP's current cessation order and can properly plan to resume Quarry activities, Hanson cannot determine the specific dust suppression equipment that it will utilize at the Quarry during limited removal operations. Hanson will commit to providing DEP with a full list of all equipment that it will use at the Quarry at least 30 days in advance of initiating any 500 ton removal operations. Hanson acknowledges that it will need to supply a full list of dust suppression controls to DEP as part of any future air permit plan approval application.

Notwithstanding the above, Hanson anticipates that it will use the dust suppression equipment that is typical of a consolidated rock mining in Pennsylvania. These may include: water sprays on aggregate processing equipment, water truck for dust control on haul roads and stockpile areas, and a customer-truck wheel wash.

Hanson will also use a water truck that will likely include the following specifications: (1) front and rear water sprays and (2) a water cannon able to spray down piles or truck wheels.

#### **14. Technical Deficiency 9.b.i.**

**9.b.: Attachment 4(b)(ii) Draft Air Monitoring Plan Procedures - General DEP Comments on Analytical: §77.455, §77.130.**

**9.b.i. : Please explain the reference to the 5 micrometers in length in the definition of asbestos fiber. The definition of an asbestos fiber should be consistent with the counting methodology as found in ISO 10312-2019-10 "Ambient Air-Determination of Asbestos Fibers -Direct Transfer Transmission Electron Microscopy Method", as modified in Appendix C, Page C-3: Fiber Measurement and Identification detailed in "OSWER Directive #9200.0-68, September 2008, Framework for Investigating Asbestos-Contaminated Superfund Sites"**

DEP Response: One purpose of the air monitoring program is to assure that the Best Management Practices employed in controlling and preventing the migration of elongate mineral particles that may contain asbestos fibers are effective by using the information gained from that air monitoring program to initiate corrective action.

Please explain how dust controlling Best Management Practices can be judged effective if one is judging that efficacy based on the appearance of specifically defined asbestiform fibers which may only be a part of the entire spectrum of U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMPs.

RESPONSE: See Response to Technical Deficiency 6.a. Hanson proposes to incorporate a risk-based corrective action threshold of 0.01 PCMe asbestos f/cc and a performance-based corrective action threshold of 0.1 EMP/cc.

[See EEC's response to Hanson's response to Technical Deficiency 6.a.](#)

#### **15. Technical Deficiency 9.b.iv**

**9.b.iv. : DEP believes that the appropriate methodology for analyzing samples in this situation is ISO 10312-2019-10 "Ambient Air-Determination of Asbestos Fibers -Direct Transfer Transmission Electron Microscopy Method", as modified in Appendix C, Page C-3: Fiber Measurement and Identification detailed in EPA 's "OSWER Directive #9200.0-68, September 2008, Framework For Investigating Asbestos-Contaminated Superfund Sites". If Hanson wishes to do concurrent sampling to demonstrate the efficacy of other analysis methods for this site, then that may be proposed.**

DEP Response: DEP disagrees with the above underlined and italicized statement.

Please explain how dust controlling Best Management Practices can be judged effective if one is judging that efficacy based on the appearance of specifically defined asbestiform fibers which may only be a part of the entire spectrum of U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMPs.

RESPONSE: See Response to Technical Deficiency 6.a. Hanson proposes to incorporate a risk-based corrective action threshold of 0.01 PCMe asbestos f/cc and a performance-based corrective action threshold of 0.1 EMP/cc.

See EEC's response to Hanson's response to Technical Deficiency 6.a.

## **16. Technical Deficiency 9.b.v.**

**9.b.v. : Please provide detailed laboratory standard operating procedures (SOPs) that will be used to prepare samples, analyze samples, and calculate results.**

DEP Comment: Please make the accommodations for the DEP to review these procedural documents.

RESPONSE: Hanson does not have the authority to provide DEP with any proprietary standard operating procedure documents of a third-party laboratory. Hanson can coordinate with its selected laboratory, to the extent possible, to assure DEP that the laboratory is able to conduct all required analysis and review the relevant laboratory SOPs.

Please note that the R.J. Lee Group (RJLG) (Hanson's anticipated laboratory) is certified by DEP as an accredited laboratory. The full scope of RJLG's accreditation, which includes asbestos, is available at:

<https://go.rjlg.com/hubfs/PA%20DEP%20Cert%20and%20Scope%20exp.%2004.30.22.pdf>.

Additionally, RJLG is certified by NVLAP as an accredited laboratory for airborne asbestos analysis at:

[https://go.rjlg.com/hubfs/NVLAP%20AccreditationScope2017%20exp.%2006.30.22%20\(rec.%2010.04.21\)-2.pdf](https://go.rjlg.com/hubfs/NVLAP%20AccreditationScope2017%20exp.%2006.30.22%20(rec.%2010.04.21)-2.pdf).

As part of RJLG's Quality Program, laboratory standard operating procedures are controlled documents which may contain proprietary information, and as such are generally not made available for distribution outside of the organization. RJLG regularly makes operating procedures available to clients, assessors, and government organizations and would be happy to arrange time and space for DEP personnel to review the relevant documents.

Please contact Bryan Bandli, Ph.D., Principal Investigator with R.J. Lee Group ([bbandli@rjleegroup.com](mailto:bbandli@rjleegroup.com), 724-387-1802) at your convenience to coordinate a date and time to review relevant procedural documents.



Hanson discloses that RJLG is certified by DEP, and EPA through the NVLAP program. The purpose of the accreditations is to help assure that laboratories are conducting testing in accordance with published test methods and standards of practice. Sample preparation and testing protocols are standardized across all laboratories to assure that results are precise, accurate, and reproducible. Proprietary and non-standardized methods are antithetical to this objective, and should not be incorporated into standard operating procedures that are produced for public protection purposes.

SOP's that are produced for public accreditation should be considered to be publicly available, and the residents of Rockhill Township should have the right to review these documents and submit them for expert review. Otherwise, residents can have little confidence that the testing is being conducted in accordance with DEP and EPA-required protocols, and the reporting of asbestos is precise, accurate and reproducible. It seems unreasonable that those who are most affected by asbestos at the site are shielded from receiving information that is germane to their protection.

## **17. Technical Deficiency 9.c.x.**

**Item 9.c.x. Please define an action level for asbestos sample results. Based on previous discussions it is suggested that this be 0.01 fibers/cubic centimeter (f/cc).**

DEP Comment: As a general observation, the samplings and analyses of the Rock Hill Quarry site using numerous testing methods and protocols has shown that asbestos fibers and amphibole cleavage fragments can be found at the Rock Hill Quarry site in varying concentrations. These concentrations vary depending on the location, material sampled, thickness and quantity of the actinolite veining and the diabase rock itself within the diabase on the Quarry property.

The limited petrographic analysis of a few samples has shown the presence of asbestos fibers within the diabase matrix itself. The limited sampling of the prepared aggregate shows both asbestos fibers and amphibole cleavage fragments. The limited sampling of the overburden has shown both the presence of asbestos fibers and amphibole cleavage fragments and the limited background sampling of the air to date has shown the presence of amphibole cleavage fragments.

Hanson has committed to "counting" both asbestiform fibers and actinolite cleavage fragments in their sampling and analysis but introduces a caveat eliminating fibers greater than 5µm when considering corrective actions to the dust suppression Best Management Practices as follows:

"Hanson has incorporated this requirement into Section 3. 6 of Hanson 's Asbestos Monitoring and Mitigation Plan. Hanson has incorporated an action level of 0.01 f/cc, as requested by DEP, but for the purposes of determining whether corrective action is necessary, Hanson will only consider and count asbestos fibers that exceed 5 micrometers in length Hanson reserves the right to petition DEP to modify this action level pending the generation and review of additional site data. but has limited any corrective

action to the presence of a specific quantity of asbestos fibers".

Please explain in specific detail how a corrective action level determined from and/or limited by a threshold quantity counting only asbestos fibers that exceed 5 micrometers in length can effectively be used to determine if the Best Management Practice's (BMP's) employed to control dust containing elongate mineral particles that may contain asbestos fibers are effective and if corrective action is needed if the source and by default, the quantity and presence of those specifically defined asbestos fibers are varying as is at the Rock Hill site.

RESPONSE: See Response to Technical Deficiency 6.a. Hanson proposes to incorporate a risk-based corrective action threshold of 0.01 PCMe asbestos f/cc and a performance-based corrective action threshold of 0.1 EMP/cc.

See EEC's response to Hanson's response to Technical Deficiency 6.a.

#### **18. Technical Deficiency 9.c.xii.**

**9.c.xii. Please include provisions indicating that all sample results will be forwarded to DEP via email within 24 hours of receipt from the laboratory.**

DEP Response: DEP has stated previously the requirement is a 24-hour turnaround time on analysis of samples.

Response: Once a limited activity event ends, the subsequent limited activity event will not commence until Hanson receives analysis of air samples and confirms that the proposed thresholds have not been exceeded. Hanson will provide the laboratory analysis to the DEP within 24 hours of receipt from the selected laboratory. In this way, DEP will have the ability to review relevant laboratory sampling data prior to any additional activities occurring at the Quarry.

As stated in Section 1 of Hanson's Asbestos Monitoring and Mitigation Plan (AMMP), Hanson will notify DEP in advance if it intends to increase the frequency or extent of its operations and commits to coordinating laboratory analysis timeframes at that time, if necessary.

#### **19. Technical Deficiency 9.c.xiv:**

**9.1.viv.: Please propose procedures indicating how Hanson will conduct initial asbestos air monitoring during low activity conditions and the use of on-site roads (i.e.: water sample collection, site inspections, security, etc.) demonstrating that ambient levels of asbestos do not exceed the action level.**

DEP Comment: Please develop, submit to DEP for approval and execute an activity-based sampling program to gain an understanding asbestos exposure at low levels of activity and demonstrate that removal should not cause NOA fiber migration.

RESPONSE: Please see Attachment B for a copy of Hanson's proposed limited activity events sampling plan that is representative of activities that will occur during limited 500-ton removal operations. These activities include site staging, use of a street sweeper, driving various equipment (e.g. rubber-tire loader and water truck), and loading aggregate into tri-axle trucks. Note, absent DEP direction and approval, these activities do not include crushing, screening, drilling, or blasting of aggregate.

## **20. Technical Deficiency 9.c.xvi.**

**9.c.xvi. Please provide engineering detail(s) on water emitting devices planned to be used for controlling dust specific to the operational application.**

DEP Response: Please provide specific engineering detail of the "portable equipment" that will be used to mitigate and suppress any dust generated during Quarry activities.

RESPONSE: See Response to Technical Deficiency 9.a.xiv. Hanson is unable to adequately respond to this comment at this time. Until Hanson has a more definitive understanding on when it can expect relief from DEP's current cessation order and can properly plan to resume Quarry activities, Hanson cannot determine the specific dust suppression equipment that it will utilize at the Quarry during limited removal operations. Hanson will commit to providing DEP with a full list of all equipment that it will use at the Quarry at least 30 days in advance of initiating any 500 ton removal operations. Hanson acknowledges that it will need to supply a full list of dust suppression controls to DEP as part of any future air permit plan approval application.

Notwithstanding the above, Hanson anticipates that it will use the dust suppression equipment that is typical of a consolidated rock mining in Pennsylvania. These may include: water sprays on aggregate processing equipment, water truck for dust control on haul roads and stockpile areas, and a customer-truck wheel wash.

Hanson will also use a water truck that will likely include the following specifications: (1) front and rear water sprays and (2) a water cannon able to spray down piles or truck wheels.

## **21. Technical Deficiency 10.c.**

**10. Please provide an up to date comprehensive NOA Monitoring and Risk Mitigation Plan for the Rock Hill Quarry.: §77.451, §77.105, §77.130.**

**10. c. Please detail all methods, protocols and compliance standards that will be employed to monitor the migration of NOA from the Rock Hill Quarry Site.**

DEP Response: It is DEP's intent that the "defined action level" for implementing corrective actions be determined utilizing 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 fibers that are 0.5 µm in length or greater and have aspect ratios of 5: 1 or greater. In routine practice, TEM can resolve fibers down to approximately 0.1 µm in width, as compared to the resolution for routine PCM (0.25 µm). 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."

DEP directs the "defined action level" for implementing corrective action shall be determined utilizing the counting method cited above counting U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMPs without modification for fibers shorter than 5µm.

RESPONSE: See Response to Technical Deficiency 6.a. Hanson proposes to incorporate a risk-based corrective action threshold of 0.01 PCMe asbestos f/cc and a performance-based corrective action threshold of 0.1 EMP/cc.

[See EEC's response to Hanson's response to Technical Deficiency 6.a.](#)

## **22. Technical Deficiency 10.d.**

**10.d.: All methods, protocols and compliance standards that will be employed to control migration of NOA from the Rock Hill Quarry site whether they be in air, water, overburden, waste, or products produced by the Rock Hill Quarry.**

DEP Response: It is DEP's intent that the "defined action level" for implementing corrective actions be determined utilizing 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 fibers that are 0.5 µm in length or greater and have aspect ratios of 5: 1 or greater. In routine practice, TEM can resolve fibers down to approximately 0.1 µm in width, as compared to the resolution for routine PCM (0.25 µm). 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."

DEP directs the "defined action level" for implementing corrective action shall be determined utilizing the counting method cited above counting U.S. regulatory asbestos minerals and their non-asbestos mineral analog EMPs without modification for fibers shorter than 5 µm.

RESPONSE: See Response to Technical Deficiency 6.a. Hanson proposes to incorporate a risk-based corrective action threshold of 0.01 PCMe asbestos f/cc and a performance-

based corrective action threshold of 0.1 EMP/cc.

See EEC's response to Hanson's response to Technical Deficiency 6.a.

Hanson remains committed to continuing to work with DEP to allow the removal of the Cessation Order so that quarrying activities can safely resume at the Rock Hill Quarry.

Regards,



Andrew J. Gutshall, P.G.  
Area Environmental Manager



Catherine Stehlin  
Associate General Counsel – NE Region

encl:

cc: John Stefanko, PADEP (e-mail only)  
Daniel Sammarco, P.E., PADEP (e-mail only)  
Gary Latsha, PADEP (e-mail only)  
Michael P. Kutney, P.G., PADEP (e-mail only)  
Randy Shustack, PADEP (e-mail only)  
Amiee Bollinger, PADEP (e-mail only)  
Thomas Boretski, PADEP (e-mail only)  
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Catherine (Casey) Stehlin, Esq., Hanson (e-mail only)  
Robert, J. Schena, Esq., Fox Rothschild LLP (e-mail only)

# **ATTACHMENT A**

# Safety Data Sheet **Rock Hill Diabase**

## Section 1. Identification

<b>GHS product identifier:</b>	Rock Hill Diabase
<b>Other means of identification:</b>	Basalt, Trap Rock, Natural Stone, Crushed Stone
<b>Relevant identified uses of the substance or mixture and uses advised against:</b>	Diabase may be used in the manufacture of bricks, mortar, cement, concrete, plasters, paving materials, and other construction materials. Diabase may be distributed in bags, totes, and bulk shipments.
<b>Supplier's details:</b>	300 E. John Carpenter Freeway, Suite 1645 Irving, TX 75062 (972) 653-5500
<b>Emergency telephone number (24 hours):</b>	<b>CHEMTREC: (800) 424-9300</b>

## Section 2. Hazards Identification

<b>GHS Classification:</b>	CARCINOGENICITY – Category 1A; H350 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2; H335 SKIN CORROSION/IRRITATION – Category 1C; H314 SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1; H318
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### GHS label elements

**Hazard pictograms:**



<b>Signal word:</b>	Danger
<b>Hazard statements:</b>	May cause cancer May cause damage to organs (lung) through prolonged or repeated exposure Causes skin irritation Causes serious eye irritation

**Precautionary statements:**

<b>Prevention:</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash any exposed body parts. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dusts or mists. Avoid creating dusts when handling.
<b>Response:</b>	If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.
<b>Storage:</b>	Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.
<b>Disposal:</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazards not otherwise classified (HNOC):</b>	None known



## Section 3. Composition/information on ingredients

### CAS number/otr identifiers

**Substance/mixture:** Diabase

Ingredient name	%	CAS number
Diabase	> 90	None
Crystalline Silica (Quartz)	20-55	14808-60-7
Actinolite, Asbestiform*	0-0.5	1332-21-4

\*Individual composition of minerals and hazardous constituents of diabase vary naturally. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. These materials are mined from the earth. Trace amounts of naturally occurring elements might be detected during chemical analysis of these materials.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye Contact:</b>	Dust: Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contacts if present and easy to do. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation develops or persists.
<b>Inhalation:</b>	Dust: Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin Contact:</b>	Dust: Wash off with soap and water. Get medical attention if irritation develops or persists.
<b>Ingestion:</b>	Dust: Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

### Most important symptoms/effects, acute and delayed

Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis and may cause lung cancer. This product may contain trace amounts of **actinolite, asbestiform**. Prolonged or repeated inhalation of actinolite, asbestiform can cause asbestosis, and may cause lung cancer and mesothelioma.

### Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician:</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>Specific treatments:</b>	Not Applicable
<b>Protection of first-aiders:</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>General information:</b>	Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media:</b>	Not flammable. Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media:</b>	None known.
<b>Specific hazards arising from the chemical:</b>	No unusual fire or explosion hazards noted. Not a combustible dust.

<b>Hazardous thermal decomposition Products:</b>	None known
<b>Special protective equipment for fire-fighters:</b>	Use protective equipment appropriate for surrounding materials. No specific precautions.
<b>General fire hazards:</b>	Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS). No unusual fire or explosion hazards.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment and clothing during clean-up of materials that contain or may liberate dust.

### Methods and materials for containment, cleaning up and Environmental precautions

Spilled material, where dust is generated, may overexpose cleanup personnel to dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Avoid discharge of fine particulate matter into drains or water sources.

## Section 7. Handling and storage

### Precautions for safe handling

<b>Protective measures:</b>	Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment.
<b>Advice on general occupational hygiene:</b>	Observe good industrial hygiene practices. Promptly remove dusty clothing and launder before reuse.
<b>Conditions for safe storage, including any incompatibilities:</b>	Avoid dust formation or accumulation.

**Section 8. Exposure controls/personal protection**

Ingredient name	Exposure limits
<b>Particulates not otherwise classified (CAS SEQ250)</b>	<b>ACGIH TLV (United States, Canada)</b> TWA: 3 mg/m <sup>3</sup> . Form: Respirable particles TWA: 10 mg/m <sup>3</sup> . Form: Inhalable particles <b>OSHA PEL (United States)</b> PEL: 5 mg/m <sup>3</sup> . Form: Respirable fraction PEL: 15 mg/m <sup>3</sup> . Form: Total dust <b>MSHA PEL (United States)</b> PEL: 5 mg/m <sup>3</sup> . Form: Respirable fraction PEL: 10 mg/m <sup>3</sup> . Form: Total dust
<b>Crystalline Silica (Quartz) (CAS 14808-60-7)</b>	<b>ACGIH TLV (United States)</b> TWA: 0.025 mg/m <sup>3</sup> . Form: Respirable fraction <b>OSHA PEL (United States)</b> TWA: 0.05 mg/m <sup>3</sup> . Form: Respirable <b>MSHA PEL (United States)</b> TWA: 10/(%SiO <sub>2</sub> + 2) in mg/m <sup>3</sup> <b>Provincial Exposure Limits (Canada, various)</b> <ul style="list-style-type: none"> <li>▪ <b>Alberta (OHS Code)</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>British Columbia (WorkSafeBC OHS Regulation)</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>British Columbia (Health, Safety &amp; Reclamation Code, Mines Act)</b> 0.1 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Manitoba (Workplace Safety and Health Regulation)</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>New Brunswick</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Newfoundland</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Nova Scotia</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Ontario (O. Reg 490/09; and O. Reg. 833)</b> 0.1 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Prince Edward Island</b> 0.025 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Quebec (Regulation Respecting OHS, Chapter S-2.1, r. 13)</b> 0.1 mg/m<sup>3</sup> 8 hour TWA</li> <li>▪ <b>Saskatchewan (OHS Regulations)</b> 0.05 mg/m<sup>3</sup> 8 hour TWA</li> </ul>
<b>Actinolite, Asbestiform (CAS 1332-21-4)</b>	<b>ACGIH TLV (United States, Canada)</b> 0.1 f/cc <b>OSHA/MSHA PEL (United States)</b> 0.1 f/cc

**Appropriate engineering controls:**

Good general ventilation (typically 10 air changes per hour indoors) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Exposure guidelines:**

OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. Occupational exposure to nuisance dust (total and respirable), respirable crystalline silica, and actinolite asbestos should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," "Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

**Biological limit values:** No biological exposure limits noted for the ingredient(s)

## Individual protection measures

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Eye/face protection:** Wear safety glasses with side shields (or goggles).

**Hand protection:** Use personal protective equipment as required.

**Body protection:** Use personal protective equipment as required.

**Other skin protection:** Use personal protective equipment as required.

**Respiratory protection:** When handling or performing work that produces dust in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

**Thermal hazards:** Not anticipated. Wear appropriate thermal protective clothing if necessary.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical State:</b>	Solid, particles of granular mixture	<b>Lower and Upper explosive flammable limits</b>	Not applicable
<b>Color:</b>	Various colors, grey or red	<b>Vapor pressure:</b>	Not applicable
<b>Odor:</b>	Not applicable	<b>Vapor density:</b>	Not applicable
<b>Odor threshold:</b>	Not applicable	<b>Relative density:</b>	Not available
<b>pH:</b>	Not available	<b>Solubility:</b>	Not available
<b>Melting point:</b>	Not applicable	<b>Solubility in water:</b>	Insoluble
<b>Boiling point:</b>	Not applicable	<b>Partition coefficient: n-octanol/water:</b>	Not applicable
<b>Flash point:</b>	Non-combustible	<b>Auto-ignition temperature:</b>	Not applicable
<b>Burning time:</b>	Not applicable	<b>Decomposition temperature:</b>	Not applicable
<b>Burning rate:</b>	Not applicable	<b>SADT:</b>	Not available
<b>Evaporation Rate:</b>	Not applicable	<b>Viscosity:</b>	Not applicable
<b>Flammability (solid, gas):</b>	Not applicable		

## Section 10. Stability and reactivity

**Reactivity:** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical Stability:** Material is stable under normal conditions

**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use.

**Conditions to avoid:** Avoid contact with strong oxidizing agents.

**Incompatible materials:** Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions.

**Hazardous decomposition products:** Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

## Section 11. Toxicological information

### Information on toxicological effects

<b>Acute toxicity:</b>	Not expected to be acutely toxic.
<b>Irritation/Corrosion:</b>	<b>Skin:</b> Dust: May cause irritation through mechanical abrasion. This product is not expected to be a skin hazard. <b>Eyes:</b> Direct contact with eyes may cause temporary irritation through mechanical abrasion. <b>Inhalation:</b> Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer. Repeated inhalation of <b>actinolite, asbestiform</b> fibers may lead to a characteristic pneumoconiosis termed asbestosis, a diffuse interstitial lung fibrosis. Individuals with fully developed asbestosis will experience dyspnea, which is often accompanied by rales or cough and deficits in pulmonary function variables and cardiovascular effects may occur. Besides asbestosis, chronic asbestos exposure may cause lung cancer, mesothelioma (primarily of the pleura, but also of the peritoneum), pleural disease, and pleural plaques. Tobacco smokers exposed to respirable crystalline silica (quartz) and asbestos fibers are at greater risk for lung cancer than nonsmokers. <b>Ingestion:</b> Not likely due to product form. However accidental ingestion may cause discomfort.
<b>Sensitization:</b>	<b>Respiratory sensitization:</b> No respiratory sensitizing effects known. <b>Skin sensitization:</b> Not known to be a dermal irritant or sensitizer.
<b>Mutagenicity:</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Aspiration Hazard:</b>	Not expected to be an aspiration hazard.
<b>Reproductive toxicity:</b>	Not expected to be a reproductive hazard.
<b>Symptoms related to physical, chemical and toxicological characteristics:</b>	Dust: discomfort in the chest. Shortness of breath. Coughing.
<b>Carcinogenicity:</b>	Respirable crystalline silica and <b>actinolite, asbestiform</b> have been classified by IARC and NTP as known human carcinogens. ACGIH classifies respirable crystalline silica as a suspected human carcinogen and actinolite, asbestiform as a known human carcinogen.

Product/ingredient name	OSHA	ACGIH	NTP
Crystalline Silica (Quartz) (CAS 14808-60-7)	Listed	A2	Known to be human Carcinogen
<b>Actinolite, Asbestiform</b> (CAS 1332-21-4)	Listed	A1	Known to be human Carcinogen

#### Specific target organ toxicity (acute exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	Not reported to have effects
<b>Actinolite, Asbestiform</b> (CAS 1332-21-4)	-	Inhalation	Not reported to have effects

#### Specific target organ toxicity (chronic exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	May cause damage to organs (lung through prolonged or repeated inhalation exposure).
<b>Actinolite, Asbestiform</b> (CAS 1332-21-4)	-	Inhalation	Actinolite asbestos may cause mesothelioma.

## Section 12. Ecological Information

### Ecotoxicity

Not expected to be harmful to aquatic organisms. Discharging diabase and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

<b>Persistence and degradability:</b>	Not applicable.
<b>Bioaccumulative potential:</b>	Not applicable.
<b>Mobility in soil:</b>	Not applicable.
<b>Other adverse effects:</b>	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

## Section 13. Disposal considerations

<b>Disposal methods:</b>	Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/national/international regulations.
<b>Hazardous waste code:</b>	Not regulated.
<b>Waste from residues/unused products:</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
<b>Contaminated packaging:</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or disposed of in accordance with applicable regulations and practices.

## Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	-	-	-
Canada TDG	-	-	-
Additional Information	-	-	-

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

## Section 15. Regulatory Information

<b>U.S. Federal regulations:</b>	
<b>OSHA Hazard Communication Standard, 29 CFR 1910.1200</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D):</b>	Not regulated
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):</b>	Crystalline Silica: Listed / <b>Actinolite, Asbestiform:</b> Listed
<b>CERCLA Hazardous Substance List (40 CFR 302.4):</b>	Crystalline Silica: Not listed / <b>Actinolite, Asbestiform:</b> Listed
<b>Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs):</b>	Crystalline Silica: Not listed / <b>Actinolite, Asbestiform:</b> Listed
<b>Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130):</b>	Crystalline Silica: Not listed / <b>Actinolite, Asbestiform:</b> Listed
<b>Safe Drinking Water Act (SDWA):</b>	Crystalline Silica: Not listed / <b>Actinolite, Asbestiform:</b> Listed
<b>Canada Federal regulations:</b>	
<b>NSNR Status:</b>	Listed on DSL or exempt

## SARA 311/312

**Classification:** Delayed (chronic) health hazard

### Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Crystalline Silica (Quartz) CAS 14808-60-7	>1	No	No	No	No	Yes
Actinolite, Asbestiform (CAS 1332-21-4)	0-0.5	No	No	No	No	Yes

## SARA 313 (TRI)

	Product name	CAS number	%
Form R-Report requirements	Crystalline Silica (Quartz) Actinolite, Asbestos	14808-60-7 1332-21-4	Not regulated Regulated

## State regulations

<b>Massachusetts RTK:</b>	The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture); <b>Asbestos</b> (CAS 1332-21-4)
<b>New Jersey RTK:</b>	The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS mixture); <b>Asbestos</b> (CAS 1332-21-4)
<b>Pennsylvania RTK:</b>	The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture); <b>Asbestos</b> (CAS 1332-21-4)
<b>Rhode Island RTK:</b>	<b>Asbestos</b> (CAS 1332-21-4)

## California Prop. 65

WARNING: This product contains crystalline silica and may contain other trace substances (actinolite asbestiform) known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Crystalline Silica (Quartz) CAS 14808-60-7	Yes	No	No	No
Actinolite, Asbestiform (CAS 1332-21-4)	Yes	No	No	No

## International regulations

Ingredient name	CAS #	TSCA	Canada	WHMIS	EEC
Crystalline Silica (Quartz)	14808-60-7	Yes	DSL	D2A	EINECS
Actinolite, Asbestiform	1332-21-4	Yes	DSL	D2A	EINECS

**WHMIS Classification:**

D2A "Materials Causing Other Toxic Effects"



## Section 16. Other Information

**Date of issue:** 12/01/2021  
**Version:** Rev 01

### Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of diabase as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with diabase to produce diabase products. Users should review other relevant material safety data sheets before working with this diabase or working on diabase products.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Lehigh Hanson, except that the product shall conform to contracted specifications. The information provided herein was believed by the Lehigh Hanson to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

### Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists  
CAS — Chemical Abstract Service  
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act  
CFR — Code of Federal Regulations  
DOT — Department of Transportation  
GHS — Globally Harmonized System  
HEPA — High Efficiency Particulate Air  
IATA — International Air Transport Association  
IARC — International Agency for Research on Cancer  
IMDG — International Maritime Dangerous Goods  
NIOSH — National Institute of Occupational Safety and Health  
NOEC — No Observed Effect Concentration  
NTP — National Toxicology Program  
OSHA — Occupational Safety and Health Administration  
PEL — Permissible Exposure Limit  
REL — Recommended Exposure Limit  
RQ — Reportable Quantity  
SARA — Superfund Amendments and Reauthorization Act  
SDS — Safety Data Sheet  
TLV — Threshold Limit Value  
TPQ — Threshold Planning Quantity  
TSCA — Toxic Substances Control Act  
TWA — Time-Weighted Average  
UN — United Nations



# **ATTACHMENT B**

## **LIMITED ACTIVITY EVENTS SAMPLING PLAN**

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### **Introduction**

The Pennsylvania Department of Environmental Protection (DEP) has requested that Hanson Aggregates Pennsylvania LLC (“Hanson”) propose an activity-based sampling plan that simulates low-levels of activity at the Rock Hill Quarry (the “Quarry”).

Hanson plans to conduct limited activities at the Rock Hill Quarry. The limited activities outlined below reflect Hanson’s annual removal of 500 tons of stone at the Quarry. This document proposes the sequence of operations performed, the emission controls employed, and the air monitoring to be conducted.

Please note, this activity does not include crushing, processing, drilling, or blasting activities. These activities and other future activities would require approval from the DEP before construction. Applicable emission controls and monitoring, if necessary and different than those proposed herein, will be proposed at that time.

### **Limited Activity Events**

The following limited activity events are proposed:

1. Equipment delivery (i.e., rubber-tire loader and water truck). Water truck will arrive first to wet roads. The rubber-tire loader will be delivered on a flat-bed trailer and unloaded. Other passenger vehicle traffic will occur on the site that day, obeying the maximum speed limit of 15 miles per hour (mph). Water used from the existing site ponds for dust prevention will be filtered before use in the water truck or sprays. The water truck will remain on-site throughout the 500-ton event and will continue to be used as needed.
2. Material transfer from pile to tri-axle trucks via rubber-tire loader for removal from the site. Approximately 23 tri-axle truck will accomplish the 500-ton minimum removal. Equipment demobilization will be included in this event.
3. Site Maintenance Activities – Clearing of brush and road maintenance, as needed. Hanson has included this optional limited activity event since it is likely that refurbishment of site roads or clearing of brush at the site will be needed at some point in the near future.

### **Emission Controls for Sources:**

Before the activity, Hanson or its representatives will inspect the site for road dust and relative conditions. The inspection will dictate the necessary actions to control emissions before any activity. Also, as part of Hanson’s required pre-task tailgate meetings, discussion points of dust control, visible emissions, asbestos, and procedure for internal notifications and corrective actions in the event that emission controls are not adequate will be discussed with all workers.

As stated in Hanson’s Asbestos Monitoring and Mitigation Plan (AMMP) dated July 6, 2021, submitted to DEP, the control measures to be employed are as follows:

1. Hanson will use a state-of-the-art street sweeper to clean paved roads before other equipment arrives at the Quarry during and after each limited activity, if deemed necessary.

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### **LIMITED ACTIVITY EVENTS SAMPLING PLAN**

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2. All internal site roadways to be used during the limited activity will be adequately wetted using a water truck before any vehicle traffic, including delivery of the equipment (i.e., rubber-tire loader).
3. The storage pile(s) will be adequately wetted in the area where the material will be removed during the loading activity.
4. The material will be loaded into the truck and the minimum drop height possible.
5. Via the water truck or equivalent methods, additional water application will be completed as necessary if the newly exposed aggregate shows signs of dryness.
6. Tri-axle truck wheels will be washed off using the water truck spray or other equivalent method before exiting the site.
7. Tri-axle truck loads will be properly tarped before exiting the site.
8. Water will be applied to control dust by increasing the moisture content of the material. Increasing the moisture content will prevent dust from becoming airborne instead of suppression, which involves knocking down dust already airborne.

### **Sequence of Air Monitoring During Limited Activity Events**

Hanson or its representatives will follow the air monitoring plan outlined in the AMMP.

Before any activity starts, monitors will be set up at the same eight (8) locations identified in Hanson's AMMP, which were used previously in the five (5) background sampling events conducted in 2021. Air sampling will be initiated before any activity starts in order to obtain the necessary air volume to obtain the required accuracy. Air monitoring will occur during the three (3) proposed limited activity events: during (1) site-staging, (2) the 500-ton removal event, and (3) maintenance activities. Wind Direction and Speed will be periodically recorded during all air monitoring events using a handheld instrument onsite and from the nearby Penridge Airport.

#### **1. Site Staging**

Air monitoring will be conducted when equipment is delivered to the Quarry and for the remainder of the day to obtain the necessary sample volume. No other activities will be conducted at the site until the results of the first monitoring event are received and submitted to DEP.

After the results are reviewed and verified not to exceed the proposed corrective action thresholds, air monitors will be placed and started before removing the 500 tons of crushed aggregate from the site.

#### **2. 500-ton Removal Event**

Following site staging monitoring and assessment, Hanson will remove 500-tons from existing stockpiles at the Quarry, which is expected to take one (1) day. Hanson anticipates that activities and sampling during this stage will occur 10-14 days following site-staging activities and related lab analysis.

Site activities during this limited activity operations event will include the following:

- Street Sweeper
- Driving equipment at Quarry (rubber-tired loader, tri-axle trucks, water truck)
- Use of equipment (i.e., material transfer from rubber-wheeled loader to tri-axle trucks)
- Use of water truck to wet aggregate piles, site roads and wash off tri-axle tires

## **ATTACHMENT B**

### **LIMITED ACTIVITY EVENTS SAMPLING PLAN**

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- Loading the rubber-tire loader onto the flat-bed trailer and demobilizing from the site. The rubber-tire loader will be washed off prior to loading and all truck tires will be washed off prior to leaving the site

As noted above, unless required and approved in advance by DEP, Hanson's activities will not include the crushing or processing of any aggregate materials, any blasting activities, or the use of drilling machinery.

During removal of the 500 tons of material, an observer trained in the visible emissions method will monitor site work to determine if any visible emissions are generated during any of the activities. If visible emissions are noted, the operations will be temporarily halted, and additional control measures will be implemented as appropriate. Once the control measures are considered adequate, the operations will resume.

#### **3. Site Maintenance**

An additional limited activity event that may need to occur consists of site maintenance work on quarry roadways or vegetation clearing. A full round of air monitoring would be completed during this limited activity event. Hanson will apply water to site roads and materials (i.e. crushed aggregate) as needed to prevent potential dust from becoming airborne in areas where maintenance activities are occurring. Hanson anticipates utilizing small skid-steer equipment to accomplish site maintenance.

Note: If the results of air monitoring during any of the three (3) above-referenced limited activity events indicate an exceedance of the corrective action thresholds, the cause(s) will be investigated and corrective measures taken before subsequent activity commences at the Quarry.