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January 4, 2018

Project No. 152596A

Pennsylvania Department of Environmental Protection
Cambria District Office
286 Industrial Park Road
Ebensburg, PA 15931
ATTN: Mr. Chad Paronish, Geologic Specialist

**Response to Pre-Application Technical Review Letter
Northern Tract Quarry
Specialty Granules LLC
Hamiltonban Township, Adams County, Pennsylvania**

Dear Mr. Paronish:

On behalf of Specialty Granules LLC (SGI), D'Appolonia Engineering Division of Ground Technology, Inc. (D'Appolonia) and Skelly and Loy, Inc. (Skelly and Loy) are providing responses to the letter dated June 23, 2017 from the Pennsylvania Department of Environmental Protection – Cambria District Mining Office (PADEP), and associated correspondence, which included a technical and completeness review of the pre-application for the proposed Northern Tract Quarry. Each of the review comments from the June 23, 2017 letter is reproduced in subsequent pages of this letter with D'Appolonia's, Skelly and Loy's, and SGI's responses following each comment in bold font.

MODULE 1

1. Section C -Site Information: Revise section C to include the correct operation/site name to be consistent with the Exhibits submitted with the application. Currently, section C shows the operation/site name to be "Northern Tract" and the Exhibits show "Northern Tract Quarry". Also, see Module 8 comment number 3.

The permit modules and related documents have been revised to reference the “Northern Tract Quarry” as requested.

2. Section C -Site Information: Revise the name(s) of receiving stream(s)/Chapter 93 Classification to include the Unnamed Tributaries to Toms Creek.

Reference to the unnamed tributaries of Toms Creek have been added to Section C as requested.

3. Section C -Site Information: Revise the acres shown in the Mining Area to include the rock/mineral removal of the acreage shown outside of the proposed permit area located between the proposed permit area and the adjacent Pitts Quarry, SMP No. 01930302. Also, see Module 9 comment number 2. (77.452)

The referenced rock/mineral removal area will be included in a revised permit for the Pitts Quarry, given that this area is located within the Pitts Quarry permit area. Since the rock/mineral removal area is located outside of the Northern Tract Quarry permit area, we feel that this area should not be added to the Northern Tract Quarry permit. The Pitts Quarry permit will be revised and submitted subsequent to approval of the Northern Tract permit application.

4. Section H - Additional Related Information: Revise Section H "Additional Related Information", number 5 to include the Pre-Application No. 01170301. This pre-application number will become the SMP number when the full application is submitted.

Section H has been revised to include the pre-application number as requested.

5. Provide correspondence from the U.S. Fish and Wildlife Service in regards to Indiana Bat and the historic copper shaft shown on the attached Photograph 4 of the January 29, 2016, Threatened and Endangered Species Coordination Letter. The photograph description indicates that the historic copper mine shaft meets criteria for potential bat hibernaculum. (77.126(a)(IO))

Correspondence with the U.S. Fish and Wildlife has already occurred as a result of the PNDI search that was completed for the facility. A Threatened and Endangered Species Coordination Letter was submitted to the U.S. Fish and Wildlife Service (USFWS) by Skelly and Loy, Inc. on January 29, 2016. The USFWS responded in a letter dated February 18, 2016. In this letter, the USFWS indicated that the presence of the bog turtle (*Clemmys muhlenbergii*) on the project site be evaluated. Skelly and Loy completed the Phase I Bog Turtle Habitat Assessment and submitted the associated report to the USFWS on April 8, 2016. Skelly and Loy indicated that the Northern Tract site does not contain typical habitat which would support the bog turtle. This report was approved by the USFWS on May 11, 2016. These

documents were provided to the PADEP with the Northern Tract permit application submittal under Module 1.

At the request of the PADEP, Skelly and Loy submitted another letter to the USFWS on July 31, 2017 requesting a supplemental PNDI review to extend the expiration date of the previously submitted PNDI review. The July 2017 letter emphasized that the project is located within range of a listed bat species. That letter also discussed the opening that may have been associated with a former copper mine operation, and provided related photographs. The USFWS provided a response on August 14, 2017, again indicating that they concurred with the previously completed bog turtle survey and not indicating any concern with respect to bat species.

It is our current understanding that these two Threatened and Endangered Species Coordination Letters provided sufficient data for the U.S. Fish and Wildlife Service to make an assessment regarding bats. Per the USFWS's responses to the February 2016 and July 2017 coordination letters, the listed bat species and former copper mine feature were not identified as a concern to the USFWS.

Out of an abundance of caution, SGI engaged qualified bat survey professionals employed by Western EcoSystems Technology, Inc. ("WEST") to perform an evaluation and mist-net survey to determine the presence or probable absence of federally-listed Indiana bat ("INBA"; *Myotis sodalis*) or northern long-eared bat ("NLEB"; *Myotis septentrionalis*) at the former mine shaft. The results of that evaluation are presented in the attached report entitled "Abandoned Mine Shaft Mist-Net Surveys Adams County, Pennsylvania." As set forth in that report, mist-net surveys conducted on three separate nights in October 2017 following USFWS and Pennsylvania Game Commission protocols found only one bat, which was not of a listed species. WEST's report concludes that: "Based on the results of this survey, there is no evidence that the abandoned mine shaft was utilized as a hibernaculum by INBA or NLEB." A copy of that report has been forwarded to the USFWS and the Pennsylvania Game Commission.

6. A review of the conditional use application with Hamiltonban Township indicates that the applicant will implement all the conditions agreed upon in the narrative to the conditional use permit and the additional conditions sections of the agreement. Note that these conditions must be met prior to the submittal of the final permit application.

Many of the conditions in the Hamiltonban Township conditional use zoning permit are associated with proposed quarry operations at the site and with post-mining reclamation and land uses. Therefore, these conditions cannot

possibly be met prior to submission of the final permit application. However, SGI is committed to comply with those zoning permit conditions, and Hamiltonban Township will have the opportunity to review and comment on the mining plans throughout this mining permit application process.

MODULE 2

1. Application for Individual NPDES Permit Associated with Mining Activities: Revise item number 4, Operation Name, to include the correct operation/site name to be consistent with the Exhibits submitted with the application. Currently, item number 4 shows the operation/site name to be "Northern Tract" and the Exhibits show "Northern Tract Quarry". Also, see Module 1, comment number 1 and Module 8, comment number 3.

The NPDES permit application provided with Module 2 has been revised to reference "Northern Tract Quarry" as requested.

MODULE 6

1. Module 6.2: Environmental Resource Map (e): Identify which buildings are occupied dwellings on the Exhibit 6.2 Map. (77 .410)

Occupied and unoccupied dwellings have been identified and distinguished from each other as shown on the legend.

2. Module 6.2: Environmental Resource Map (s): Show clearly on the Exhibit 6.2 Map the location of the existing monitoring wells for the adjacent Pitts Quarry, SMP No. 01930302. (77.410)

Exhibit 6.2 has been updated as requested.

MODULE 7

1. Module 7.1 Stratigraphy (b): Revise the geologic logs provided for each test hole to be reported on the Department's Geologic Log Drill Holes/Overburden Analysis Data form 5600-PM-BMP0403. (77.404)

Module 7 indicates that "geologic logs of test holes or equivalent information on attached data sheet..." should be attached. We understand that Module 7 and 25 Pa. Code Chapter 77 do not require that a specific format be used to tabulate geologic information. Therefore, the previously submitted geologic logs have been revised to include the information requested as part of the department's 5600-PM-BMP0403 form, but the original logs were still used.

2. Module 7.1 Stratigraphy (b): Provide the measured groundwater elevations for each test hole and piezometers on the 7.1 (B) Geologic Logs. (77.404(1)(5))

Drilling mud was used to facilitate drilling of the exploratory core holes (NT-13-01, NT-13-02, NT-13-03, etc.) and monitoring wells (MW-8S, MW-8D, MW-9D, etc.) at the site. As such, any water level data measured during or shortly after the drilling activities would be reflective of accumulated water and drilling mud added to the borehole. These measured water levels would not be an indicator of the existing groundwater levels. The measured water levels for the monitoring wells are provided on the Module 8.1(A) forms provided in Module 8. Therefore, the geologic logs have not been revised.

3. Module 7.1 Stratigraphy (b): Provide the 7.1(B) Geologic Logs for the following test holes shown on the Exhibit 6.2: Environmental Resources Map: ITB-2, ITB-4, ITB-7, ITB-9, ITB-11, ITB-13, ITB-15, ITB-17, ITB-19, ITB-20, ITB-20A, ITB-21, ITB-21A, ITB-22, ITB-23, ITB-25, ITB-27 through 29, and ITB-31 through 34. (77.404)

The “ITB” series borings are infiltration test borings that were completed to evaluate the infiltration properties of the existing overburden soils at the site. These borings were completed at relatively shallow depths and do not provide significant information regarding the site stratigraphy. However, these boreholes have been included with the application and are attached to this module for reference.

4. Module 7.1 Stratigraphy (b): Provide the 7.1 (B) Geologic Logs for the following piezometers shown on the Exhibit 6.2 Environmental Resources Map: ITB-I-PZ, ITB-3-PZ, ITB-5-PZ, ITB-6-PZ, ITB-8-PZ, ITB-10-PZ, ITB-12-PZ, ITB-14-PZ, ITB-16-PZ, ITB-18-PZ, ITB-24-PZ, ITB-26-PZ, ITB-30-PZ, ITB-34A-PZ, ITB-36-PZ, and ITB-38-PZ. (77.404)

The “ITB” series borings are infiltration test borings that were completed to evaluate the infiltration properties of the existing overburden soils at the site. Piezometers were established at the completion of the borings as a means to monitor shallow, perched groundwater levels. Logs for these boreholes have been included with the application per the previous Item 3.

5. Module 7.1 Stratigraphy (b): Provide the 7.1(B) Geologic Log for the test hole identified as NT-13-07 on the Exhibit 6.2: Environmental Resources Map. (77.404)

The boring log for NT-13-07 is attached to Module 7 as requested.

6. Module 7.5 Mine Workings and Solid Waste Sites: A field review noted an abandoned underground copper mine entrance located within the proposed mining area. The copper mine entrance is located at N39° 46' 05.3", W77° 26' 25.9" approximately 100 feet to the east of test hole identified as NT-13-13. Add the abandoned mine to Surface and Underground Mines Table and key the location to Exhibits 6.2, 9, and 18. Also, see Module 9, comment number II. (77.410(a)(13))

The abandoned copper mine exploration adit has been added to the permit drawings as requested.

MODULE 8

1. Module 8.1 Chemical Analysis: Revise the form 8.1(A) for the private water supplies identified as Shank and Holbrook to be consistent with the sample point identification numbers 16A16 and 07A16 shown on the Exhibit 6.2: Environmental Resources Map. (77.410(a)(5))

The 8.1 (A) forms have been revised in accordance with the numbering system shown on Exhibit 6.2.

2. Module 8.1 Chemical Analysis: Revise the Module 8.1(A) forms to check the monitoring report box for all proposed monitoring points. (77.532)

The Module 8.1(A) forms for each monitoring point have been revised to check the monitoring report box.

3. Module 8.1 Chemical Analysis: Revise the operation name on the Module 8.1(A) forms to be consistent throughout the permit application. Currently, the operation name is "Northern Tract" and the Exhibits show "Northern Tract Quarry".

The operation name on the Module 8.1 (A) forms has been revised to identify the site as, "Northern Tract Quarry," which is now consistent throughout the application.

4. Module 8.2 Background Sampling and Monitoring (a): Provide the Module 8.1(A) form for the sample point identified as SP-2 shown on the Exhibit 6.2: Environmental Resources Map that lies within 1,000 feet of the proposed permit area. The background samples for SP-2 should be the same background samples that were provided for the adjacent SMP No. 01930302. (77.406)

As discussed via telephone on December 5, 2017, there is no available background sample data for SP-2 from the adjacent permit. SP-2 is located at the weir spillway outlet of Sediment Trap #2 at the Pitts Quarry. It is a manmade feature that collects surface runoff from previously mined area

and is not necessarily representative of the local or regional groundwater. Also, Sediment Trap #2 is temporary and will be decommissioned upon cessation of mining at the Pitts Quarry. Therefore, this point has not been included in the sampling plan.

5. Module 8.2 Background Sampling and Monitoring (a): Provide two (2) monthly background samples that include measured flows for the following background sampling points: SS-Lower Seep, W-Wetland C, W-Wetland D, SS-Upper Seep, SS-PFO-Wetland, SS-DCNR Seep I, and SS-DCNR Seep 2. (77.406(b)(1)(2)(3))

“ND” or not detectable was indicated for this value in the corresponding reporting form for each sampling point indicated. Conditions at the time of sampling for each location were such that no flow could be measured (i.e. there was no flow or the rate of flow was below the threshold of detection). The Module 8.1(A) forms for the above referenced background sample points have been clarified to more specifically indicate the flow conditions observed during each sampling event. The previously submitted background sampling data is considered applicable to this permit application and no new data is being provided.

6. Module 8.2 Background Sampling and Monitoring (a)(3): Revise item 3 to include the existing spring/seep identified as SP-2. (77.406)

As discussed in No. 4 above, SP-2 is not being included in the background sampling program.

7. Module 8.2 Background Sampling and Monitoring (a)(4): Revise item number 4 to include the impoundment identified as W-Pond 1 that is located within 1,000 feet to the Northwest of the proposed permit area. (77.406)

Item Number 4 has been revised to include W-Pond 1.

8. Module 8.2 Background Sampling and Monitoring (a)(8): Provide background samples for the private water supplies that are within 1,000 feet of the proposed permit area for the following properties identified on the Exhibit 6.2: Environmental Resources Map: 19-A16, 95A-B16, 99-B16, 99A-B16, 95-B16, and 96-B16. (77.405)

Documentation (copies of certified letters) for all requests for sampling is attached, including those for the above properties. Of the 11 letters originally sent to the surrounding property owners, only four owners replied indicating that they would like to participate in the sampling program, including 16-A16, 07-A16, 95B-B16, and 05-B15 (05-B15 is the DCNR property where surface water samples were collected). Background

sampling was completed for three of these four properties. Sampling for the 95B-B16 property is being coordinated with the well owner and is anticipated to begin in January 2018. The structure on property 96-B16 is located outside the 1,000 foot barrier from the proposed permit area and it is unknown whether or not there is a well on this parcel (a field recon from the road did not reveal the presence of a well and a previous well inventory conducted by URS did not document a well on this parcel). Skelly and Loy called this property owner, Mr. Eric Shaffer, and left a detailed message requesting access to sample his private water supply. The owner did not return our call, so a certified letter was sent to him on October 10, 2017 (attached). A return receipt was received; however, no response has been received to date from the property owner.

9. Module 8.2 Background Sampling and Monitoring (a)(8): Provide a Module 8.1 (a) form and update the Module 8.2(a)(8) Private Water Supply Information for the following existing private water supplies shown on the Exhibit 6.2 Environmental Resources Map: 15A16, 95BB16, 97B16 and 60B16. The background samples for each point should be the same background samples that were provided for the adjacent SMP No. 01930302. (77.405)

As discussed via telephone on December 5, 2017, there is no available background sample data for the above-referenced private water supplies. As discussed in No. 16 below, the applicant has added 15A16 into the proposed monitoring program and Module 8.2(b)(6) has been revised accordingly. Also, six new months of background sampling results are currently being collected for 15A16, results to date of which are provided on the enclosed Module 8.1 (A) forms.

Parcel 60B16 is located significantly outside the 1,000 foot buffer and therefore SGI will not sample this location.

For Parcel 95BB16, a certified access letter was sent (in August, 2016) and the property owner did not respond to our request for access. An additional letter was sent requesting access on 12/19/17. This property owner subsequently responded on December 20, 2017 indicating interest in participating in the water sampling program. Per a previous comment, arrangements are being made to conduct sampling at this property.

It is our understanding that 97B16 is currently abandoned, but an access request letter was sent on 12/19/17.

Copies of the access request letters, and corresponding responses, are attached to Module 8.

10. Module 8.2 Background Sampling and Monitoring (b): It is noted that the monitoring wells MW-9S and MW-9D will be abandoned during Phase 3 of the erosion and sediment control plan to accommodate the installation of NT Pond No.2. The pond location should be relocated to preserve these monitoring wells. If the monitoring wells are unable to be preserved, the monitoring wells will be required to be replaced prior to their abandonment. The replacement wells must be developed within the same interval as MW-9S and MW-9D and at a location that is structurally down gradient on the eastern section of the proposed permit area. Show the location of the replacement monitoring wells on the Exhibit 6.2, and 9 Maps. (77.532)

Exhibits 6.2 and 9 maps have been revised to show the proposed location for the replacement monitoring well, MW-9R. Monitoring wells MW-9S and MW-9D will be replaced at the locations shown.

11. Module 8.2 Background Sampling and Monitoring (b): It is noted that the monitoring well MW -13D will be abandoned during Phase 2 of the erosion and sediment control plan to accommodate the installation of NT Pond No.1. The pond location should be relocated to preserve this monitoring well. If the monitoring well is unable to be preserved, a replacement monitoring well will be required to be developed prior to the abandonment of MW-13D. The replacement monitoring well must be developed within the same interval as MW-13D and located within 100 feet of MW-13D on the western section of the proposed permit area. Show the proposed location of the replacement monitoring well on the Exhibit 6.2, and 9 Maps. (77.532)

Exhibits 6.2 and 9 maps have been revised to show the proposed location for the replacement monitoring well, MW-13R. Monitoring well MW-13D will be relocated at the location shown.

12. Module 8.2 Background Sampling and Monitoring (b): Provide six (6) monthly samples that include flow measurements for each sampling event for the monitoring point W-Pond 1. (77.406 9b)(1)(2))

“ND” or not detectable was indicated for this value in the corresponding reporting form for each sampling point indicated. Conditions at the time of sampling for each location were such that no flow could be measured (i.e. there was no flow or the rate of flow was below the threshold of detection). The Module 8.1(A) form for the above referenced background sample point has been clarified to indicate more specifically the flow conditions (i.e., no flow) observed during each sampling event with the permit submittal. The previously submitted background sampling data is considered applicable to this permit application and no new data is being provided.

13. Module 8.2 Background Sampling and Monitoring (b): Provide six (6) consecutive monthly static water elevation measurements from each monitoring well that coincide with six (6) monthly flow measurements from each surface water monitoring point. The additional sampling and groundwater measurements should include the month of August, September, or October. (77.405(1)) (77.406(b)(1)(2))

Sampling of the existing monitoring wells at the Northern Tract (MW-8S/D, MW-9S/D, MW-10D, MW-11D, MW-12D, MW-13D, MW-14S, and MW-14D) was completed by another engineering consultant beginning in April 2015. More recent water sampling and testing at the Northern Tract site was conducted beginning in July 2016. Based on previous correspondence with the PADEP, we understood that the previously completed monitoring well background data, although collected during a time interval that did not coincide with the more recently information, could be used to supplement this permit application. However, data from three months of consecutive monthly static water elevation measurements for each monitoring well that coincide with monthly flow measurements from each surface monitoring point are attached as requested. As discussed, no additional quality data was requested.

14. Module 8.2 Background Sampling and Monitoring (b): Include the existing sample point identified as SS-4 into the proposed monitoring plan as a midstream monitoring point for Toms Creek. Install a staff gauge on the bridge located on Mt. Hope Road to allow for stream flow monitoring of Toms Creek and provide the required six (6) monthly background samples that include flow measurements using the staff gauge. (77.406(b)(1)(2)(3))

SS-4 has been added to the proposed monitoring plan as a midstream monitoring point. Six total months of consecutive background sampling results are currently being collecting, results to date of which are enclosed.

SGI does not intend to install a staff gauge at the Mt. Hope Road bridge. The referenced section of the Pennsylvania Code (77.406) does not appear to require specific data collection or instrumentation methods. The current monitoring method (Marsh McBirney flow meter) is a more accurate means of data collection and is consistent with the flow collection method for all other surface monitoring locations.

15. Module 8.2 Background Sampling and Monitoring (b): Add the private water supply identified as 16A16 to the monitoring program and collect the required six (6) monthly background samples. Revise the Exhibit 6.2: Environmental Resource Map to include 16A16 as a monitoring point. (77.405) (77.532) (77.410(a)(6))

The operator proposes to use monitoring well MW-10D located in proximity to 16A16, in lieu of 16A16, which is a private water supply. In addition, per Comment No. 17 below, the applicant will commit to adding MW-9D and MW-8D into the monitoring program, both of which are located along the eastern permit boundary. The applicant is opposed to using a private water supply as a long-term monitoring point due to potential issues that could arise from not having control of the well. For example, differential static water levels may be observed due to unknown water usage at time of or prior to collection, ownership/access permission issues/changes, and/or inadvertent or deliberate contamination of the water in the well.

16. Module 8.2 Background Sampling and Monitoring (b)(6): Revise item 6 to include the private water supplies identified as 16A16, 07A16, and 15A16. (77.405)

For reasons discussed in Comment 15 above, SGI will not include the private water supplies 16A16 and 07A16 as part of the monitoring program. Monitoring well MW-10D will serve as a suitable surrogate for monitoring conditions in the vicinity of 16A16, and MW-13D and 15A16 should serve as suitable monitoring surrogates for 07A16. The applicant has added 15A16 into the proposed monitoring program and Module 8.2(b)(6) has been revised accordingly, as SGI does own this parcel. Also, six months of background sampling are currently being collected for 15A16, results to date of which are being provided.

17. Module 8.2 Background and Monitoring (b): Include all monitoring wells in the monitoring program and revise the Exhibit 6.2: Environmental Resources Map to show the monitoring wells as monitoring points. The monitoring wells will be required to have quarterly static water elevations recorded with monthly static water elevation measurements taken as the quarry advances below the base flow of the Unnamed Tributaries to/and Toms Creek. In addition, one annual sample will be collected in conjunction with a static water elevation for quality analysis. (77.532)

The operator proposes to include the following monitoring wells in the monitoring program: MW-13D, MW-11D, MW-10D, MW-9D, and MW-8D. In addition, as discussed above, the private water supply well located on

Parcel 15A16 will be added into the plan, totaling six locations surrounding the proposed quarry for groundwater elevation and quality measurements. Note that previously-proposed MW-14D has been eliminated from the proposed monitoring plan (and replaced with MW-13D) because MW-14D is located in such close proximity to 15A16 (less than 100 feet). We believe that this revised proposed sampling program provides ample coverage around the perimeter of the proposed Northern Tract Quarry to adequately monitor static water levels in the vicinity of the mining operation and detect any potential changes in groundwater conditions. Incorporating additional sample points into the plan would be redundant.

18. Module 8.3 Groundwater Information: In order to mine below the projected Northern Tract Quarry water table, which is known at this point, the following items must be addressed:

- a. Provide a deep monitoring well at maximum cover within the proposed mining area that is drilled to an elevation of 695 feet and is developed within the same interval as the existing deep monitoring wells. Provide (6) monthly background samples and groundwater measurements. (77.403) (77.405)

The installation of a well in the proposed quarry area for the purpose of obtaining water level data would not likely provide any additional data that would be useful in determining groundwater impact to the surrounding area from establishing and dewatering the quarry. Water level data collected from existing bedrock monitoring wells located along the perimeter of both the existing Pitts and proposed Northern Tract Quarries have historically demonstrated a very strong correlation with local surface topography. Throughout the period of record (2000-2016), only minor fluctuations in the depth to water have been recorded in these monitoring wells resulting in correspondingly minor deviations in both the regional and secondary (local) groundwater flow directions within the bedrock. The semi-radial groundwater flow direction in the bedrock closely mimics surface topography which variably slopes moderately to steeply from the higher elevations at the center of the Northern Tract area to the northwest, north, northeast, and east toward discharge areas situated at lower elevations along the unnamed tributary and Toms Creek (Stream Reaches A, B and C in the model report).

Based on the high degree of correlation between these water level data, hydraulic gradient mapping of the potentiometric surface, and predictive simulations performed using the groundwater model, the proposed Northern Tract Quarry perimeter wells were found to provide depth to water data consistently representative of the observed groundwater elevations and hydraulic gradients observed in the bedrock throughout

the proposed Northern Tract Quarry area. As a result, the existing Northern Tract Quarry perimeter wells are judged to be effective for evaluating the impacts to surrounding areas from the proposed development of the Northern Tract quarry.

Additionally, the maximum cover area of the quarry will be the first area to be stripped and mined and as a result, the new well would require removal/abandonment in the short term. Monitoring of the water levels to determine impact from the mining of the proposed Northern Tract Quarry from this point forward will be made from the perimeter monitoring well network that currently exists on the site. The new well would not provide any meaningful data relative to the quarry dewatering impacts.

- b. Provide a shallow monitoring well at maximum cover within the proposed mining area that is developed from bedrock to the bottom elevation of MW-9S (973 feet). Provide six (6) monthly background samples and groundwater measurements. (77.403) (77.405)

Refer to Item 18.a above.

- c. Apply the calibrated groundwater model for the proposed Northern Tact Quarry to the active Pitts Quarry now, and again when the Pitts Quarry reaches maximum mining depth to determine the validity of the model and input parameters. Compare the model predicted quarry pumping rates to actual pumping rates obtained from the Pitts Quarry for 2017 and provide these results with the full permit submittal. (77.403(b))

The recent groundwater model evaluation (Groundwater Model Report – Evaluation of Potential Expansion Impacts, SGI Charmian Facility, Proposed Northern Tract Quarry, Blue Ridge Summit, Pennsylvania dated December 19, 2017), included with this permit submission, was calibrated to the active Pitts Quarry level elevation of 1040 ft-amsl and the associated groundwater elevation data for this time period (12/30/13 through 12/1/14) for the purpose of validating the accuracy of the groundwater model. Based on this calibration, the Pitts Quarry is pumping a negligible amount of groundwater to dewater the quarry (9 gpm). Based on observations at the quarry, very little pumping has been reported, and when pumping does occur it is associated with the removal of storm water runoff, not groundwater.

Completing a new calibration of the model once the Pitts quarry reaches the maximum depth will require the quarry operations to first reach the maximum depth in the Pitts Quarry along with an associated set of groundwater level measurements at that time in nearby monitoring wells for comparison. This is not anticipated to occur for many years. Secondly, this calibration will have no impact on the accuracy of the current calibration.

Per the PADEP's request, and to confirm the validity of the groundwater model, SGI collected flow data from the pumping system established in the Pitts Quarry sump for use in estimating the groundwater infiltration rate into the quarry. Flow data was collected from June 6, 2017 to August 29, 2017 to provide a representative set of data. A calculation, provided as an attachment to Module 8, was completed to roughly equilibrate the water balance at the Pitts Quarry. The primary inflow sources were considered to be precipitation and groundwater infiltration. The primary sources of water loss were assumed to be pumping from the quarry sump and evaporation. Based on the completed calculation, the approximate groundwater infiltration rate into the Pitts Quarry was determined to range from 1 to 9 gallons per minute (gpm). The anticipated groundwater infiltration rate determined by the groundwater model report was 9 gpm. Therefore, the observed pumping conditions at the Pitts Quarry correspond well with the predicted groundwater infiltration conditions determined by the groundwater model.

- d. Establish, through exploration, that the values used for the hydraulic conductivity and recharge in the groundwater model are representative of the site. (77.403) (77.405)

Metabasalt and Metarhyolite are relatively low permeability (low hydraulic conductivity) rock materials known to have poor intrinsic porosity (pore space available for transmitting water). Aquifer testing (pumping and slug testing) has been completed at the site producing site-specific values that were relied upon to develop the groundwater model. Based on the observed site conditions and characteristic low permeability of the bedrock, extended constant rate discharge aquifer testing at this site is not feasible for providing estimates of hydraulic conductivity. Slug testing and short duration pumping test methods provide a more adaptable method to these types of site conditions and are often used to provide reliable estimates of hydraulic conductivity. Given these

constraints, slug testing and short duration pumping test results were used to create the representative aquifer hydraulic input parameters necessary for constructing the groundwater model.

Recharge is not a value that can be evaluated through exploration, but a hydraulic parameter typically evaluated on a regional watershed basis. This parameter is typically based on measured rates of precipitation, stream flow, surface runoff, etc. These values are published by the USGS and are used as a starting point in the groundwater model. The groundwater model provides an evaluation tool that is much better suited to refining a regional recharge rate to match site-specific conditions than any type of site exploration or evaluation method. The amount of site-specific recharge is essentially defined as the hydrologic balance between the amount of water moving into the model domain (recharge) and water leaving the model domain (discharge). As such, the rate of site-specific recharge must closely match the measured groundwater elevations recorded in both the nearby wells and stream flow rates. As stated in the groundwater model report, a regional recharge rate was initially used with the site-specific recharge rate refined by adjusting the recharge rate until the resultant monitoring well groundwater levels and adjacent stream flows closely matched existing site conditions.

We are not aware of any other exploration methods that can be used to enhance the groundwater model.

- e. Identify the four core holes mentioned in the Groundwater Model Report and provide the measured groundwater elevations that were collected from each of the four core holes. (77.405)

The referenced core holes mentioned in the Groundwater Model Report and measured groundwater elevations recorded from the core holes from December 20, 2013, through December 1, 2014, are provided in the following table. These corehole locations are shown on Exhibit 6.2, Environmental Resources Map.

Corehole ID	Northing	Easting	Total Depth	Ref. Elev. (ft amsl)	Groundwater Elevation in ft amsl				
					12/20/13	1/20/13	2/27/14	3/20/14	12/1/14
NT-13-07	158414.736	2055800.094	470	1203.63	1189.63	1189.89	1190.57	1189.98	1183.81
NT-13-08	157759.381	2055732.667	305	1085.28	1073.82	1075.43	1077.42	1075.18	1073.14
NT-13-09	157283.320	2055441.849	101	1139.45	1101.87	1110.07	1113.38	1110.27	1090.57
NT-13-12	158460.809	2055051.874	280	1222.99	1152.50	1160.37	1162.78	1159.74	1148.98

- f. Provide the calibration redistribution map for the recalibrated groundwater model. (77.403(b))

The requested calibration redistribution map has been provided as Figure 11 in the revised groundwater model report.

- g. Provide the normalized root mean square (RMS) percent error for the measured groundwater head calibration data from the groundwater model. (77.403(b))

Table 7 of the groundwater model report has been updated with the requested information.

- h. Complete and aquifer test for the following monitoring wells: MW-1, MW-2, MW-3R, MW-4R, MW-5, MW-6, MW-7, and MW-8S. (77.403) (77.405)

For reasons already discussed, additional aquifer testing is not necessary. In addition to Skelly and Loy's pumping tests inclusive of all Northern Tract perimeter wells, URS had previously completed aquifer tests of wells MW-3R, MW-4R, MW-5, and MW-7 surrounding the Pitts Quarry from March 1 through 4, 2011. These test results were previously provided to DEP's CDMO in URS's Hydrogeologic and Hydraulic Analysis Report of December 2012. Attached please find copies of these URS aquifer testing results.

- i. Provide the aquifer test results in support of the hydraulic conductivity values for each monitoring well. (77.405(b))

Results of the aquifer testing results for the Northern Tract perimeter wells and aquifer testing results referenced in our response to comment 18.h above for the wells tested in the vicinity of the Pitts Quarry by URS from March 1 through 4, 2011.

19. Module 8.6 Hydrologic Assessment (a): Provide the specific capacity test results for the private water supplies Shank PWS (16A16) and Holbrook PWS (07 A16). (77.532(b))

The results of the specific capacity tests are now included in Module 8.6 (a) for the referenced private water supplies. Note that the above parcel IDs for Shank and Holbrook should be reversed. Shank is 07A16 and Holbrook is 16A16.

20. Module 8.6 Hydrologic Assessment (b): Provide the reported seepage rate (pumping rate) observed in the Pitts Quarry. A field review conducted on March 29 documented that the current pit elevation for Pitts Quality was 990 feet on the seventh level of mining. It was also observed that the active pit had considerable pit water accumulation. (77.403) (77.532)

Per the response to Comment 18.c under Module 8, flow rates for the pumping system in the Pitts Quarry were observed for a roughly 3 month period in order to facilitate estimation of the groundwater infiltration rate. These calculations are provided as an attachment to Module 8.

MODULE 9

1. Module 9: Operations Map: Revise Note #1 on all phases of the operation map. If changes are made with access ramps and highwalls associated with developing the mine which impact the E & S designs, the operator will submit to the Department the revised, Exhibit 9, Operations Map (all phases) along with the E & S changes and design calculations for approval. (77.454 (6))

Note #1 for the Operations Map has been updated as requested.

2. Module 9: Operations Map (b): Revise the proposed permit area to include the mining shown southwest of the permit area, between the proposed permit area and the adjacent Pitts Quarry, SMP No. 01930302. (77.454 (a)(I))

The existing permits for Pitts Quarry will be amended to include the mining area southwest of the proposed permit area for the Northern Tract Quarry. As such, the permit boundary for the Northern Tract Quarry will remain unchanged.

3. Module 9: Operations Map: Revise Note #2 on **all phases** of the operations map. If NT Ponds No.1 and/or No.2 would need to be breached due to the quarry footprint advancement, the Operator will not breach any NT Ponds without written approval from the Department. Breaching these ponds may impact the adjacent Tom's Creek, which is classified as a High-Quality Stream. (77.454 (6))

Note #2 on the Operations Map has been updated as requested.

4. Module 9: Operations Map (c): Show the required 100-foot stream barrier in the permit area parallel to unnamed tributary to Tom's Creek along Iron Springs Road and parallel to Tom's Creek. A variance is required to impact any area within the 100-foot stream barrier. (77.126)

The unnamed tributary to Tom's Creek has been given a labeled 100-ft. offset barrier.

5. Module 9: Operations Map (e): Show the required 300-foot occupied dwelling barriers, unless released by the owner thereof. Several houses along Iron Springs Road may impact the permit area with the 300 feet barrier requirement. Also, the dwelling near Monitoring Wells 14S and 14D will need to show the 300 feet barrier if the dwelling is occupied. Also, please differentiate between an occupied dwelling and an unoccupied structure on the operations map. Presently, all structures look the same. (77 .126)

The 300-foot occupied dwelling barriers have been added as requested. Occupied and unoccupied buildings have been distinguished via color-coding as shown on the legend. The dwelling near Monitoring Wells 14S and 14D is owned by SGI and is currently unoccupied.

6. Module 9: Operations Mao (f): Show the 100-foot barrier of the outside right-of-way line of a public highway. The 100 foot barriers along Iron Springs Road and Gum Springs Road may impact the permit area. (77.126)

All public highways within the permit area have been given 100-ft. barriers.

7. Module 9: Operations Map (f): Provide the names of all the public roads shown within 1000 feet of the permit area. Presently, Mt. Hope Road, Pete's Lane and Emory Lane are not labeled on the operations map. (77.410)

Mt. Hope Road, Pete's Lane, and Emory Lane have been labeled on the Operations Map.

8. Module 9: Operations Map (f): Include in the legend the symbol for the overhead electrical lines (OHE) shown along the haul road going to the Pitts Quarry on the operations map. Furthermore, the operator needs to show the proposed location for the overhead electrical lines needed for NT Pond Pumps # 1 and #2. (77.410)

The symbols for existing and proposed overhead electrical lines (OHE) have been added to the Operations Map and the Operations Map legend.

9. Module 9: Operations Map (g): Show the gas line and company name within 1,000 feet of the permit area. Presently, the operations map is only showing the gas line in the permit area and the gas line company is not labeled. The gas company name should also be shown on the Pitts Quarry gas line since the gas line is shown on the operations map. (77,410)

The Operations Map has been updated to show the existing Columbia Gas Line within 1,000 feet of the permit area.

10. Module 9: Operations Map (i): Clarify why the Pitts Quarry Operations Map shows the final pit elevation at 840 feet, but the proposed operations map for the Northern Tract Quarry shows the Pitts Quarry final pit elevation at 790 feet. Please provide the approval for the Pitts Quarry final pit elevation to be lowered to 790 feet since **Part C, Noncoal Authorization to Mine**, notes the Pitts Quarry shall not extend the pit floor elevation beyond 840 feet MSL. (77,410)

This bottom elevation of the Pitts Quarry has been corrected to be El. 840.

11. Module 9: Operations Map CD: Show the old copper mine entrance and the length of the copper mine on the operations maps via dotted lines. Site visit observed the old mine opening and the underground mine must be shown on all exhibits. (77.410)

The old copper mine exploration adit location has been added and labeled.

12. Module 9: Operations Map (m): Show bench elevations for each Phase Operations Map. Presently, the Phase Operations Maps do not show benches or highwalls being developed. (77.410)

The elevations of each proposed bench are shown in the Exhibit 7.1 – Geologic Cross Sections.

13. Module 9: Operations Map (o): Show a collection ditch up slope of Sediment Ponds NT Pond No. 1 and NT Pond No.2. The run off from the pond drainage area should be directed to the farthest distance from the pond discharge location to allow the maximum amount of settling time. (77.454 (6))

Collection ditches CD-7 and CD-8 have been added upslope of NT Pond No. 1. Collection ditches CD-9 and CD-10 have been added upslope of NT Pond No. 2. For clarity, these ditches have also been shown on Drawing Nos. 7 and 8, respectively.

14. Module 9: Operations Map (p): Label the culverts on the operations map and include the size & type of culvert to be installed. Please clarify on the operations map for Phase 1 if culverts will be required to allow equipment to cross the proposed collection ditches C-1 or C-2, since the operations map shows the ditches on the inside portion of the access road with no entrances to the working pit area. (77.454 (6))

All ditch crossings are assigned a specific culvert, with references to the “Culvert Details” drawings which shows the sizes and shapes of each culvert. However, SGI may choose to use Texas crossings at crossings with low or infrequent traffic volumes per their discretion.

A note has been added to the Phase 1 Site Development plan indicating that crossing of CD-1 or CD-2 shall be accomplished via an engineered crossing. Details of the equipment crossing, which primarily included a widened riprap-lined section of the ditch, are shown on Drawing No. 23.

15. Module 9: Operations Map (p): Show and label the pump locations for Sediment Ponds NT Pond No. 1 and NT Pond No. 2 on the final operations map. Also, show and label the final collection ditches on the operations map. Presently, the Operation Phase maps show the pump locations, but the 1" = 400' final operations map does not show the pump or ditch locations. A final operations map with a scale of 1" = 200' is necessary and will help the operator's foremen to make sure the E & S controls are located properly on the permit area. (77,454 (6))

Pump locations and collection ditches for both ponds have been shown on the operations map. Additionally, a second Exhibit 9 Operations Map (2 of 2), at a scale of 1" = 200', has been added to the drawing set as requested.

16. Module 9: Operations Map (t): Show the access/haul road clearly on the operations map. Presently, the access/haul roads are not clearly shown from the Pitts Quarry to the Northern Tract Quarry. (77,410) (77.631)

The access/haul road has been highlighted and labeled at several locations.

17. Module 9: Operations Map (s): Show the topsoil, spoil and berm areas. These items are checked on the Module 9: Operations Map item list but not shown on the operations map. (77.410)

Module 9 has been revised so that the topsoil, spoil, and berm areas are not checked.

18. Module 9: Operations Map (u.v): Show the processing facilities, refuse disposal areas on the operations map. This item was checked on the Module 9: Operations Map item list, but not shown on the operations map. (77.410)

Module 9 has been revised so that the processing facilities and refuse disposal areas are not checked.

MODULE 10

1. Module 10.1 Equipment and Operation Plan: Include in the 10.1 narrative final paragraph; "Prior to NT Pond Nos. 1 and/or 2 removal, the operator will submit a revised E & S plan showing the proposed E & S controls for the pond removals since it is critical to prevent any erosion or drainage from the mining area from going into the High-Quality Tom's Creek and the Unnamed Tributary to Tom's Creek located near Iron Springs Road. The NPDES Permit may have to be revised". (77.527) (77.531)

The 10.1 narrative has been updated as requested.

2. Module 10.6 Reclamation Timetable: Provide an estimated timetable for each phase and details for the bench elevations for each phase. (77.456)

A rough timetable for each of the major phases of the quarry development has been added to Module 10 as requested. Note that the timing of each development phase is heavily reliant on several outside factors, including market demand for the aggregate product, and may vary from what is tabulated in Module 10.

3. Module 10.11: Underground Mines: Revise the response to include a description in regards to the abandoned underground copper mine entrance located within the proposed mining area. (77.463)

Module 10 has been revised as requested.

MODULE 12

1. Module 12.1 Diversion Controls: Provide the diversion ditch designs for the diversion ditches shown on the operations map for Phases 2 and 3. The ditch designs are required to make sure the ditches are sized properly for the drainage area. Presently no diversion ditch designs were submitted.

(77.524) & (Technical Guidance #563-0300-101)

Diversion ditch designs are provided in the calculations attached to Module

12. An updated table of contents has been generated for the calculations to facilitate the location of various calculations within the permit.

2. Module 12.2 E & S Controls: Provide all submitted sheets with concurrent page numbers. Presently, Modules 12 & 13 have several sheets without page numbers, making it difficult to reference these pages if comments are required or if they need to be replaced with revised sheets. (77.126)

The Module 12 calculations have been renumbered as requested.

3. Module 12.2 E & S Controls: Provide the starting elevation and stations on the collection ditch data sheets. Presently, the collection ditch data sheets refer to the ditch profile; however, the ditch profile is not to scale and does not provide the exact location for each ditch segment or slope change.

(77.525) & (Technical Guidance #563-0300-101)

Revised Form 12.1s have been included with the ditch design calculations provided in Module 12.

4. Module 12.2 E & S Controls: Clarify the channel bed slopes for collection ditches CD-3, CD-4 and CD-5. Presently, the first ditch segment channel bed slope does not match the slope provided by the ditch profile. For example, the collection ditch data sheet's first segment for CD-3 is noting a 2% slope; however, the ditch profile is showing an 8.9% slope. The operations map contour elevations show the ditch profile to be more accurate. (77.525) & (Technical Guidance #563-0300-101)

CD-3 is designed for a slope ranging from 2% to 10% to account for the worst case scenarios with respect to both erosion (10% causing more erosion) and flow depth (2% causing a more shallow flow depth). Each design was done to show that the ditch can meet all applicable standards with either design. For actual construction, the ditch profile will vary along the length, but will remain confined to the range of 2% to 10%.

5. Module 12.2 E & S Controls: Provide the stilling basin design calculations and the standard construction detail for using filter socks for a stilling basin design. The E & S Pollution Control Program Manual only has a stilling basin design for rock and not filter socks. The E & S Pollution Control Program Manual notes sediment traps constructed with filter socks, photodegradable and biodegradable socks shall not be used for more than one (1) year. Please note the length of time and type of filter socks that will be used for the stilling basin.

(77.525) (Technical Guidance #363-2134-008)

The stilling basin has been redesigned as a submerged outlet level spreader in accordance with Appendix G of the E&S Manual. Design calculations for the proposed level spreaders are included with Module 12.

6. Module 12.2 E & S Controls: Include in the full application, either the culvert crossing design or the alternate Texas crossing design, but not both. Presently, the operations map and phases are showing culvert crossings; however, if the operator wishes to install the Texas crossing design this should be noted on the operations map instead of the culvert crossings. (77.525) & (Technical Guidance #563-0300-(01))

Culverts will be the primary features used at ditch crossings as indicated by the revised permit drawings. However, SGI may use Texas crossings to facilitate the ditch crossings in areas of low and/or infrequent traffic volumes, at their discretion, per the notes on the respective culvert plan view drawings.

MODULE 13

1. Module 13.3 Dams and Impoundments: Clarify the following comments for Sediment Ponds NT No. 1 & NT No. 2 designs and Pond Certification sheets. (77.527) (77.531) & (Technical Guidance #563-0300-10 1) (Technical Guidance #363-2134-008)
 - a. Use the Design Storm Event for the emergency spillway design as noted in the Erosion and Sediment Pollution Control Program Manual, Design Criteria Summary Item #22; an acceptable alternative is to provide a discharge capacity equal to the 100-year/24-hour storm event, assuming maximum runoff conditions, with 12 inches of freeboard. Please design the Peak Discharge and the Emergency Spillway Capacity on the Pond Certification sheet for both NT No.1 & NT No.2 for the 100 year/24-hour storm event. Presently, the Pond Certification sheets do not provide this information.

Per follow-up correspondence with the PADEP, we understand that the NT Ponds are required to be designed in accordance with Conservation Practice Standard Pond 378 by the Natural Resources Conservation Service (NRCS). The requirements of Pond 378 are considered in comparison to the proposed NT Pond designs in the following narrative.

Pond No. 378 requires that NT Pond No. 1 be designed with an auxiliary spillway capacity sufficient to convey the peak discharge of the 10-year,

24-hour storm event with a minimum freeboard height of 1 foot, considering its watershed of 18.4 acres and Table PA378 - 4. Similarly, the NT Pond No. 2 is required to have an auxiliary spillway capacity to convey the peak discharge from a 50-year, 24-hour storm event while providing at least 1 foot of freeboard considering its 28.2 acre watershed.

Per Page PA378-6 of Pond 378, the spillway shall be designed to pass the peak flow from the design storm, “less any reduction creditable to the conduit discharge and detention storage.” Thus, detention storage may be utilized as a method to control storm event runoff and provide freeboard.

Also per Pond 378, the storm routing shall be completed with the water surface in the pond at the elevation of the crest of the principal spillway or at the water surface after 10 days’ drawdown, whichever is higher. The proposed ponds will be equipped with electric turbine pumps to dewater the ponds in 2 to 7 days as needed, and maintain their normal pools. Additionally, SGI has mobile, diesel pumps that can be mobilized to the ponds in the event that the electric pumps become inoperable. Therefore, the storm routing for the ponds was completed with the initial pool level in each pond at the sediment cleanout elevation or the normal pool elevation.

Per the previously submitted calculations for the NT Ponds, the ponds were configured to have available storage volume from the sediment cleanout elevation/normal pool to the invert of the auxiliary spillway to detain the runoff from the 100-year, 24-hour storm without discharging. Therefore, the ponds have a storm routing capacity that exceeds that of the PADEP Erosion and Sediment Pollution Control Program Manual and Pond 378.

- b. Address if both sediment ponds will require liners, since the ponds are being excavated in rock that may not hold the storm water.

A note has been added to Drawing Nos. 14 and 17 indicating that the rock subgrade in the NT Pond bottoms shall be evaluated to determine if pond liners are required.

- c. On the Exhibit 12, Initial Site Development -Phase 3 Watersheds, Drawing No. 26; the operator is showing two separate sediment ponds. Please provide the pond designs and pond certification sheets for these two ponds. It is critical that the ponds meet the Antidegradation Best Available Combination of Technologies (ABACT) designs, which are required for sediment pond designs on special protection watersheds. Each pond must have a separate

NPDES point.

During the construction of Phase 5 of the E&S Control Plan, NT Pond No. 2 will be constructed in two chambers. However, during the construction of Phase 5, the two halves of NT Pond No.2 will be hydraulically connected via a connection ditch, which will gradually be replaced by the finished NT Pond No. 2. This connection ditch is shown in plan on Drawing No. 17. A cross-sectional view of the ditch is depicted on Drawing No. 28.

2. Module 13.6 Removal: Add in the narrative: "The operator will submit an E & S revision for approval to the Department prior to removing NT Pond No. 1 and/or NT Pond No.2. The E & S revision will show that no storm water from the mining area or erosion will be directed to Tom's Creek or unnamed tributary to Tom's Creek, located next to Iron Springs Road". (77.527) (77.531) & (Technical Guidance #563-0300-101) (Technical Guidance #363-2134-008)

The narrative has been updated in Module 13.6 as requested.

3. Module 13.3 Dams and Impoundments: Describe in the narrative how the storm water run-off pumped from the Northern Tract Quarry will not impact the Chairman Plants' Lower Mill Ponds, considering the additional drainage area going to the ponds. Please provide the upstream and downstream flow measurements from Miney Branch along with the Lower Mill Pond #3 discharge and note these sample points will be monitored monthly and after any major precipitation event. This information will be submitted to the Department monthly. The operator should construct weirs or flumes to obtain accurate flow readings for Miney Branch. This may require coordination with the US Army Corp of Engineers to determine if a federal permit is required for the installation of a weir or flume. (77.527) (77.531) & (Technical Guidance #563-0300-101) (Technical Guidance #363-2134-008)

A narrative discussing the proposed water handling at the Lower Mill Pond system, considering the proposed NT Ponds, has been added to Module 13.3 as requested. Per the narrative, the typical discharge rates tributary to Miney Branch as a result of conveying runoff from the Northern Tract Quarry to the Lower Mill Pond System are not anticipated to change. Therefore, the monitoring that is currently conducted at NPDES Outfall 001 for the Lower Mill Pond system (NDPES PA 0009059 on SMP # 6477SM5) is considered an adequate means to monitor discharges to Miney Branch. SGI does not intend to install a weir or flume within Miney Branch, or conduct additional surface water monitoring, at this time.

MODULE 14

1. Module 14: Streams/Wetlands: Provide a detailed hydrologic study evaluating potential impacts to the quality or quantity of Toms Creek or Unnamed Tributaries to Toms Creek and associated wetlands. This should be noted in the Module 14 narrative. (105.17) (Technical Guidance #563-0300-101) (Technical Guidance #363-2134-008) (Technical Guidance #391-0300-002)

As discussed in the Social or Economic Justification and Water Use Demonstration (SEJ) document for the Northern Tract Quarry, submitted to the PADEP in August 2017 as part of the Anti-Degradation Supplement, some indirect impacts to Wetland D may occur as a result of developing the Northern Tract Quarry. SGI proposes bi-annual (twice per year) vegetative monitoring of Wetland D to evaluate any impacts. Due to its minimal size and hydrologic contribution within the Toms Creek drainage basin, any resulting reduction in Wetland D from indirect hydrologic effects is expected to result in insignificant effects to the functions, values, and quality of the Toms Creek drainage basin. No direct or indirect effects to Wetlands A, B, C, and E due to hydrologic alteration are anticipated from the development of the proposed Northern Tract Quarry. The hydrologic sources to these wetlands are primarily associated with the surface water and seasonal groundwater interflow contributed from the Unnamed Tributary to Toms Creek. Portions of Wetland C are associated with seepage along the lower hillside slope adjacent the floodplain of the Unnamed Tributary to Toms Creek. In contrast to Wetland D, indirect impacts to the hillside groundwater seepage hydrology attributed to Wetland C are anticipated to be insignificant due to the distance of the seepage from the proposed quarry pit, as well as, the location of the seepage at the toe of hillside slope adjacent the floodplain.

MODULE 18

1. Exhibit 18 -Land Use and Reclamation Map: The pre-application shows two options for final reclamation for the proposed permit. The operator must choose only one of the reclamation plans for the complete permit application submittal. Also, see Module 19 and Module 20, comment number I. (77.462)

Only one reclamation option is now being presented.

MODULE 19

1. Module 19.1 Land Use (a): Revise the Exhibit 18: Land Use and Reclamation Map to show and key the current land use of forestland that covers the majority of the proposed permit area. (77.409(1))

Exhibit 18: Land Use and Reclamation Map has been revised to show wetlands, forest lands, and residential land use.

MODULE 20

1. Module 20: Post Mining Land Use and Reclamation: Currently, the response in Module 20 is requesting approval of two options for final reclamation of the proposed permit. The operator must choose only one of the reclamation plans and revise Module 20 accordingly for the complete permit application submittal. Also, see Module 18, comment number I. (77.462)

Only one reclamation option is now being presented.

MODULE 24

1. Anti-Degradation Supplement for Mining Permits: Section I: Part D: Use of Non-Discharge Alternatives: The operator checked #2: *Non-discharge alternatives use will not account for the entire discharge. A point source discharge is anticipated: (Provide justification in Section I.C. and chose a. or b. below)*. The operator has checked both a. and b.; however, only one of these options should be checked. If a Social Economic Justification and Water Use Demonstration (SEJ) is selected, this should be submitted prior to the submittal of the full application, as the full application cannot be submitted until the SEJ is approved by the Department. (Technical Guidance #391-0300-002)

An Anti-Degradation Supplement, including the SEJ, for the Northern Tract Quarry project was submitted to the PADEP in August 2017. By letter dated November 2, 2017, PADEP acknowledged receipt of the Anti-Degradation Supplement, and advised that it found no deficiencies in the materials submitted. The previously-reviewed Anti-Degradation Supplement will be submitted as part of the full mining permit application.

Closing

Four copies of the updated permit application documents, including an original signature copy, are provided with this project submission for review by the PADEP. A CD is provided with each copy including electronic files of the permit documents. Also, three checks are included to account for various permit review fees as follows:

- \$20,225 – Mine Permit Application
- \$450 – Module 10 Bond Increment Application and Authorization

We trust that the enclosed information addresses the PADEP's technical review comments. Note that we are in the process of getting the Consent of Landowner Form included with Module 5 recorded at the Adams County courthouse. Updated documents related to this landowner consent will be forwarded to the PADEP under a separate cover when available.

We appreciate your efforts in reviewing the application, and are available for any questions or comments. Please contact me or Mr. Kevin Moore of SGI should you have any questions or require additional information.

Respectfully Submitted,
D'Appolonia Engineering Division of Ground Technology, Inc.



Robert M. Shusko, P.E.
Senior Principal Engineer

Attachments/Enclosures

cc: Mr. Anthony Shepeck, SGI
Mr. Kevin Moore, P.E., SGI
Mr. Matthew McClure, SGI
Ms. Laura Berra, P.E., Skelly and Loy, Inc.