VIA EMAIL & USPS
February 26, 2024

Gregory Aaron, PG Chief, Permit & Technical Services
DEP Moshannon District Mining Office
186 Enterprise Drive
Phillipsburg, PA 16866

Re: Response to December 27, 2023 Technical Deficiency Letter
Minard Mine – SMP 08230301
Bishop Brothers Construction Company, Inc.
Wysox Township, Bradford County, Pennsylvania

Mr. Aaron:

Enclosed please find a response to the December 27, 2023 technical deficiency letter for the aforementioned project. Three (3) copies of the documents listed in Table 1 are included with this submission. Below are comments and responses to your letter:

NPDES APPLICATION:

1. On page 2-5, Sump 1 information is listed three times. No information is provided for the pit sump, Support Area Sump 1, Support Area Sump 2, S&G Phase 1 Pit or S&G 2 Pit. Provide this information. (25 PA Code 923.21)

   Page 2-5 revised to correct information. The hard rock sump removed and the identification points renumbered.

PNDI:

1. A March 30, 2020, Bald Eagle Nest Survey was completed during the nesting season for the proposed mining area by Wildlife Specialists of Wellsboro, PA. No active or inactive Bald Eagle nests were observed at historical nest locations or near the proposed mine site at that time. In 2016, an active Bald Eagle nest site (E0 28723) was reported by the PA Game Commission near the proposed mining area. It has been three years since that survey was completed. Recently (Summer, 2023), residents have reported seeing mature and immature Bald Eagles *fly*ing the river corridor near the proposed mine site. Tom Wittig of the U.S. Fish and Wildlife Service (USFWS) noted in his April 21, 2020 email that upon any sign of Bald Eagle activity USFWS should be consulted for further consideration. The operator should consult with the USFWS and PA Game Commission to determine if another Bald Eagle survey is required. (Bald Eagle and Golden Eagle Protection Act and 50 CFR 22.3)

   Email communications with the USFWS dated 01/05/24 (page 1-106-1) and PGC dated 02/13/24 (page 1-106-2) indicated there are no additional documented nesting locations in the vicinity of the project area. Therefore, another Bald Eagle survey is not required.

   Nest Site #1 (41.958829, -76.532382) is approximately 0.5 miles from the Minard Mine.

   An executed Northeast Bald Eagle Screening Form is provided (pgs 1-106-4 to 1-106-33). Bishops will comply with the requirements stipulated in the Screening Form.

MODULE 1 GENERAL INFORMATION:

1. The Athens Township Planning Commission approved the Land Development Plan for the Minard Mine on August 17, 2023. Please provide any documentation of the approved Land Development Plan. The Planning Commission noted a number of de*fi*ciencies that still need to be addressed although many of de*fi*ciencies will be addressed as part of this mining permit application (ex. NPDES coverage). Please provide an update on the status of de*fi*ciencies and items that still need to be addressed as requested by the Planning Commission. Provide a status update on any other municipal approvals that are needed such as the driveway permit from Athens Township. (Acts 67, 68, & 120)

   A copy of the August 18, 2023 approval letter from the August 17, 2023 planning commission meeting is provided herein (pg 1-23-1 to 1-23-2). As stated in the TDL comment, several of the Township comments will be addressed by the issuance of the NPDES and Mining Permit. Township approvals required before mining commences include a driveway permit and a flood plain permit. Both of these permits will be obtained once the mining permit is issued.

2. Provide the approved Conditional Use Approval for the Woodland Conservation Zoning Districts. On August 15, 2023 Athens Township approved a clari*fi*cation of the Conditional Use Decision of February 21, 2021. The 2021 Conditional Use Decision only explicitly applied to the Agricultural Zoning District. The August 15, 2023 decision clari*fi*ed that the Conditional Use Decision applied to the entire Minard property including Woodland Conservation Zoning Districts. The August 15, 2023 decision was subject to two separate appeals in the Pennsylvania Court of Common Pleas. Please inform the Department of any developments related to the appeals. (Acts 67, 68, & 120)

   At the time of this response, no decision has been rendered from the court for either appeal.

3. The Pennsylvania Historic & Museum Commission (PHMC) sent a new comment letter on October 16, 2023 in response to inquiries from the public regarding the presence of Native American archaeologic resources. The October 16, 2023 letter stated that there was a high probability of archaeological sites being located within the permit area and recommended that a Phase 1 archaeological survey be conducted with deep testing in areas that will be affected. Please provide a response to the PHMC's October 16, 2023 letter. If you choose not to proceed with a Phase 1 survey, then please describe what kind of monitoring for archaeological resources will be conducted during the removal of topsoil and other unconsolidated deposits above the bedrock where the archaeological resources may be located.

   Coordination with PHMC and USCOE is ongoing to determine the required efforts for the USCOE to issue a response to the applicants stream crossing approval.

EXHIBIT 6.2 ENVIRONMENTAL RESOURCES MAP:

1. Show all drilled well water supplies within the 1,000-foot boundary on the mapping. If a well location cannot be determined identify the property as using a drilled well supply. Provide background samples for these water supplies. (25 PA Code 77.410)

   Known locations of water wells are provided on the exhibit maps. Properties with well water without a confirmed well location are also noted on the exhibit maps. Refer to the Legend for additional information.

   See comment Module 8, #4 for additional information for background water supplies.

2. Were any background samples collected from water supplies beyond the 1,000-foot boundary in response to requests from residents? If so, those locations could be shown on the Exhibit 6.1 Topographic map or another Exhibit map. (25 PA Code 77.410)

   Two (2) background water samples were collected and analyzed from residents beyond 1,000' and beyond the extents of Exhibit 6.2. Exhibit 6.1 details these two background water sample locations.

3. A water line is shown in the northern area of the mapping. Are any dwellings connected to this water line? What does the water line service? Is this water line a source of public water that could be utilized if a drilled well becomes degraded from mining activities? (25 PA Code 77.410)

   There is an Aqua Pennsylvania water line north of the mine permit area. Property owners are not required to connect to the water line. Per my discussion with Aqua Pennsylvania on January 4, 2024, only 14 Precision Lane (#111-2, Townsand) is connected to the waterline at this time.

   The water line may be a source of public water if water supply must be replaced if degraded from mining.

4. Identify the symbol for M1 in the map legend. (25 PA Code 77.410)

   M1 is identified in the Legend as a geologic measurement location.

5. Move the location of the text identifying the location of monitoring point S5B onto the Chemung River at the northern section of the map. (25 PA Code 77.410)

   The label for S5B relocated. S5B also identified on Exhibit 6.1.

6. Show the proposed location of the wetland monitoring piezometers on the mapping. (25 PA Code 77.410)

   Wetland monitoring piezometers located on the exhibit maps.

7. Add the permit number to all applicable maps. (25 PA Code 77.410) Section 305.2.N & Section 3082.]:

   Permit number added to all exhibit maps.

MODULE 8 HYDROLOGY:

1. Provide two (2) up to date samples for all proposed monitoring points. (25 PA Code 77.532)

   Sampling is ongoing and will be provided once completed.

2. Discuss the seasonal variations in water quality at monitoring point S1A when compared to monitoring points S1B and S1C. (25 PA Code 77.532)

   Module 8.4.c updated to discuss seasonal variations.

3. Discuss the seasonal variations of the water quality in the Chemung River at monitoring points S5A and S5B. (25 PA Code 77.532)

   Module 8.4.c updated to discuss seasonal variations.

4. Revise Module 8 with the details of any private water supply wells that have been sampled since the application was submitted. The Department recommends that new notification letters be sent to owners of the properties that are within 1,000 feet of the proposed permit and didn't respond to the letters that were sent on August 23, 2021 requesting to a schedule a meeting time to obtain a water quality sample from their private water supplies. (25 PA Code 77.532)

   Certified mailings were sent January 10, 2024 to seventeen potential water supplies. All seventeen certified mailing were received and green cards returned (pgs 8-34 to 8-55). Eight (8) responses were returned and six (6) additional wells were sampled. Sampling is ongoing and laboratory results will be provided once completed. Module 8 pages 8-1 and 8-5 are updated with additional private water supply information. Module 8.1A updated with current water quality data (pgs 8-56 to 8-79). Module 8.1A will be updated upon receipt of pending laboratory water quality data.

EXHIBIT 9 OPERATIONS MAP:

1. The topsoil/overburden stockpile berms in the northern mining area along Meadowlark Drive are constructed in areas where *fl*oodwaters have historically *fl*owed when Tutelow Creek reaches *fl*ooding levels. The stockpile berms have the potential to increase *fl*ooding along Meadowlark Drive by damming *fl*oodwaters and increasing the *fl*oodwater depth. The topsoil/overburden stockpile berms may need to be removed from areas as proposed, modi*fi*ed so that it is not one continuous berm (gaps in berm), or replaced with another type of visual barrier (trees?) Provide information on how the building of berms, as proposed in the permit, will affect *fl*oodwaters along Meadowlark Drive should Tutelow Creek or the Chemung River reach *fl*ood stages. See Module 14 comment #1 below. (25 PA Code 77 .459)

   The topsoil/overburden stockpile berm at the northeastern portion of the permit area has been modifed. The berm has been removed from the floodway and an opening is provided in the berm.

2. Label the rock *fi*lter and emergency spillway of Basin 2. (25 PA Code 77.410)

   Basin 2 features labeled.

3. Add the permit number to all applicable maps. (25 PA Code 77.410)

   Permit number added to all exhibit maps.

4. Include a reference on the Exhibit 9 map to the Exhibit 9.1 map that shows greater detail of the Hard Rock Phase 1 and 2 areas. (25 PA Code 77.410)

   A note added to Exhibit 9 referencing Exhibit 9.1.

5. Show proposed diversion ditches above the Phase 3 mining area. (25 PA Code 77.410)

   Upslope highwall diversions shown above the Phase 3 mining area.

6. The application to the Susquehanna River Basin Commission mentions that a water well will be drilled for a source of water in the permit area. Please show the proposed location of the well on the map. (25 PA Code 77.454)

   The approximate location of the onsite water well is provided on Exhibit 9 near the scales.

MODULE 10 OPERATIONAL INFORMATION:

1. Include more detail on how the pit sump in the hard rock will be developed. As noted in the pre-application review letter, it will likely be necessary to maintain a low wall that functions similar to a containment berm. Overburden material should not be placed downslope of the low wall. There is currently only one brief mention of a low wall in Module 10.1. Please provide additional information about how containment will be achieved in the hard rock mining area. (25 PA Code 77.454)

   Additional information provided in Module 10.1 (pg 10-2).

2. Provide the name of the operator of the above-ground electric utility line that runs through the permit area. Is there an established right-of-way easement for the power line on the Minard property? If there is no established right-of-way then the Department assumes a total right-of-way of 50 feet with a 25-foot barrier on either side of the utility line. The operator must contact the electric utility company and obtain a waiver to conduct mining activities within 25 feet of the electric utility line. The only activity that wouldn't require approval is when vehicles would just be passing under the electric mine on an existing road. All electric power poles should be shown on the mapping and the allowed setback distance barrier shown around the utility line. The section of the electric line to be relocated should be clearly identified in a color different than the electric line to be left untouched. Include a label with the name of the electric utility operator somewhere on the map. (25 PA Code 77.504)

   Penelec (First Energy) is the utility company. A right-of-way agreement between Penelec and Bishop Brothers is pending and will be provided once complete.

   The relocated section of electric line is labeled on Exhibit 9 and Exhibit 18 shows the final electric line configuration.

3. The permit line setback must be shown on the cross-sections. The setback in unconsolidated material, at a minimum, must be equal to the total highwall height for the setback area. In addition, the variance areas must also be shown on the cross-sections. The setback would also apply to barrier areas (property lines, streams, dwellings, utilities, roads, geofabric) within the permit boundary, for example the 100-foot stream barrier along the Chemung River and Tutelow Creek. The intent of the setback is to prevent slumping of the highwall into areas where mining is prohibited. Revise the cross-sections and mapping to show the setback areas where applicable. The setback length should also be labeled on the mapping. Label Tutelow Creek where applicable on cross-sections. (25 PA Code 77.572)

   Cross sections updated.

BONDING:

1. Add the permit number to the bonding worksheets. (Application Instructions)

   Permit number added to the bonding worksheets.

2. Include a separate bond item for the removal of the bridge crossing of Tutelow Creek and culvert crossing of the unnamed tributary. (25 PA Code 77.202)

   A line item added to the bonding worksheet for removal of the crossings.

3. Indicate on the bond forms/mapping that the 70,000 cubic yards of overburden storage is for reclaiming the eastern portion of the hard rock mining pit. Revise as needed. (25 PA Code 77.202)

   A note added to bond form and mapping stating overburden storage is for hard rock mining pit reclamation.

MODULE 12 EROSION & SEDIMENTATION CONTROLS:

1. Include a description of how any proposed berms shall be installed such that they will not affect the floodway of Chemung River and Tutelow Creek. Ditches may be substituted for berms in the *fl*oodway areas so as not to in*fl*uence the path of *fl*ood waters. See Module 14 comment below. (25 PA Code 77.454)

   A containment moat at the perimeter of the operation is utilized in the floodway. Refer to Exhibit 9 and Exhibit 10.1, detail 15.

2. Include additional details regarding development of the pit sump (see Module 10 comment #1). Module 12 only references a perimeter berm as the containment for a pit sump. There is no reference to a low wall. (25 PA Code 77.454)

   Module 12.2 (pg 12-1) updated to correspond to Module 10.1.

3. The ditch design sheets need to list the size of riprap that will be used in all ditches and diversions. (25 PA Code 77.46l(c))

   Ditch design sheets updated with riprap sizes (pgs 12-7 to 12-8).

4. Ditch designs for East Slope and West Slope diversions are provided but those ditches are not labeled as such on the Exhibit 9.1 Map for the hard rock phases 1 and 2. No diversion ditches are shown for Phase 3, which is only shown on the Exhibit 9 map. (25 PA Code 77.454)

   The East and West Slope Diversions are utilized for reclamation as detailed on Exhibit 18. Each individual ditch is not uniquely labeled.

   Upslope Highwall Diversion noted on Exhibit 9.1 for Phase 1 and 2 utilizes Exhibit 10.1, detail 10.

   Upslope Highwall Diversions are provided on Exhibit 9 for Hard Rock Mining Phase 3.

5. Please describe the Erosion & Sedimentation controls that are proposed around the "Overburden Storage Pile" area and show them on the Exhibit 9 map. (25 PA Code 77.454)

   Module 12 updated to include a description of E&S controls for the overburden storage pile. E&S controls detailed on Exhibit 9. A silt sock is shown along the overburden storage pile but not in the legend.

MODULE 13 IMPOUNDMENTS/TREATMENT FACILITIES:

1. Provide a spillway capacity for the Basin 1 principal spillway. (25 PA Code 77.46l(c))

   Page 13-9 updated; calculation provided on page 13-19.

2. Provide a discharge capacity for the dewatering device for Basin 1. (25 PA Code 77.46](c))

   Page 13-9 updated.

3. Provide a time to dewater for a full pond at Basin 1. (25 PA Code 77.461(c))

   Page 13-9 updated.

4. Proposed nondischarging Sump 1 and Sump 2 located in the support area are each proposed to have a volume of 20,000 cubic feet (200' x 20' x 5'). All impoundments with a volume greater than 2,000 cubic feet are required to be certified. Please provide design certifications for Sump 1 and Sump 2 in the support area. Will the drainage from Sump 1 and Sump 2 be directed into Basin 1 if the sumps overflow during a storm event? Please demonstrate that the combined capacity of Sump 1, Sump 2, and Basin 1 is adequate to handle the drainage from the entire support area, which appears to be approximately 10 acres.

   Revise the Exhibit 13.3 Basin Drainage Areas map to show the drainage areas for Sump 1 and Sump 2. (25 PA Code 77.461)

   Sediment Basin Certifications provided for Sump 1 and Sump 2 (pgs 13-13 to 13-16).
   Exhibit 13.3 (pg 13-17) updated to show Sump 1 and Sump 2 drainage area.
   The operation of Sump 1, Sump 2, and Basin 1 detailed on pages 13-7 to 13-8. The combined storage capacity of Sump 1, Sump 2, and Basin 1 is adequate to control the contributing drainage area.

5. The capacity of Basin 2 is based on the dewatering rate from the pit sump by pumping (200 gpm), however, the pit sump is also described as being dewatered by gravity. How is the flow rate into Basin 2 going to be controlled when it receives gravity drainage? (25 PA Code 7 7.454)

   Ditch 1 will be constructed to convey pit runoff to Basin 2 once the pit sump is full. Ditch 1 invert elevation will be approximately four (4') below pit floor while the bottom of the sump will be at a deeper elevation.

MODULE 14 STREAMS/WETLANDS:

1. Separate Module 14 sections are included for the proposed encroachments for the bridge crossing of Tutelow Creek, the pipe crossing of UNT l to Tutelow Creek, and the mining activities within 100 feet of UNT 1 to/and Tutelow Creek. The proposed activities within the floodway between Tutelow Creek and Chemung River are also an encroachment and need to be described in a separate Module 14 section. The section needs to describe the total area proposed to be affected within the floodway and all the activities proposed with the floodway. (25 PA Code 77.523 & 105. l 3(e)(l)(vi))

   A separate Module 14 provided for the floodway encroachments along Tutelow Creek and the area between Tutelow Creek and the Chemung River (pgs 14-14-1 to 14-14-4).

   a. The current plans for the mining and support activities within the floodway do call for berms to be constructed. If berms or other fill material are to be constructed or placed within the floodway that would result in a change to the floodway delineation, then a study must be conducted to determine the project's impact on the floodway. Otherwise, a detailed explanation must be provided for how all the activities within the floodway will not have an effect on the floodway delineation.

      All berms have been removed from the floodway. A moat containment will be constructed in place of the containment berm.

   b. It is stated in the response to Module 10 Comment #15 of pre-application review letter that "Support area structures relocated out flood". The Exhibit 9 map shows the support area within the floodway. Please clarify what support activities will be done within the floodway. Please note that large stockpiles of any kind of material shouldn't be placed in the floodway.

      Support activities within the floodway are described in Module 10.1 (pg 10-1).
      Large stockpiles or structures will not be placed in the floodway.

c. As noted in Exhibit 9 Comment #1 residents along Meadowlark Drive have noted that *fl*oodwaters from Tutelow Creek entered the Phase 2 Sand & Gravel mining area. Residents stated that water was *fl*owing through that area (i.e., it was part of the *fl*oodway). Please reevaluate the *fl*oodway delineation in that area based on those observations and address how the mining activities won't affect the floodway in a way that would impact houses along Meadowlark Drive.

See Exhibit 9, comment #1. The perimeter berm has been relocated out of the floodway and an opening is provided near Meadowlark Drive.

d. Any study of the *fl*oodway delineation should include the following:

i. A study needs to be performed to determine return period *fl*ood event versus out of bank *fl*ooding. This would aid in providing estimates for when there will be signi*fi*cant *fl*ooding in the project area.
ii. A study needs to be done to determine *fl*ow velocities on the *fl*ood plain (if any) during return period *fl*ood events.
iii. These studies would have the opportunity of being calibrated against observed historical *fl*ooding. It could then be determined if the models developed from the studies are marginally accurate to estimate accepted regional *fl*ood event return periods.
iv. A summary/narrative should be provided of the *fl*ooding impacts of historical *fl*oods. Typically, high water marks and damages are recorded.
v. A relationship between water surface elevation and return period should be developed with the aid of hypothetical *fl*oods and historical *fl*oods.
vi. A review of historical *fl*ooding and the use of developed models should be used to determine duration of *fl*ooding at the project site during an event.
vii. Given the size of the rivers (Chemung and Susquehanna) a review of any historical impacts from ice jams should be provided. Was any backwater increased due to ice jams or was there any increase to *fl*ooding once an ice jam was breached?
viii. Any berms anticipated to be constructed on the *fl*oodplain need to be modeled to determine if they increase *fl*ooding elevations on the Chemung River during an out-of-bank event.

No fill placement is proposed in the floodway along the Chemung River or Tutelow Creek therefore no additional floodway study is provided.

2. To avoid cluttering the Exhibit 9 map we recommend submitting a separate Exhibit map for Module 14 that shows the stream/*fl*oodway variance and encroachment areas (25 PA Code 77.523 & 105.I3(e)(I)(vi))

Exhibit 14.1 created to clarify the stream/floodway variance and encroachment areas.

3. When an encroachment of a Federal Emergency Management Agency (FEMA) *fl*oodway is proposed a letter from the local municipality commenting on the analysis is required. Was the *fl*oodway analysis speci*fi*cally addressed by Athens Township as part of the Land Use and Development Plan review that was conducted in summer of 2023? (25 PA Code 77.523 & 105. I3(e)(1)(vi))

The Athens Township floodplain municipal letter will be obtained prior to commencement of mining activities.

4. Provide an estimate of bridge and culvert Inlet/outlet velocities. Is any scour erosion expected for culvert and bridge? (Inlet scour, outlet scour, culvert barrel *fl*ushing, and bridge wall scour.) (25 PA Code 77.523 & 105.I3(e)(I)(vi))

Bridge velocities for the 100 year storm event are provided in the bottom table of page 14-191. Profile PF3 is the 100 year event. The proposed upstream and downstream velocities are 2.81 ft/s. No scour erosion is proposed.

Culvert outlet velocity noted on page 14-197. Outlet protection is provided as noted and on Exhibit 14, page 2 of 2.

5. PA Fish & Boat Commission Comment: It is recommended that the proposed inlet and outlet riprap aprons for the crossing of UNT 1 to Tutelow Creek be depressed into the streambed and backfilled with excavated material to recreate a stream channel atop of the placed riprap and prevent subsurface flow through interstitial voids in the riprap. Revise the culvert design as needed to address this comment. (25 PA Code 77.523 & 105. I3(e)(1)(vi))

   The design is updated. Refer to Exhibit 14, page 2 of 2.

6. PA Fish & Boat Commission Comment: The proposed plans for the removal of the culvert in UNT 1 to Tutelow Creek post mining do not depict woody riparian plantings. The PFBC recommends the plantings and/or grade control structures be utilized to stabilize this steep channel once the structure is removed. This restoration should be detailed in the Exhibit 14 plans. (25 PA Code 77.523 & 105.13(e)(1)(vi))

   The Exhibit 14 (page 2 of 2) calls for woody riparian plantings for reclamation.

7. PA Game Commission Comment: No wetland impacts are proposed. However, actual mining operations may provide additional critical information with respect to wetland impacts. Six piezometers will be installed adjacent to Wetlands I, II, and J prior to mining and will be monitored. Should field measurements and observations indicate adverse impacts, then a mitigation plan for wetlands restoration must be developed and adequately address the loss of these resources due to the proposed mining operation. Revise Module 14 with the details of the potential indirect wetland impacts and the proposed wetland monitoring. (25 PA Code 77.523 & 105.18a(b))

   Potential wetland impacts are detailed in Module 8.6a (page 8-9).

MODULE 17 AIR POLLUTION AND NOISE CONTROL PLAN:

1. The Department recommends completing a study of the pre-mining environmental sound level to characterize noise levels prior to mining. That study will be used to determine if the proposed noise mitigation measures are adequate to prevent a public nuisance with respect to the noise from the operations. The study should be conducted at the nearest residence along Meadowlark Drive. (§ I9I7-A of the Administrative Code of 1929)

   Noise was part of the Athens Township review and approval. Noise will be limited by the agreed upon hours of operation stipulated in the Township approval.

2. The list of Best Management Practices (BMPs) should include the proposed evergreen tree screen to be planted along the north side of the site. Also, a revised list of BMPs with regard to use of berms within the floodway depending on how you address the Module 14 comments should be included. (25 PA Code 77.454)

   Evergreen trees included with the BMPs listed in Module 17.3.g (pg 17-4).
   No berms will be utilized in the floodway.

MODULE 18 LAND USE & RECLAMATION MAP:

1. Show the riparian area to be planted with trees along Tutelow Creek on the Exhibit 18 Map. Reference the tree species listed in Module 23 in the "Vegetative Cover" notes on the Exhibit 18 map. (25 PA Code 77.456)

   Module 18 update to show the riparian area and the vegetative cover reference to Module 23.

MODULE 23 REVEGETATION:

1. PA Game Commission Comment: Because of its ability to out-compete other grass species and/or non-native nature, and because there are higher value wildlife habitat grasses we recommend either minimizing the use of annual ryegrass, redtop and orchard grass, or eliminating and replacing with a combination of oats (spring) and/or wheat (fall), along with crimson, red and/or white clover. Revise Module 23, Permanent Cover, as needed to address this comment. (25 PA Code 77.456)

   Module 23.3.a Permanent Cover seed mixes revised (pg 23-2).

2. PA Game Commission Comment: We recommend not planting European white birch. Sweet (black) or gray birch are alternatives, and river birch is an altemative for riparian/wet areas. We recommend not planting American ash for survival is unlikely due to the widespread presence of the invasive emerald ash borer. Revise Module 23, Woody Plants as needed to address this comment. (25 PA Code 77.456)

   Module 23.4.a Woody Plant mix revised (pg 23-3).

Table 1: Summary of Documents

Updated Document:	Replaces:
Module 1: pgs 1-23-1 to 1-23-2, Athens Twp Planning Board August 18, 2023 approval, revised 02/26/24	None
Module 1: pgs 1-106-1, USFW email dated 01/05/24, revised 02/26/24	None
Module 1: pgs 1-106-2, PGC email dated 02/13/24, revised 02/26/24	None
Module 1: pgs 1-106-4 to 1-106-33, Northeast Bald Eagle Screening Form, revised 02/26/24	None
Module 2: pg 2-5, revised 02/26/24	Module 2: pg 2-5
Exhibit 6.1 dated 05/05/23, revised 02/16/24	Exhibit 6.1 dated 05/05/23
Exhibit 6.2 dated 05/05/23, revised 02/26/24	Exhibit 6.2 dated 05/05/23
Exhibit 7/10 dated 05/05/22, revised 02/26/24	Exhibit 7/10 dated 05/05/22
Module 8: pgs 8-1, 8-5, 8-7 & 8-9, revised 02/26/24	Module 8: pgs 8-1, 8-5, 8-7, & 8-9
Module 8: pgs 8-34 to 8-79, revised 02/26/24	Module 8: pgs 8-34 to 8-47
Exhibit 9 dated 05/05/23, revised 02/26/24	Exhibit 9 dated 05/05/23
Exhibit 9.1 dated 05/05/23, revised 02/26/24	Exhibit 9.1 dated 05/05/23
Module 10: pgs 10-1 to 10-3, revised 02/16/24	Module 10: pgs 10-1 to 10-3
Module 10: pgs 10-12 to 10-14, revised 02/26/24	Module 10: pgs 10-12 to 10-14
Exhibit 10.1 & 10.2 dated 05/05/23, revised 02/26/24	Exhibit 10.1 dated 05/05/23
Module 12: pgs 12-1, 12-7 & 12-8, revised 02/26/24	Module 12: pgs 12-1, 12-7 & 12-8
Module 13: pgs 13-1 to 13-27, (ALL) revised 02/26/24	Module 13: pgs 13-1 to 13-23 (ALL)
Module 14: pgs 14-14-1 to 14-14-4, revised 02/26/24	None
Exhibit 14.1: Stream & Floodway Encroachments dated 02/26/24	None
Exhibit 14 dated 12/06/21, revised 02/26/24 – 2 pages	Exhibit 14 dated 12/06/21, revised 05/01/23 – 2 pages
Module 17: pg 17-4, revised 02/26/24	Module 17: pg 17-4
Exhibit 18 dated 05/05/23, revised 02/26/24	Exhibit 18 dated 05/05/23
Module 23: pgs 23-2 to 23-3, revised 02/16/24	Module 23: pg 23-2 to 23-3

Should you have any questions, please contact me at 814-272-0301.

Tract Engineering, PLLC

/s Timothy S Gourley

Timothy S. Gourley, P.E.

encl.

cc: J. Mital, PG, PA DEP (w/ encl.) via email
D. Bishop, BB (w/ encl.) via email
M. Lee, BB (w/ encl.) via email
R. Stormer, PG, EADS (w/ encl.) via email
Athens Township (w/ encl.) public copy for review

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August 18, 2023

Bishop Brothers Construction Co Inc.
1376 Leisure Dr.
Towanda, PA 18848

RE: **Preliminary Land Development**

To whom it may concern,

Thank you for submitting your preliminary land development plans to the Athens Township Planning Commission at their meeting held on August 17, 2023.

This letter is to inform you of the action taken by the Athens Township Planning Commission at the above stated meeting. The Planning Commission reviewed your application for a preliminary land development on Meadowlark Drive.

The Planning Commission moved to recommend approval to the Athens Township Supervisors at their meeting to be held on August 30, 2023 at 5:00PM with five (5) deficiencies and four (4) comments:

1. Needs waiver for plan size and scale
2. Needs owner's signature
3. Needs NPDES
4. Needs Zoning Permit
5. Needs Storm Water Maintenance Agreement

Comments:

1. Recommend and agreement between the developer and the township with the preliminary plan delineating all the proposed phases as well as deadlines within whch final approval of each phase are intended to be filed. Updated annually until final approval of final phase has been granted
2. Recommend a road study be conducted for the speed limit, weight limit, and a "stope except right turn" sign on Meadowlark
3. Recommend a visual elevation presentation of the site be provided
4. Recommend township emergency responders be informed of the scope of the project

Please plan to be present or have your authorized representative at the meeting of the Athens Township Supervisors on August 30, 2023, at 5:00PM. If you should have any questions, please call 570-888-2325.

Sincerely,

ATHENS TWP. PLANNING COMMISSION

Marion Carling, Chairwoman

MC/cp

Re: Proposed mining project in Athens Township, PA

1 message

Ladin, Zachary S <zachary_ladin@fws.gov> Fri, Jan 5, 2024 at 10:37 AM
To: "Murphy, Sean" <semurphy@pa.gov>
Cc: Tim Gourley <tg@tractllc.com>

Hi Sean,

Happy New Year! I just spoke with Tim Gourley (cc'd) who's working as a consultant for a proposed mining project in Athens Township, PA.

Tom Wittig had been consulting with the project the past few years, given there was previously a documented active bald eagle nest adjacent to the project area (a roughly 150-acre area). However, PNDI and other ground-based surveys in 2020 indicated that that particular nest is no longer present. The project has consulted with us and has completed our Bald Eagle Project Screening Form, however to date there are no known nests in the area.

I mentioned that Tim should connect with you for more accurate info on eagle nest presence locations in PA, and that if during any subsequent monitoring efforts an active eagle nest is located within proximity of the project that might result in potential disturbance, to reach back out to our office so we provide additional info on the permitting process for Eagle Incidental Take - Short term permits.

Best wishes,
Zach

Zachary Ladin
Supervisory Wildlife Biologist
Migratory Bird Program
Northeast Region
US Fish & Wildlife Service
300 Westgate Center Drive
Hadley, MA 01035

RE: [External] BB - Minard Mine - 08230301 - Eagle Nest sites

1 message

Murphy, Sean <semurphy@pa.gov> Tue, Feb 13, 2024 at 9:32 AM
To: Tim Gourley <tg@tractllc.com>, "Ladin, Zachary S" <zachary_ladin@fws.gov>, Dustin Bishop <dustin@bishopbrothersinc.com>, "mindy@bishopbrothersinc.com" <mindy@bishopbrothersinc.com>
Cc: "Wenner, Kevin" <kewenner@pa.gov>, "Fritsky, Richard" <rfritsky@pa.gov>, "Eyler, Chad" <ceyler@pa.gov>

Tim,

I received your message yesterday. Thank you for your patience on this one. The Game Commission is not aware of any additional eagle activity at this location. Pennsylvania will defer to the USFWS decision. Thank you for continuing to follow up with the Pennsylvania Game Commission. If activities change or an eagle nest is discovered during project activities, please reach out to the FWS and Game Commission immediately.

I have included relevant regional staff, so they are all aware of the likely activity near the nests.

Sincerely,

Sean

From: Tim Gourley <tg@tractllc.com>
Sent: Friday, January 26, 2024 10:54 AM
To: Murphy, Sean <semurphy@pa.gov>; Ladin, Zachary S <zachary_ladin@fws.gov>; Dustin Bishop <dustin@bishopbrothersinc.com>; mindy@bishopbrothersinc.com
Subject: [External] BB - Minard Mine - 08230301 - Eagle Nest sites

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown senders. To report suspicious email, use the Report Phishing button in Outlook.*

Sean/Zach

See attached exhibit map with the proposed mine permit boundary and the two nesting sites. As detailed in past correspondence by Mr. Wittig, Site #1 nest site was verified while Site #2 has not been verified.

We request Site #2 be removed from consideration.

I am available to discuss the project and any questions you may have.

Thanks

Tim

Tim Gourley, PE

President

Tract Engineering, PLLC

120 Ridge Ave

State College, PA 16803

NORTHEAST BALD EAGLE PROJECT SCREENING FORM

Welcome!

What is the purpose of this form? The U.S. Fish and Wildlife Service (Service) designed this form as a voluntary tool to help people comply with the Bald and Golden Eagle Protection Act (BGEPA) by planning activities in a manner that avoids disturbing nesting bald eagles. To disturb a bald eagle nest means to agitate or bother a bald eagle to a degree that causes, or is likely to cause, that eagle to abandon its nest, suffer injury, or be unable to perform activities necessary to its survival. While all guidance included in this form is voluntary, individuals and organizations that disturb eagles may be subject to fine and prosecution under BGEPA.

How is this form different from the National Bald Eagle Management Guidelines? The National Bald Eagle Management Guidelines (Guidelines) is a document published by the Service in 2007 that provides background information on the biology of bald eagles, explains the Federal laws and regulations protecting them, and lays out guidance for several categories of human activities that can affect their nesting. This form takes the Guideline's recommendations, fits them to the regional conditions of the Northeast, and offers them to you in an interactive and intuitive format. Because the form fits its assessments and recommendations to the needs and behaviors of nesting bald eagles in the Northeast, you may find that it differs from the Guidelines on certain details. Nonetheless, the ultimate goal remains the same: to keep project proponents in compliance with BGEPA, while also protecting nesting bald eagles from disturbance.

How this form works. To complete this form, first, find the category of activities that includes your proposed activity. Then, go to the page listed for that category to assess whether your project may risk disturbing nesting bald eagles. If the form identifies that your activities may disturb nesting bald eagles, follow the recommended avoidance measures. These measures will identify factors that could influence nesting eagles' sensitivity to your activities: distance, visibility, timing, and exposure to other human activities. Sign the self-certification that you have committed to implementing the appropriate measures. If your proposed activities fall into multiple categories, repeat this process for each category. Additionally, if your project has the potential to affect multiple nests, complete a separate form for each nest site.

What to do with your completed form. Once you have signed your self-certification, keep the form for your personal records. You do not need to submit your completed form to the Service. Keep the form and additional pages that may be helpful to your future planning and compliance. If a local, state, or federal authority asks for documentation that you are complying with the Service's regional guidance, you can present them with your completed and signed form.

INTRODUCTION

What to know before you start. You will need a few pieces of information to help you complete this form.

Breeding Season

For temporary activities that might be loud or very visible, one of the simplest and most effective ways to avoid disturbing a bald eagle nest is to time the activity when eagles are not nesting, that is, outside the bald eagle breeding season. Wildlife agencies often refer to this type of measure as a time-of-year restriction. The bald eagle breeding season lasts approximately seven to eight months and has many stages. Start and end dates to this season can vary by location, year, and breeding pair. For simplicity, general dates are often set at a statewide level. Consult Appendix A to find the breeding season in your area.

Visibility

For some categories of activities, this form will ask whether your project activities will be visible to the nest. There are two general approaches to answering this question, a desktop assessment and a site visit. A desktop assessment involves consulting online mapping resources, such as Google Maps or state nest maps (see Appendix B), which can display your project location and the nest location on satellite or aerial imagery. When viewing this imagery, look to see whether there are landscape features or structures that might screen the nest's view of your activities. Your assessment is only as good as your imagery. Make sure the imagery is current and accurately reflects visibility conditions on the ground.

The second option is to visit your project location. Assess from various points in your project footprint whether you can see the nest. Use binoculars (4X power or greater) or spotting scope to assist your viewing. If you plan to visit the project site during the breeding season, be aware that your presence could also disturb the nest. Maintain 330' feet between you and the nest, or at least as much distance as the nearest ongoing foot traffic at the nest site. You should only perform your site visit from property legally accessible to you.

Using both the field and desktop approach will give you your best answer. If there is need to select between the two options, a site visit will generally provide a better sense of visibility. In either approach, consider that your activities may become more visible during portions of the year when leaves are off trees and other vegetation.

Nest Location

To figure out how close or how visible your activities will be, you will need precise knowledge of the nest's location. If you do not already have this information, check Appendix B to see if any online or state resources are available. If you are unable to get this information from any of these sources, survey the site. As when assessing visibility, you should only perform your visit on property legally accessible to you. You should also avoid coming within 330 feet of a nest during the breeding season, unless you know that the eagles have previously tolerated people at whatever shorter distance you are planning to use. For descriptions and examples of bald eagle nests, and explanation of how they differ from other large bird nests, see "Appendix C – Guide to Nest Identification."

If you feel unable to perform this search, consider employing the services of a wildlife biologist experienced in this type of surveying. Alternatively, consider contacting your state or local wildlife agency to see if they would be able to perform a site visit (please be aware that many state and local wildlife agencies are constrained in their resources and time and may not be able to offer this service). Be sensitive to sharing information about nest locations. Attracting public interest to a nest site can threaten the safety of that nest. Some states also continue to prohibit the release of nest locations.

It is possible that you will be unable to find a reported nest. While bald eagles commonly use nests across breeding seasons, nests do not always survive from one season to the next. Nests may fall apart of their own accord or be blown down by high winds. Bald eagles may also stop using a nest for one season or more, even if the nest as a structure still exists. In these scenarios, bald eagles may still reuse a former nest site in the following breeding seasons. The temporary absence of a nest or nesting eagles does not absolve you of your responsibilities to avoid disturbing future nesting at that site. The Service recommends implementing the measures included in this form for five years after the last breeding season eagles used a nest or, where the nest no longer exists, three years after the last breeding season in which the nest existed.

Similar Activities

One of the best indicators of what a nesting bald eagle pair will tolerate is what they have already tolerated. In certain places, this form will ask whether the nesting pair has experienced and tolerated similar activities at the nest location. To answer this question, you will need to know about previous human activity at that location. Was that activity similar in nature to what you propose? As close as or closer than what you propose to do? Did it occur at the same time of day? Time of year? Did it last as long? Was it as frequent? Was it as loud? Was it as visible? You will also need to know basic history about the nest. Did the nest exist before that previous activity? Was it ever used after that activity? If your answer to any of these questions is 'no,' you cannot answer 'yes' to the broader question of whether there is similar activity at that site. See "Appendix D – Similar Activity Example Exercise" for a demonstration of how to apply this principle.

Limitations

Know when and how you should be using this form. See "Appendix E – Limitations of this form."

Where to go for help. The Service understands that project proponents may occasionally need clarification on which assessments are relevant to them and how to implement certain avoidance and minimization measures. If you find you are unable to complete this form, you can contact your regional eagle coordinator (Tom Wittig) for assistance at

thomas_wittig@fws.gov - or - 413-253-8577

When emailing, please include in your subject line "BALD EAGLE SCREENING FORM QUESTION." If you are unable to connect with your regional eagle coordinator when calling, please leave a voice message that you are calling about this form and how best to reach you.

For explanation of technical terms used in this form, see "Appendix F – Glossary of Terms."

PROJECT INFORMATION

Project Name: Minard Mine

City: Athens Township **County:** Bradford **State:** PA

Lat/Long (decimal degrees; ex. *38.418310,-76.001096*)**:** 41.970139 -76.553444

Find Lat/Long via map

Size: 361 acres\miles

PROJECT CONTACT INFORMATION

Name: _____ **Phone:** _____

Address: Bishop Brothers Construction Company, Inc.

_____

Email: _____

If your project has a Federal (ex. U.S. Army Corps), state (ex. PNDI), or other ID number, please list here: PA PNDI #701203

PROJECT ACTIVITY CATEGORY(S)

Place a check next to all activities you plan to perform.

- [x] Construction and Development Activities → go to pages 5 - 7
- [ ] Maintenance and Restoration Activities → go to pages 8 - 9
- [ ] Timber Operation and Forestry Practices → go to page 10
- [ ] Use of Helicopters and Fixed-wing Aircraft → go to page 11
- [x] Blasting and Other Loud, Intermittent Noises (including Fireworks) → go to page 12
- [ ] Recreational Activities → go to pages 13 – 14

Feedback? The Service is continuously looking to improve this form. If you have suggested changes, please feel free to email them to us at thomas_wittig@fws.gov. Include "Bald Eagle Project Screening Form – Feedback" in your subject line.

Construction and Development Activities

Which specific construction activities do you plan to perform? (check all that apply)

- ☐ Building construction
- ☒ Tree and land clearing
- ☐ Construction of roads, trails, canals, power lines, pipelines and other linear utilities
- ☐ Agriculture or aquaculture – new or expanded operations
- ☐ Alteration of shorelines or wetlands
- ☐ Installation of docks, piers, or moorings (pile driving may qualify as loud noise, page 12)
- ☐ Water impoundment or withdrawal
- ☒ Mining
- ☐ Oil and natural gas drilling and refining
- ☐ Wind farm construction
- ☐ Installation or expansion of marinas with a capacity of 6 or more boats
- ☐ Communications tower construction (excluding maintenance and repairs)

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated? Consider both construction and use/operation of your project.

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☐ Yes → No avoidance measures recommended. Go to self-certification (page 7).
- ☒ No → Go to next question.

Will your activities be visible to the bald eagle nest(s)?

- ☐ Yes → Stop. Implement Avoidance Measures (AM) 2, 4, and 5 (see page 7)
- ☒ No → Go to the next question

Which of these categories most closely matches your proposed project or activity?
(check all that apply)

☐ Building construction, 1 or 2 story, with a project footprint of ½ acre or less ☐ Construction of roads, trails, canals, power lines, or other linear utilities ☐ Agriculture or aquaculture – new or expanded operations ☐ Alteration of shorelines or wetlands ☐ Installation of docks or moorings ☐ Water impoundment or withdrawal ☐ Construction of communication towers **→ Implement AM 3, 4 and 5 (page 7)**	☐ Building construction or expansion, 3 or more stories ☐ Building construction or expansion, 1 or 2 story, with project footprint more than ½ acre ■ Mining ☐ Oil and natural gas drilling and refining ☐ Installation or expansion of marinas with a capacity of 6 or more boats **→ Go to the next question**

Is there a similar activity within 1 mile of the nest?

☐ Yes → Implement AM 3, 4 and 5 (see page 7)

■ No → Implement AM 1 and 5 (see page 7)

AVOIDANCE MEASURES - Place a check mark next to each avoidance measure (AM) that this form instructed you to implement and that you can commit to following. The Service recommends you follow the applicable AMs to prevent your activities from disturbing nesting bald eagles.

☒ AM 1 – Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the nest.

☐ AM 2 – Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the nest. If there is an existing human-made feature (e.g., house, road, dock) similar to your project that is closer than 660 feet and tolerated by the nesting eagles, maintain a distance buffer equal to or greater than the distance separating that tolerated feature and the nest.

☐ AM 3 – Maintain a distance buffer of at least 330 feet (100 meters) year-round between all project activities and the nest. If a similar activity (i.e., similar in kind and size) is closer than 330 feet and has been tolerated by eagles, the distance buffer will be the same or greater than that of the existing tolerated activity.

☐ AM 4 – Do not perform disruptive project activities within 660 feet (200 meters) of the nest during the breeding season. This time-of-year restriction is in addition to your recommended distance buffer. Disruptive activities include, but are not limited to, external construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.

☒ AM 5 – Maintain existing landscape buffers that visually screen the activity from the nest.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

Dusty L Bishop _____ 2/21/2024

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Maintenance and Restoration Activities

This category includes outdoor maintenance of existing structures or infrastructure, where the maintenance activity is temporary and obtrusive (e.g., requires use of heavy equipment or loud machinery), and within the previously disturbed footprint of the structure or infrastructure. If maintenance is proposed outside the previously disturbed footprint, see **Construction and Development Activities** (pages 5-7). This category also applies to the maintenance and restoration of natural habitats (e.g., wetlands, streams, rivers, non-forested uplands). This category does not include routine, ongoing activities to which bald eagles have already exhibited a tolerance (e.g., lawn mowing; plowing, planting or harvesting of agricultural fields; etc.).

Which maintenance or restoration activities do you plan to perform? (check all that apply)

- ☐ Maintenance of linear utilities (e.g., power lines, pipelines, water and sewer lines)
- ☐ Road, bridge, or culvert maintenance
- ☐ Trail, campground, or recreational area maintenance
- ☐ Maintenance of oil and gas wells, well pads, and storage tanks
- ☐ Maintenance of dams, levees, berms, canals and other water-control structures
- ☐ Pond, lake, or reservoir maintenance (draw downs, dredging)
- ☐ Stream or stream bank maintenance /restoration (e.g., stream bank fencing, stream bank stabilization, livestock crossings, in-stream habitat improvements, channel maintenance, dredging)
- ☐ Wetland maintenance / restoration (e.g., invasive plant control, restoration of hydrology)
- ☐ Prescribed burning for invasive control
- ☐ Upland habitat maintenance / restoration (e.g., planting or cutting of vegetation, invasive plant control, trash cleanup, abandoned mine lands restoration). This does not include activities in forests/woodlands (see **Timber Operation and Forestry Practices**) or in agricultural fields.

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated? Consider both construction and use/operation of your project.

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

- ☐ Yes → No avoidance measures recommended. Go to self-certification.
- ☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow these AMs to prevent your activities from disturbing nesting bald eagles.

☐ AM 6 - Within 660 feet (200 meters) of the nest, perform all loud and intrusive maintenance and restoration work outside the breeding season. These activities include, but are not limited to, the following: construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, landscaping, and habitat restoration activities.

☐ AM 7 - Maintain existing landscape buffers that visually screen the activity from the nest.

☐ AM 8 - Do not perform prescribed burning within 660 feet (200 meters) of the nest during the breeding season. If there is no practicable alternative to scheduling prescribed burning during the breeding season, only conduct burns when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is in use or after the young have fledged from that nest).

☐ AM 9 - When performing prescribed burning within the drip line of the nest tree, rake leaves, vines, and woody debris from around the base of the tree to prevent fire from climbing the tree. When burning within a patch of forest containing the nest tree, take precautions to prevent crown fire.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Timber Operation and Forestry Practices

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow these AMs to prevent your activities from disturbing nesting bald eagles.

☐ AM 10 – Do not perform clear-cutting or overstory tree removal within 330 feet (100 meters) of the nest at any time of the year.

☐ AM 11 - During the breeding season, do not perform timber harvesting, road construction, chain saw use, or yarding operations within 660 feet (200 meters) of the nest. Around alternate nests (including nests that were attended during the current breeding season but not used to raise young), you may reduce this distance to 330 feet (100 meters), provided the eggs laid in another nest within the nesting territory have hatched.

☐ AM 12 – Do not construct or operate log transfer facilities and in-water log storage areas within 330 feet (100 meters) of nests at any time of the year.

☐ AM 13 – Do not perform selective thinning, prescribed burning, or other similar silviculture practices for the enhancement or conservation of habitat within 660 feet (200 meters) of the nest during the breeding season. If there is no practicable alternative to scheduling prescribed burning during the breeding season, only conduct burns when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the breeding season, either before the particular nest is active or after the young have fledged from that nest).

☐ AM 14 – When performing prescribed burning within the drip line of the nest tree, rake leaves, vines, and woody debris from around the base of the tree to prevent fire from climbing the tree. When burning within a patch of forest containing the nest tree, take precautions to prevent crown fire.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ 2/21/2024

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Use of a Helicopter and Fixed-wing Aircraft

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

☐ Yes → No avoidance measures recommended. Go to self-certification.

☐ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow this AM to prevent your activities from disturbing nesting bald eagles.

☐ AM 15 - During the breeding season, do not fly within 1000 feet (305 meters) of bald eagle nests.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Blasting and Other Loud, Intermittent Noises (including Fireworks)

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of day	-distance
-frequency	-time of season	-volume

☐ Yes → No avoidance measures recommended. Go to self-certification.

☒ No → Go to Avoidance Measures.

AVOIDANCE MEASURES - Place a check mark next to each AM that you can commit to following. The Service recommends you follow this AM to prevent your activities from disturbing nesting bald eagles.

☒ AM 16 - During the breeding season, do not perform blasting and other activities that produce extremely loud noises within 1/2 mile (800 meters) of in-use nests. This measure also applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks intended for licensed public display.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

Dustin Bishop (signature) 2/21/2024 (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

Recreational Activities

Is your activity similar to an ongoing or previous activity that coincided with the breeding season and that bald eagles tolerated?

Consider all of the following elements/factors in answering:

-duration	-time of season	-area/footprint
-frequency	-visibility	-magnitude
-time of day	-distance	-nature

☐ Yes → No avoidance measures recommended. Go to self-certification.

☐ No → Go to next question

Will your recreation occur during the breeding season?

☐ Yes → Go to Avoidance Measures.

☐ No → No avoidance measures recommended. Go to self-certification.

AVOIDANCE MEASURES – For each applicable recreational subcategory, place a check mark next to the AMs you can commit to following. The Service recommends you follow the applicable AMs to prevent your activities from disturbing nesting bald eagles.

Non-motorized recreation and human entry (including hiking, camping, fishing, hunting, canoeing)

☐ AM 17 - Stay at least 330 feet (100 meters) from the nest if you walk, bike, canoe, camp, fish, or hunt near an eagle nest during the breeding season and your activity will be visible or can be heard from the nest.

Off-road vehicle use (including snowmobiles)

☐ AM 18 - Stay at least 330 feet (100 meters) from the nest. In open areas, where there is increased visibility and exposure to noise, stay at least 660 feet (200 meters) from the nest.

Motorized watercraft use (including jet skis/personal watercraft)

☐ AM 19 - Do not operate jet skis (personal watercraft) or airboats within 330 feet (100 meters) of the nest.

☐ AM 20 - Avoid concentrations of noisy vessels (e.g. commercial fishing boats and tour boats) within 330 feet (100 meters) of the nest, except where eagles have demonstrated tolerance for such activity.

☐ AM 21 - For all motorized boat traffic within 330 feet (100 meters) of the nest, minimize trips and avoid stopping in the area, particularly where eagles are unaccustomed to boat traffic.

Do you commit to following all recommended avoidance measures?

☐ YES – I certify that I have completed this form to the best of my ability, answered all questions completely and accurately, and committed to implementing all applicable avoidance measures.

_____ _____

(signature) (date)

U.S. Fish and Wildlife Service Determination: Based on your responses and commitment to implementing all applicable avoidance measures, the Service has determined that your proposed activities are unlikely to disturb nesting bald eagles.

☐ NO – I am unable to follow one or more of the avoidance measures recommended by this form.

Go to page 15 for further instruction.

-- SEEK FURTHER GUIDANCE --

You have indicated that you are unable to implement all the recommended avoidance measures. Without all avoidance measures, your activities may risk disturbing nesting bald eagles.

Consult with your regional eagle coordinator to determine the appropriate next steps. The Service will work with you to help develop alternate measures to avoid disturbance of nesting bald eagles. If there are no feasible alternate measures, the Service may advise that you obtain an eagle incidental take permit to relieve you of legal liability in the event that your activities unintentionally disturb nesting bald eagles.

Contact your regional eagle coordinator (Tom Wittig) for assistance at thomas_wittig@fws.gov

When emailing, please include in your subject line "[Your project name] – SCREENING FORM FURTHER GUIDANCE." In the body of your message, include

-a brief description of your project, including its location and when you plan to start;

-the activity category(s);

-the ID number(s) (e.g., AM 5) of the Avoidance Measure(s) you are unable to implement; and

-the nest location(s), if available.

To see the Service's eagle incidental take permit application form, go to

https://www.fws.gov/forms/3-200-71.pdf

For answers to Frequently Asked Questions on this form, go to

https://www.fws.gov/migratorybirds/pdf/policies-and-regulations/3-200-71FAQ.pdf

The Service advises you talk with your regional eagle coordinator before deciding to apply.

APPENDIX A

Bald Eagle Breeding Season by State

State	Breeding Season
VA	December 15 – July 15
DC	December 15 – July 15
WV	January 1 – June 30
MD	December 15 – June 30
DE	December 15 – June 30
PA	January 1 – July 31
NY	January 1 – September 30
NJ	January 1 – July 31
RI	January 1 – July 31
CT	January 1 – July 31
MA	January 1 – August 15
VT	February 1 – August 15
NH	February 1 – August 15
ME (coastal)	February 1 – August 15
ME (northern)	March 1 – August 30

APPENDIX B

State Mapping Resources

Connecticut

Contact state
Brian Hess, CT DEEP
Brian.Hess@ct.gov

Delaware

Contact state
Katie Kadlubar, Delaware Division of Fish & Wildlife
Kathryn.Kadlubar@delaware.gov

DC

Contact National Park Service
Mikaila Milton, NPS
mikaila_milton@nps.gov

Maine

https://www.arcgis.com/apps/webappviewer/index.html?id=796b7baa18de43b49f911fe82dc4a0f1

Maryland

https://marylandbirds.org/report-bald-eagle-nest/

Massachusetts

Contact state
Andrew Vitz, MassWildlife
Andrew.vitz@state.ma.us

New Hampshire

Contact state
https://www2.des.state.nh.us/nhb_datacheck/signin.aspx

New Jersey

Contact state
https://www.nj.gov/dep/parksandforests/natural/heritage/datareq.html

New York

Contact state
https://www.dec.ny.gov/animals/31181.html

Pennsylvania

https://fws.maps.arcgis.com/apps/webappviewer/index.html?id=87ac96536654495b9f4041d81f75d7a0

Rhode Island

Contact state
DEM.DFW@dem.ri.gov

Vermont

Contact state
https://vtfishandwildlife.com/conserve/development-review

Virginia

https://www.ccbbirds.org/maps/#eagles

West Virginia

Contact state
Rich Bailey, WVDNR
Richard.S.Bailey@wv.gov

Please note that maps are not exhaustive records of all nests within that state.

APPENDIX C

Guide to Nest Identification

Is it a bald eagle nest? Because bald eagle populations have grown so rapidly in recent years, not every bald eagle nest is registered to an online map or known to wildlife management agencies. As a result, project screening form users may occasionally have to make their own assessment of whether the nest near their project or activity is a bald eagle nest. Users should be cautious in making these determinations. Bald eagle nests can easily be confused with nests of other large birds such as osprey.

This guide will help landowners and project proponents assess whether a nest belongs to bald eagles or another species. It describes for readers the most commonly encountered large nests in the Northeast, with several reference figures for bald eagle nests, and provides tips for telling nest types apart. Any user who reads this guide and still feels uncertain about what type of nest they have encountered should contact their regional eagle coordinator for further guidance.

Common types of large nests.

Bald Eagle

The most notable aspect to a bald eagle nest is generally its size. Bald eagles build some of the largest nests in the world, with most nests around 5 feet in diameter and 3 feet in height (Fig. 1). Nests can grow well beyond these dimensions (Fig. 2), as bald eagles tend to repair and expand their nests each year and can use individual nests for decades. Bald eagle nests are mainly composed of large interwoven sticks. Nests will also have a soft interior bowl made up of materials such as hay, cornhusks, and grass clippings. However, this portion of the nest is rarely visible to human observers. The shape of bald eagle nests varies; they can take the general form of flat discs, inverted cones, cylinders (Fig. 2), or spheres (Fig. 3).

Bald eagles typically place their nests in prominent trees that sit above the surrounding forest canopy. These nest trees will often be on hillsides, lake and ocean shorelines, riverbanks, and forest edges. Nests are generally in the top third of a tree, below the crown, secured in a prominent fork off the main trunk (Fig 4.). Bald eagle nests can be in living deciduous (Fig. 3-4) and coniferous trees (Fig. 1), or dead trees (snags; Fig. 5). Within the Northeastern U.S., bald eagles use a wide range of tree types, including white pines, loblolly pines, tulip poplars, sycamores, oaks, and cottonwoods. Despite their common perception as an emblem of wilderness, bald eagles are also increasingly nesting on human-made structures such as electric transmission towers (Fig. 6) and communication towers.

Osprey

Osprey build large stick nests that can look quite similar to bald eagle nests. In general, osprey nests are smaller, flatter, more disorganized, and more often composed of unnatural materials, such as bailing twine and plastic bags. Osprey also show a stronger preference than bald eagles for human made structures, regularly nesting on light polls, channel markers, and cell towers. When osprey do select a natural support for their nest, it tends to be the topmost part of dead trees, in contrast to bald eagles, which seek out slightly lower portions of trees.

The best clue to which species occupies a nest, osprey or bald eagles, is who shows up. Bald eagles arrive back at their nests earlier in the year than osprey, but by late spring, both species are usually attending their nests. At this time of year, watching a nest over a period of hours will generally reveal which species is using it. However, through fall and early winter, both species are usually away from their nests. During these seasons, the only immediate sources of information on nest will be the physical details described above and online mapping resources.

In addition to the state maps for bald eagles listed in Appendix C, Osprey Watch (http://www.osprey-watch.org/) provides a mapping database of osprey nest locations. As with the bald eagle mapping resources, this map is thorough, but does not represent all existing nests.

Red-Tailed Hawk/Red-Shouldered Hawk

Generally around 1.5 feet wide and 2 feet tall, nests of red-tailed hawks and red-shouldered hawks are less than one-half the size of bald eagle nests. The individual sticks in these hawk nests also tend to be smaller, with diameters of about 1-2 inches. Overall appearance of these nests can be slightly more frayed and chaotic than that of bald eagle nests. Like bald eagles, both hawk species show a tendency towards nesting in upper portions of prominent trees. Red-tailed hawks also share bald eagle's occasional preference for human made structures such as cell towers and transmission towers.

Common Raven

Common ravens construct stick nests that vary substantially in size, from 1.5 to 5 feet across and from little over 0.5 to 2 feet high. The sticks making up the main structure of these nests can be around 3 feet in length and 1 inch in diameter. Ravens place their nests in a variety of natural and developed settings. Raven nests are easily confused with bald eagle nests when located on cell towers, transmission towers, or in trees. When situated in trees, these nests are usually in the upper portion of the tree in a crotch of the main tree stem. The best means of telling raven and bald eagle nests apart are likely size and shape; raven nests are noted for occasionally being asymmetric, and even at their larger sizes, they still tend to be smaller than bald eagle nests.

Great Horned Owl

In addition to nesting in tree cavities, great horned owls also frequently use the former nests of other animals, including squirrels, ravens, crows, and herons. The size and nature of a great horned owl nest therefore depends on the nest's original creator. Red-tailed hawk may be the most common source of nests for great horned owls in the Northeast. However, great horned owls will also occasionally take over bald eagle nests.

Heron

Herons nest in colonies known as "rookeries" where many nests are present; individual heron nests are rare. Multiple nests can be present in one tree and some nests may be located relatively high up or far out on branches. Nest sites are usually near water. Heron nests are mainly composed of sticks, and are flat and broad, often resembling a thin platform. Nests used for several years may grow taller and wider. Heron nests can give off a general impression of messiness or flimsiness.

Squirrel

Squirrel nests can reach basketball size or larger. They are distinguished from bird nests mainly by their materials, which include leaves and other soft vegetation material (e.g., grasses), and very few sticks. They are usually round shaped, and often look messy.

Legal definitions and protections for eagle and migratory bird nests.

Eagle Nests

BGEPA protects eagle nests in same manner it protects eagles; they cannot be destroyed, possessed, or relocated without a permit from the Service, which the Service only provides under a limited set of circumstances. Regulation defines an eagle nest as "any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction" (50 CFR 22.3). A nest is an eagle nest if it was built by or ever used by eagles, even if other species of birds played a role in the nest's history. For example, if osprey build a nest and eagles take that nest over, legally, the nest is an eagle nest. Alternatively, if great horned owls begin to use a nest originally built by eagles, that nest remains an eagle nest for as long as it exists. An eagle nest also retains protection regardless of where it was built, whether it was ever finished or successful, or when it was last used. Additionally, BGEPA's protections apply regardless of the nest's size and condition.

Migratory Bird Nests

The Migratory Bird Treaty Act (MBTA) protects migratory bird nests in the many of the same ways that BGEPA protects eagle nests. Unless a permit is in place, migratory bird nests cannot be possessed or relocated at any time or intentionally destroyed while active. One notable difference between MBTA and BGEPA is MBTA's standard on inactive nests. If a migratory bird nest is inactive, meaning it does not contain viable eggs or chicks, it can be destroyed without a permit. (Note: the

terms ‘active’ and ‘inactive’ here are different from the ‘in-use’ and ‘alternate’ standards used for eagle nests [see Appendix E for definitions].) For more information, please read the Service’s 2018 Nest Destruction Memo. Bird species protected under MBTA are listed under regulation at 50 CFR 10.13. Additional protections not described here apply to any migratory bird species listed under the Endangered Species Act. Tribal, state, and local laws may also place greater restrictions on the destruction of migratory bird nests.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

Figure 5.

Figure 6.

APPENDIX D

Similar Activity Example Exercise

What is the purpose of this appendix? This appendix provides project screening form users with an example of how to assess the similarity between two activities. By reading through this example, landowners and project proponents can develop a better sense of what factors they should consider when answering the question of whether their activity is similar to an ongoing or previous activity tolerated by eagles.

In the example scenario, a proposed residential construction project is compared to previous farming activity. The example starts with an overview of the historic farming activity, nest, and proposed project; then goes through a full assessment, set up in table format; and finally closes with a summary of the determination and explanation of how that determination would influence completion of the form.

What is the scenario?

Previous/Existing Activities

The project site is a large agricultural field that was farmed nearly every year for the past two decades. Human activity at the site was limited to occasional operation of heavy farm equipment. The broader area out to one mile includes other agricultural fields and medium density residential and commercial development.

Nest Location & History

Five years ago, a pair of bald eagles constructed a nest in a cottonwood located in the hedgerow bordering the agricultural field. The pair were unsuccessful in their first year, but fledged young from the nest each of the following four years up to present. Workers observed that the pair did not respond to operation of farming equipment, but became vigilant whenever an equipment operator stepped outside their vehicle.

Project Narrative

The proposed project will convert portions of the existing agricultural field to a residential development with 30 single-family homes, which places it under the screening form's Construction and Development category. Construction will require extending water, sewage, and electrical utilities and adding a small network of residential streets. Preparing each lot will involve grading, home and driveway construction, and landscaping. Ten acres of property near the nest will be signed over as a conservation easement.

Factor	Previous/Existing Activity: Farming	Proposed Activity: Construction	Similar?
NATURE	Heavy equipment preparing field, planting, and harvesting crop. Two-three workers, generally confined to closed cab tractors.	Twenty workers either in heavy equipment or on foot. Ground disturbance. Placement/extension of utilities. Landscaping. Construction of 20 homes.	No
HISTORY	Farming activity predated nesting and continued while eagles successfully fledged young from the nest. This success demonstrates the eagles tolerated the farming.	N/A	Yes
DISTANCE	Distance between farming activity and the nest tree was essentially 0 feet; the hedgerow in which the nest is located bounds the agricultural field.	Nearest lot boundary will be 400 feet from nest. Area between home and nest will be converted conservation easement and left in passive, natural state.	Yes
TIMING	Farming activity began in March and continued through October each year.	Proposed schedule is April through October.	Yes
DURATION	The field was generally worked for one to two days at time, from sunrise to sundown.	On days of construction activity, work will occur during standard business hours.	Yes
FREQUENCY	Intermittent. Farming occurred in stages (e.g., fertilizing, plowing, harvesting) and events were often separated by weeks or months.	Continuous. Work will occur most weekdays and occasionally on weekends.	No
NOISE	Farming equipment (e.g., tractor) generated loud noises within the range of 80 – 100 decibels.	Construction will not require blasting or pile driving. Construction equipment (e.g., backhoes) will generate loud noise within the range of 80 – 95 decibels.	Yes
VISBILITY	High. Because the field was flat and there was no vegetation other than the hedgerow, practically all farming activity was visible to the nest.	High. There will be no topography or vegetation screening view of construction. Visibility will only begin to lower once exterior walls are put up.	Yes

Final Assessment & Conclusion

The proposed construction activity is different from the historic farming activity in general nature and frequency. Construction will require more workers and more equipment, operating at greater intensity and higher frequency. Because of these differences, the construction cannot be considered similar to the historic farming activity, and it cannot be assumed that the breeding pair will tolerate the activity. Avoidance measures will be necessary to reduce the likelihood of disturbing the nest.

Having made these conclusions, the form user would mark 'No' to the question on page 5 of whether the activity was similar to an ongoing or previous activity. Then, at the next question the user would mark 'Yes' because the project would be visible to nest over the open intervening space. At that point, the form would direct them to implement AMs 2, 4, and 5. The project design, as proposed, would not meet AM 2, the 660-foot buffer. The user's options then would be to revise the project to eliminate the portions within 660 feet of the nest and sign the self-certification, or check no on the commitment to follow all recommended AMs and seek further guidance.

APPENDIX E

Limitations of This Form

This project screening form is not a permit or authorization to disturb bald eagles. It does not free you from legal liability under BGEPA. Rather, this form provides instruction on how to minimize the legal risk of disturbing nesting bald eagles.

The effectiveness of this form depends on the accuracy and completeness of your answers and your compliance with the avoidance measures. Using this form inappropriately may put you at risk of disturbing nesting bald eagles and violating BGEPA.

This form's recommendations are specific to the Northeast and may not be effective outside this region. If your project is in another area of the U.S., do not use this form. Instead, consult with your regional eagle biologist or migratory bird permit office for guidance matched to your locality.

This form only relates to managing activities near bald eagle nests. It does not provide direction on how to avoid disturbing bald eagle communal roosts and concentration areas, which, compared to nest sites, have different biological significance to eagles and present different sets of concerns. If you believe your activities have any potential to affect a communal roost or concentration area, consult the Guidelines document for guidance.

Conditions such as the location and existence of nests and surrounding habitat are subject to change between years. For this reason, the Service recommends revisiting your determinations every breeding season after completing this form until your project is complete. The more time that passes between when you complete this form and when you end your activities, the more likely it is that conditions will change enough that your original determinations no longer apply.

This form only addresses nesting bald eagles. To identify other USFWS-managed resources and suggested conservation measures for your project, go to https://ecos.fws.gov/ipac/.

Wind energy developers seeking to address potential take of eagles should use this form in conjunction with the Service's Eagle Conservation Plan Guidance. Use of this form alone will not assure wind projects' compliance with BGEPA's protections on disturbance or other take.

Certain states and localities have their own laws, regulations, and guidelines for protecting bald eagles and their nests. Completing this form does not guarantee that you are also in compliance with these other standards and/or regulations. If you are unfamiliar with your state and local standards, consult with the appropriate agencies and authorities.

You are responsible for ensuring that your activities comply with all applicable Federal, tribal, State, and local laws and regulations. This form will only help you in your compliance with BGEPA and its protections on the nesting activity of bald eagles.

APPENDIX F

Glossary of Terms

Alternate nest – one of potentially several nests within a nesting territory that is not an in-use nest at the current time. When there is no in-use nest, all nests in the territory are alternate nests. Also sometimes referred to as an inactive nest (e.g., in the Service's 2009 Eagle Rule).

Communal roost – an area where eagles gather repeatedly in the course of a season and shelter overnight and sometimes during the day in the event of inclement weather.

Disturb – to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.

In addition to immediate impacts, this definition also covers impacts that result from human-caused alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that injures an eagle or substantially interferes with normal breeding, feeding, or sheltering habits and causes, or is likely to cause, a loss of productivity or nest abandonment.

Eagle nest – any assemblage of materials built, maintained, or used by bald eagles or golden eagles for the purpose of reproduction.

Fledge – to leave the nest and begin flying. For bald eagles, this normally occurs at 10-12 weeks of age.

In-use nest – a bald or golden eagle nest characterized by the presence of one or more eggs, dependent young, or adult eagles on the nest in the past 10 days during the breeding season. Also sometimes referred to as an active nest.

Landscape buffer – a natural or human-made landscape feature that screens eagles from human activity (e.g., strip of trees, hill, cliff, berm, sound wall).

Nest abandonment – nest abandonment occurs when adult eagles desert or stop attending a nest and do not subsequently return and successfully raise young in that nest for the duration of a breeding season. Nest abandonment can be caused by altering habitat near a nest, even if the

alteration occurs prior to the breeding season. Whether the eagles migrate during the non-breeding season, or remain in the area throughout the non-breeding season, nest abandonment can occur at any point between the time the eagles return to the nesting site for the breeding season and the time when all progeny from the breeding season have dispersed.

Nesting territory – the area that contains one or more eagle nests within the home range of a mated pair of eagles, regardless of whether such nests were built by the current resident pair.

Northeast – Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia, and the District of Columbia.

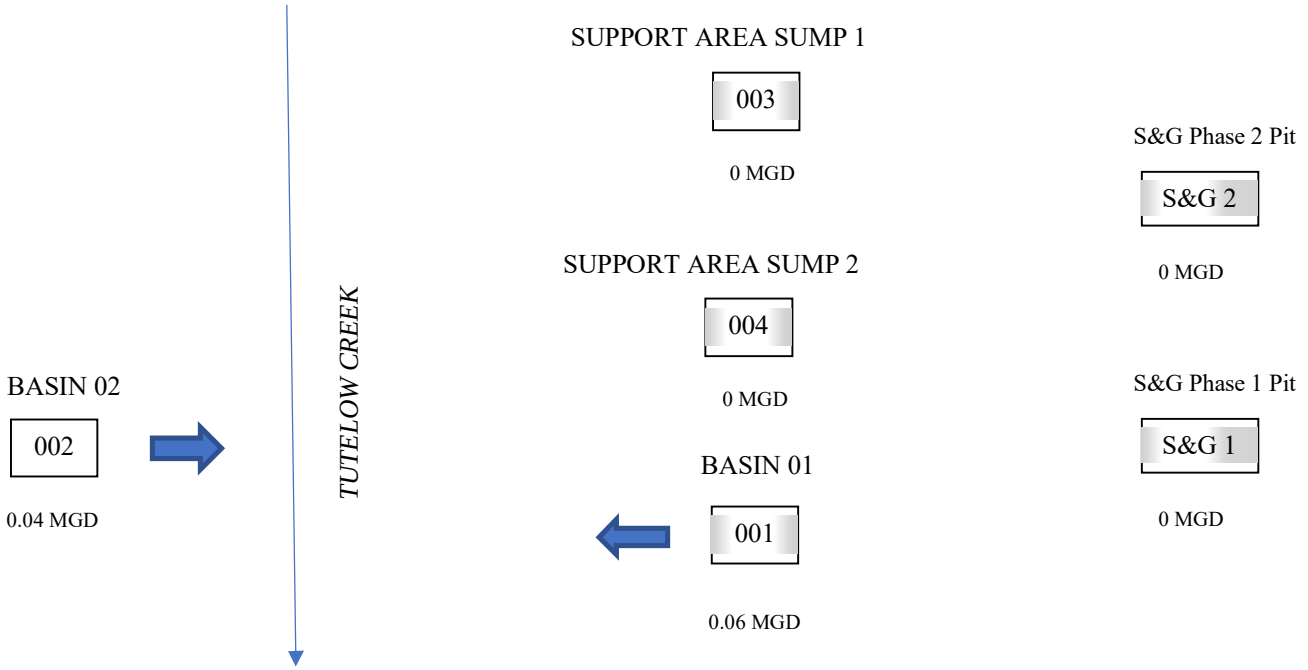
Project footprint – the area of land (and water) temporarily or permanently altered by a project.

Tolerate – the acceptance of specific human activities by eagles at the nest site. Demonstrated in the eagles' continued ability to successfully feed, breed, and shelter, and the general absence of stress or agitation in their behavior.

For non-discharging sedimentation traps and groundwater infiltration points, provide the description and location:			
Discharge/Sampling Point:	**Latitude:**	**Longitude:**	**Source of Discharge (e.g., sedimentation pond, groundwater sump, etc.):**
003	**41 58 10.3**	**76 32 52.4**	**Support Area Sump 1**
004	**41 58 07.2**	**76 32 48.0**	**Support Area Sump 2**
S&G 1	**41 58 07.5**	**76 32 49.2**	**S&G Phase 1 pit**
S&G 2	**41 58 26.9**	**76 33 20.3**	**S&G Phase 2 pit**

Depict the structures and corresponding discharge points, average flow rate, and receiving stream(s) in a flow diagram. Include line drawing below or attachment. [40 C.F.R. § 122.21(g)(2)]

Example:



Module 8: Hydrology
[§§77.405-407, 77.457, 77.521]

8.1 Chemical Analysis.

Provide the following data, in accordance with 8.2 for each point in the background sampling and monitoring program and report on Module 8.1(A) (separate form).

a) pH (field & laboratory) **SEE ATTACHED 8.1A SHEETS**
b) Total Suspended Solids (mg/l)
c) Total Dissolved Solids (mg/l) or Specific Conductance ($\mu S/_{cm}$ at 25°C)
d) Field temperature at sample source (°C).
e) Provide the following in addition to a) through d) above, if requested by the Department. *

Total Alkalinity (mg/l)
Total Acidity (mg/l)
Total Iron (Fe) (mg/l)
Total Manganese (Mn) (mg/l)
Sulfates ($S0_4$) (mg/l)

*If the proposed noncoal minerals to be mined are located within the coal fields or other known acid producing areas or a watershed sensitive to mining impacts, additional parameters may be required by the Department. Contact the appropriate District Mining Office prior to beginning sampling to determine if these parameters are needed.

f) Flows of perennial streams above and below the operation and surface and underground mine discharges must be measured by approved methods. In addition, other flows from springs, streams, seeps or other discharge points in the representative monitoring program should be measured to reflect seasonal variations. (The Department may waive sampling points if there is a representative sampling of the requested points.) The elevations and flows of springs, seeps, and mine discharges are required.

g) Provide a description of the type of sample point (e.g. well, spring, etc.) and its relationship to the mine site (e.g. up-gradient, perched aquifer, down-gradient).

Sample Point	Surface Elevation	Description	Location
1A	770	Jennette Minard Well	NE of permit area
1B	770	wetland	Northcentral permit area
65A	1120	Onofre Well	NW of permit area
66A	1148	Rose Well	NW of permit area
94A	790	Sparduit Well	NW of permit area
96A	779	Blackman Well	NW of permit area
97A	UNKWN	Blanchard Well	North of permit area
99A	777	Elsbree Well	North of permit area
100A	774	Forest Well	North of permit area
101A	774	Rosh Well	North of permit area
102A	773	JDS Well	NE of permit area
103A	766	JDS Well	NE of permit area
104-1A	782	Richard Minard Well	North of permit area
107-1A	772	Ward Well	North of permit area
107-2A	772	Wheeler Well	North of permit area
108A	768	Marvin Miller Well	NE of permit area
109A	769	Dabroski Well	North of permit area
111-3A	769	Elsbree Well	North of permit area
S1A	745	Downstream Tutelow Creek	SE corner of permit area
S1B	756	Tutelow Creek at existing crossing	Central permit area
S1C	784	Upstream Tutelow Creek	NW of permit
S2A	776	UNT 2 to Tutelow Creek	Central permit area
S3A	764	UNT 2 to Tutelow Creek	Central permit area
S4A	778	UNT 4 to Tutelow Creek (pond outfall)	NW permit area
S5A	744	Downstream Chemung River	SE of permit area
S5B	783	Upstream Chemung River	NE of permit area

8.2(A)(8) PRIVATE WATER SUPPLY INFORMATION (key to Module 6.2)

Parcel ID (Sample Point No)	Owner	Type of Supply (Dug or Drilled Well, Spring)	Use	Surface Elevation (MSL)	Depth of Well	Depth of Casing	Diameter of Well	Static Water Elevation (MSL) or Flow, Date of Measurement	Type of Treatement If Any (iron filter, etc.)
65	David Onofre 534 Meadowlark Drive Athens PA 18810	Drilled Well Vanderhoof 2012	Domestic	~1120	Unkwn	Unkwn	6”	---	Whole house filter No reported staining, odor, or cloudiness
66	Andrea Kovaks Rose 291 Meadowlark Drive Athens PA 18810	Drilled Well Vanderhoof 2005	Domestic	~1148	Unkwn	Unkwn	6”	---	Whole house filter No reported odor, or cloudiness. Some iron staining
94	Eileen Sparduit 972 Meadowlark Dr Sayre PA 18840	Drilled Well	Domestic	790	Unkwn	Unkwn	Unkwn	---	Culligan installed 2016 Reported seasonal cloudiness
96	Daniel & Kristi Blackman 1072 Meadowlark Dr Sayre, PA 18840	Drilled Well ***Havens Well Drilling 2018***	Domestic	779	***80’***	***74’***	***6”***	***100 gpm 10’ SWL drilled***	---
97	Roberta Blanchard 1334 Meadowlark Dr Sayre PA 18840	Drilled Well Vanderhoof 1976	Domestic	Unkwn	91’	Unkwn	6”	---	Reported reddish-brown staining
99	Douglas Elsbree 65 Markham Road Sayre PA 18840	Drilled Well ~2010	Domestic	777	Unkwn	Unkwn	6”	---	Whole house filter Reported bad taste
100	Arthur Forrest 1410 Meadowlark Dr Sayre, PA 18840	Drilled Well	Domestic	774	***95’***	***93’***	***6”***	***20 gpm 17’ SWL drilled***	---
101	Bud Rosh & Adrianna Vossbrinck 4608 Mile Lane Road Sayre PA 18840 (1460 & 1478 Meadowlark)	Drilled Well Vanderhoff 1975	Domestic	774	150	150	6”	---	Reported staining, odor, and cloudiness.
102	JDS 1522 Meadowlark Dr Sayre, PA 18840	Drilled Well ***Vanderhoof 2013***	Domestic	773	***88’***	***88’***	***6”***	***25 gpm 15’ SWL drilled***	---
103	JDS 1570 Meadowlark Dr Sayre, PA 18840	Drilled Well ***Vanderhoof 1967***	Domestic	766	***59’***	***59’***	***6”***	***18 gpm 10’ SWL drilled***	---
104 (1A)	Jennette Minard 312 Minard Ln Sayre, PA 18840	Drilled Well 1920’s	Domestic	770	NA	NA	6”	753.4 08/25/20 752.6 09/30/20 752.7 10/26/20	No treatment Iron staining reported
104-1	Richard Minard 1284 Meadowlark Dr Sayre, PA 18840	Drilled Well Cummings 2002	Domestic	782	88	91’ (3’ above ground)	6”	762.0 03/05/20 757.0 08/25/20 756.1 09/30/20	No treatment. Iron staining reported Water once had a sulfer smell, but no longer
107-1	Gregg Ward 1449 Meadowlark Dr Sayre, PA 18840	Drilled Well ***Vanderhoof*** 1989,***1988***	Domestic	772	103’ ***90’***	103’ ***87’***	***6”***	***20 gpm 20’ SWL drilled***	Iron removal and softner
107-2	Erin Wheeler 1517 Meadowlark Dr Sayre, PA 18840	Drilled Well Dunn 2003	Domestic	776	78	76	***6”***	---	Reported some staining
108	Marvin Miller 1701 Meadowlark Dr Sayre PA 18840	Drilled Well ***Vanderhoof 1967***	Domestic	768	74’	74’	6”	12’ SWL drilled	None Reported good water quality and volume
109	Joseph Dabroski 1739 Meadowlark Dr Sayre, PA 18840	Drilled Well ***Vanderhoof 1967***	Domestic	769	***74’***	***74’***	***6”***	***12’ SWL drilled***	No Treatment, reported good quality
111-3	Ethan Elsbree 101 Markham Rd Sayre, PA 18840	Drilled Well ***Vanderhoof 2016***	Domestic	769	***88’***	***88’***	***6”***	***20 gpm 16’ SWL drilled***	---

*PaGWIS (Department of Conservation of Natural Resources) was searched for any ***available records.***

** Data for well 108 was obtained from Water Resource Report 68 – Table 21, page 68

b) Describe the groundwater movement and the conditions that control and influence the groundwater system. Include the influence on quantity and quality from underground mines, industrial or municipal effects, fracture zones, faults, karst features and cave systems. Provide a groundwater contour map, if suitable.

There are no known underground mines, caves, or karst features to influence the infiltration or movement of groundwater in the upland areas of this permit area. Infiltration and movement will result from the paths of least resistance, and gravity. The natural tendency of downward infiltration is affected laterally by the porosity of the strata, fractures within, and bedding surfaces/joints.

Groundwater movement within the regional Chemung River valley is being directed southeasterly between the valley walls and floor. Movement is affected primarily in a longitudinal fashion by the porosity of the sediments that have been deposited within the valley.

c) Identify the effects any current or previous mining (including previous mining at this site) has had on the quantity and quality of the groundwater in the area, including impacts from diminution, increased turbidity, suspended solids or settleable solids. Include description of the source, rock unit involved and the reasons for the effect.

The effects of previous mining in this area are unknown as very limited mining has occurred, and pre-mining water data is not available. Previous mining has consisted of the removal of a very small volume of rock for local construction projects. Site observations have not identified any obvious impacts to the quantity or quality of groundwater from the mining area.

8.4 Characterization of Surface Water [§§ 77.406 77.457 and 77.521]

a) Identify each stream receiving drainage from the proposed operation and the 25 Pa Code Chapter 93 projected water use classification.

Stream	***Classification***
UNT's to Tutelow Creek, Tutelow Creek, Chemung River, Susquehanna River	**WWF-MF**

b) Identify the effects which current or previous mining (including previous mining at this site) has had on the quantity and quality of the surface waters in this area, including impacts from increased turbidity, suspended solids or settleable solids. Include the source, rock unit involved, and reasons for the effect.

The effects of previous mining in this area are unknown as limited mining has occurred, and pre-mining water data is not available. Previous mining has consisted of the removal of a very small volume of rock. Site observations have not identified any obvious impacts to the quantity or quality of surface waters from the mining area.

c) Identify any current or previous land uses that may have significant impacts on surface water quantity and quality.

There are no known current or previous landuses affecting surface water quality or quantity within the permit area. Upriver development to the north of this permit area has likely had a minor impact to local surface waters as much naturally vegetated land has been converted to lands supporting commercial and industrial activities, thereby accelerating runoff across less impervious surfaces. The Chemung River has also likely been impacted by the development and growth of the town of Sayre to the east through unintentional increased runoff and pollutional discharges.

Overall, water quality of this area is fairly good with low sulfates (typically under 20 mg/l), low metals (with the exception of higher iron concentrations during periods of increased suspended solids), and pH values of 7.0-8.9 (with the exception of values measured as high as 10.22 at UNT 4 pond outfall – low to no flow).

Natuaraly occurring seasonal variations in water quality can be seen in stream samples of both the Chemung River and Tutelow Creek, as a function of flow rate. With increased seasonal flows, a dilution of alkalinity is observed in the Chemung from lower pH rainwater comprising a greater portion of the runoff. Additionally with increased flows comes an increase in flow velocity, capable of transporting a greater volume of suspended solids, which in turn can be observed to increase specific conductance. The same inferences can be applied to Tutelow Creek. However, there appears to be a biologic factor during low flow conditions that could be responsible for increased suspended solids. Stagnation and disturbance from foraging scavengers have been observed along the course of this stream. Alkalinity levels within Tutelow Creek are also shown to increase significantly from upstream to downstream, perhaps naturally from runoff of the steep slopes to the southwest, or residual/ongoing applications of lime products in support of the local agricultural activities.

8.6 Hydrologic Impact Assessment [§ 77.457 and 77.521]

a) Describe the groundwater hydrology in relation to the proposed mining operation (at maximum depth and lateral development) - i.e. - intercept regional water table, above regional water table, intercept perched water table, etc. State if and when groundwater will be intercepted (e.g., mining below the water table, installation of a production well for support or processing facilities). Include the depth to groundwater and the water table conditions present (artesian, regional, perched, etc.), the relationship to the mineral to be mined.

Minimal groundwater will be intercepted within the upland hard rock portion of this operation, due to the tight nature of the beds to be mined and the relatively steep slopes that shed precipitation rapidly. There are no known uses of this minor aquifer.

Mining on the valley floor for sand and gravel will intercept the regional groundwater system associated with the Chemung River valley. The removal of sand and gravel is proposed below a water table with a fluctuating surface elevation of approximately 750-755 MSL. No attempt will be made to dewater the sand and gravel pit as saturated conditions exist and the use of dredging equipment will be required. Mining is proposed to an elevation of approximately 720 MSL.

Although no impacts are expected to Wetlands I, II, or J, a series of piezometers are proposed adjacent to the wetlands to monitor groundwater conditions in response to mining. Should data reveal that adverse impacts have occurred, an individual Modules 14 including a mitigation plan will be developed to restore the resources.

b) Describe the probable hydrologic consequences of the proposed mining activities on the hydrologic system of the permit area and adjacent area both during the stages of and after the conclusion of operations. Describe the impact, during and after mining, on existing quantity and quality of the surface and groundwater as described in Sections 8.3 and 8.4.

Mining will have little effect on the hydrologic system of the hard rock portion of the permit area as very little groundwater will be entering the pit area. Surface water entering disturbed areas will not negatively react with exposed bedrock as the rock formations present are not known to contain acidic conditions where natural minerals would form toxic conditions, but runoff will likely have periodic opportunity to pick up suspended solids. This water will be captured and conveyed to appropriate erosion and sedimentation facilities prior to being discharged from the site. Discharged water will meet the effluent standards identified in the conditions of the permit.

Mining of the sand and gravel will primarily occur below the surface of the water table as this is where the majority of the reserves are located. Surface disturbances associated with this phase of mining will be directed to an internal pit which will transform into an open impoundment. No water will discharge overland from this phase of mining. Groundwater flow through this portion of the mining area has a very shallow gradient traveling from NNW to SSE through the Chemung River valley. This material is chemically inert from the weathering and transportation process that were involved with the creation and placement of this deposit. An increase in turbidity will likely occur within the open water impoundment as agitation of the fine silt and clay sized particles will be present during excavation and processing of the raw sediments. These settleable solids will drop out of suspension within the open water impoundment, much the same as they would in a sediment pond. Any sediment not dropping out of suspension will be removed from groundwater transport as the particle reaches the downstream undisturbed sand and gravel where it will be filtered out.

The proposed mining will not create hydrologic consequences greater than those historic activities which have been occurring on this and adjacent lands (ie agricultural, commercial, industrial and residential activities).

c) Is pumping of groundwater planned within the life of the operation. ☐ Yes ☒ No.

If yes, indicate the estimated gallons/day to be pumped for each stage of mining. Submit a science-based estimate of the zone of influence for each proposed stage of the operation. This may require a groundwater model to be developed using existing aquifer data as well as collecting new data, tracer tests or fracture trace analysis. Provide all documentation for the modeling. Use of groundwater modeling may be required to support the discussion of potential effects of groundwater withdrawal if the withdrawal has the potential to adversely impact water supplies, wetlands and other water resources and their affiliated uses, or if the withdrawal has the potential to cause or exacerbate sinkhole formation (See section 8.7). (Key groundwater elevations to cross-sections in 7.1 (c).)

N/A

NOTE: Operations in karst geology areas may be required to complete the *Karst Permitting Supplement* **(**5600-PM-BMP0456**)** in addition to supplying this information.

Certified Mail: 9589 0710 5270 0872 9046 32
January 9, 2024

Arthur Forest Jr
1410 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-100 (1410 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for your property. If you have any questions, contact me at your convenience to discuss. I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

U:\BishopBros\Minard\Correspond\240109-Minard-WaterRequest-Letters.docx

Certified Mail: 9589 0710 5270 0872 9046 56
January 9, 2024

Marvin F Miller
1701 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-106 & 9-20-108 (1701 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9046 63
January 9, 2024

David Martz
48 Markham Road
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-107 (48 Markham Road)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9046 70
January 9, 2024

Gregg Ward
1517 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-105; 9-20-107-1; & 9-20-107-3 (1517 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9046 87
January 9, 2024

Erin Wheeler
1449 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-107-2 (1449 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

U:\BishopBros\Minard\Correspond\240109-Minard-WaterRequest-Letters.docx

Certified Mail: 9589 0710 5270 0872 9046 94
January 9, 2024

Joseph Dabroski
1739 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-109 (1739 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9047 00
January 9, 2024

William Sutton
5195 Mile Lane Road
Sayre PA 18840

&

Sutton Rentals LLC
5195 Mile Lane Road
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-111 (1771 Meadowlark Drive, 11 Precision Drive, & 49 Precision Drive)
9-20-111-5 (175 Markham Road)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9047 17
January 9, 2024

Edward A Carolin
47 Neason Road
Chemung NY 14825

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-111-1 (133 Markham Road)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9047 24
January 9, 2024

Gerald L Townsand
14 Precision Lane
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-111-2 (14 Precision Lane)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9047 31
January 9, 2024

Ethan C Elsbree
101 Markham Road
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-111-4 (101 Markham Road)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9047 48
January 9, 2024

Eileen Sparduti
972 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-94 (972 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9010 13
January 9, 2024

Daniel Blackman
1072 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-96 (1072 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9010 20
January 9, 2024

Roberta Blanchard
1334 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-97 (1334 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9010 37
January 9, 2024

Robert Blow
1339 Meadowlark Drive
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-98 (21 Markham Road & 1339 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

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Certified Mail: 9589 0710 5270 0872 9010 44
January 9, 2024

Douglas Elsbree
65 Markham Road
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-99 (65 Markham Road)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

U:\BishopBros\Minard\Correspond\240109-Minard-WaterRequest-Letters.docx

First Class Mail & Certified Mail: 9589 0710 5270 0872 9046 25
January 19, 2024

Bud Rosh & Adrianna Vossbrinck
4608 Mile Lane Road
Sayre PA 18840

Re: Water Quality Monitoring
Surface Mine Permit Application
Athens Township, Bradford County, Pennsylvania

Dear Sir/Madam:

Your tax parcel located in Athens Township, Bradford County is within 1000 feet of a proposed surface mine application by Bishop Brothers Construction Company, Inc. to the Pennsylvania Department of Environmental Protection. As part of the application process, Tract Engineering, PLLC will be collecting and analyzing water supplies within 1000 feet of the proposed surface mine permit boundary.

Tax Parcel:
9-20-101 (1460 & 1478 Meadowlark Drive)

Please complete and return the attached Residential Water Supply Inventory for each property. If you have any questions, contact me at your convenience to discuss. If possible, I would like to schedule a time to meet at your property to obtain a water sample for analysis.

Should you have any questions, please contact me anytime at (814) 221-0118.

Tract Engineering, PLLC

/s Timothy S. Gourley

Timothy S. Gourley, P.E.

encl. Residential Water Supply Inventory
Stamped return envelope

U:\BishopBros\Minard\Correspond\240119-Minard-WaterRequest-Letters.docx

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Arthur Forest Jr
[illegible] Drive

9590 9402 6856 1104 2206 47

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9046 32

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Recei

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Address

B. Received by (Printed Name) [illegible] C. Date of Deliv 1-13-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation
☐ Signature Confirmation Restricted Delivery
Restricted Delivery (over $500)

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bud Rosh & Adrianna Vossbrinck
4608 Mile Lane Rd
Sayre PA 18840

9590 9402 6856 1104 2206 23

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9046 25

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Address

B. Received by (Printed Name) Bud Rosh C. Date of Deliv 1-22-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation
☐ Signature Confirmation Restricted Delivery
Restricted Delivery

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Marvin F Miller
1701 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2202 96

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9046 56

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Address

B. Received by (Printed Name) [illegible] C. Date of Delive 1-

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
Restricted Delivery

9589 0710 5270 0872 9046 63

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$3.55
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.66
Total Postage and Fees	$8.56

0068 18

Postmark Here

STATE COLLEGE PO JAN - 9 2024

01/09/2024

Sent To: David Martz
Street and: 48 Markham Road
City, State: Sayre PA 18840

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

David Martz
48 Markham Road
Sayre PA 18840

9590 9402 6856 1104 2203 02

2. Article Number (Transfer from service label)

9589 0710 5270 0872 9046 63

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) PJ Martz

C. Date of Delivery 1-13-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

9589 0710 5270 0872 9046 70

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$3.55
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.66
Total Postage and Fees	$8.56

0068 18

Postmark Here

STATE COLLEGE PO JAN - 9 2024

01/09/2024

Sent To: Gregg Ward
Street and: 1517 Meadowlark Drive
City, State: Sayre PA 18840

PS Form 3800, January 2023 PSN 7530-02-000-9047

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

...ard
...eadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2203 19

2. Article Number (Transfer from service label)

9589 0710 5270 0872 9046 70

Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) Linda Ward

C. Date of Delivery 1-13-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

9589 0710 5270 0872 9046 87

U.S. Postal Service™ CERTIFIED MAIL® RECEIPT
Domestic Mail Only
For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$3.55
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.66
Total Postage and Fees	$8.56

0068 18

Postmark Here

STATE COLLEGE PO JAN - 9 2024

01/09/2024

Sent To: Erin Wheeler
Street and: 1449 Meadowlark Drive
City, State: Sayre PA 18840

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Erin Wheeler
1449 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2203 26

2. Article Number (Transfer from service label)

9589 0710 5270 0872 9046 87

Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) Jason R. Wheeler

C. Date of Delivery 1-13-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

9589 0710 5270 0872 9046 94

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$7.55
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.66
Total Postage and Fees	$8.56

Sent To: Joseph Dabroski
Street and Apt. No.: 1739 Meadowlark Drive
City, State, ZIP+4: Sayre PA 18840

Postmark Here
JAN – 9 2024
01/09/2024

0068 18

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Joseph Dabroski
1739 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2203 33

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9046 94

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Marion Dabroski ☐ Agent ☐ Addres

B. Received by (Printed Name): Marion Dabroski
C. Date of Deliv: 1/17/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restr Delivery
☐ Signature Confirmatio
☐ Signature Confirmatio Restricted Delivery
Restricted Delivery (over $500)

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

9589 0710 5270 0872 9047 00

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$7.55
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.66
Total Postage and Fees	$8.56

Sent To: William Sutton
Street and Apt. No.: 5195 Mile Lane Road
City, State, ZIP+4: Sayre PA 18840

Postmark Here
JAN – 9 2024
01/09/2024

0068 18

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

William Sutton
5195 Mile Lane Road
Sayre PA 18840

9590 9402 6856 1104 2203 40

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9047 00

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Address

B. Received by (Printed Name): Sutton
C. Date of Delive: 1-12-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restri Delivery
☐ Signature Confirmatio
☐ Signature Confirmatio Restricted Delivery
Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

9589 0710 5270 0872 9047 24

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$7.55
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$0.66
Total Postage and Fees	$8.56

Sent To: Gerald L Townsand
Street and Apt. No.: 14 Precision Lane
City, State, ZIP+4: Sayre PA 18840

Postmark Here
JAN – 9 2024
01/09/2024

0068 18

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Gerald L Townsand
14 Precision Lane
Sayre PA 18840

9590 9402 6856 1104 2203 64

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9047 24

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Gerald Townsand ☐ Agent ☒ Address

B. Received by (Printed Name): Gerald Townsand
C. Date of Delive: 1-13-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restri Delivery
☐ Signature Confirmatio
☐ Signature Confirmatio Restricted Delivery
Restricted Delivery (over $500)

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

9589 0710 5270 0872 9047 31

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee $4.35
Extra Services & Fees (check box, add fee as appropriate) $3.55
☐ Return Receipt (hardcopy) $0.00
☐ Return Receipt (electronic) $0.00
☐ Certified Mail Restricted Delivery $0.00
☐ Adult Signature Required $0.00
☐ Adult Signature Restricted Delivery $0.00
Postage $0.66
Total Postage and Fees $8.56

Sent To: Ethan C Elsbree
Street and Apt. No., or PO Box No.: 101 Markham Road
City, State, ZIP+4®: Sayre PA 18840

Postmark Here
JAN – 9 2024
STATE COLLEGE PA 16801

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ethan C Elsbree
101 Markham Road
Sayre PA 18840

9590 9402 6856 1104 2203 71

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9047 31

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name): Ethan Elsbree
C. Date of Delivery: 1-13-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Restricted Delivery (over $500)

Domestic Return Receipt

9589 0710 5270 0872 9047 48

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee $4.35
Extra Services & Fees (check box, add fee as appropriate) $3.55
☐ Return Receipt (hardcopy) $0.00
☐ Return Receipt (electronic) $0.00
☐ Certified Mail Restricted Delivery $0.00
☐ Adult Signature Required $0.00
☐ Adult Signature Restricted Delivery $0.00
Postage $0.66
Total Postage and Fees $8.56

Sent To: Eileen Sparduti
Street and Apt. No., or PO Box No.: 972 Meadowlark Drive
City, State, ZIP+4®: Sayre PA 18840

Postmark Here
JAN – 9 2024
STATE COLLEGE PA 16801

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Eileen Sparduti
972 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2203 88

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9047 48

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Megan Cuda ☐ Agent ☐ Addressee

B. Received by (Printed Name): Megan Cuda
C. Date of Delivery: 1-20-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Restricted Delivery (over $500)

Domestic Return Receipt

9589 0710 5270 0872 9010 13

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee $4.35
Extra Services & Fees (check box, add fee as appropriate) $3.55
☐ Return Receipt (hardcopy) $0.00
☐ Return Receipt (electronic) $0.00
☐ Certified Mail Restricted Delivery $0.00
☐ Adult Signature Required $0.00
☐ Adult Signature Restricted Delivery $0.00
Postage $0.66
Total Postage and Fees $8.56

Sent To: Daniel Blackman
Street and Apt. No., or PO Box No.: 1072 Meadowlark Drive
City, State, ZIP+4®: Sayre PA 18840

Postmark Here
JAN – 9 2024
STATE COLLEGE PA 16801

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Daniel Blackman
1072 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2204 25

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9010 13

PS Form 3811, July 2020 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Daniel Blackman ☐ Agent ☒ Addressee

B. Received by (Printed Name): Daniel Blackman
C. Date of Delivery: 1-13-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Restricted Delivery

Domestic Return Receipt

9589 0710 5270 0872 9010 20

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee $4.35
Extra Services & Fees (check box, add fee as appropriate) $3.55
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $0.00
Postage $0.66
Total Postage and Fees $8.56

Sent To
Street and Apt. No.,
City, State, ZIP+4®

Roberta Blanchard
1334 Meadowlark Drive
Sayre PA 18840

STATE COLLEGE PO 16868
01/09/2024
USPS
Postmark Here
JAN – 9 2024

PS Form 3800, January 2023 PSN 7530-02-000-0047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Roberta Blanchard
1334 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2204 18

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9010 20

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Roberta E. Blanchard ☐ Agent ☒ Addres

B. Received by (Printed Name) ROBERTA S. BLANCHARD C. Date of Deliv 1-13-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restr Delivery
☐ Signature Confirmatic
☐ Signature Confirmatic Restricted Delivery
Restricted Delivery
(over $500)

9589 0710 5270 0872 9010 37

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee $4.35
Extra Services & Fees (check box, add fee as appropriate) $3.55
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $0.00
Postage $0.66
Total Postage and Fees $8.56

Sent To
Street ar
City, Sta

Robert Blow
1339 Meadowlark Drive
Sayre PA 18840

STATE COLLEGE PO 16868
01/09/2024
USPS
Postmark Here
JAN – 9 2024

PS Form 3800, January 2023 PSN 7530-02-000-0047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert Blow
1339 Meadowlark Drive
Sayre PA 18840

9590 9402 6856 1104 2204 01

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9010 37

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receip

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☒ Addresse

B. Received by (Printed Name) C. Date of Deliver 1-13-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restrict Delivery
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery
Restricted Delivery
(over $500)

9589 0710 5270 0872 9010 44

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Sayre, PA 18840

OFFICIAL USE

Certified Mail Fee $4.35
Extra Services & Fees (check box, add fee as appropriate) $3.55
Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $0.00
Postage $0.66
Total Postage and Fees $8.56

Sent To
Street
City, S

Douglas Elsbree
65 Markham Road
Sayre PA 18840

STATE COLLEGE PO 16868
01/09/2024
USPS
Postmark Here
JAN – 9 2024

PS Form 3800, January 2023 PSN 7530-02-000-0047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Douglas Elsbree
65 Markham Road
Sayre PA 18840

9590 9402 6856 1104 2203 95

2. Article Number (Transfer from service label)
9589 0710 5270 0872 9010 44

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Address

B. Received by (Printed Name) C. Date of Deliv

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☒ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restri Delivery
☐ Signature Confirmatio
☐ Signature Confirmatio Restricted Delivery
Restricted Delivery

9 0710 5270 0872 9047 17

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Chemung, NY 14825

OFFICIAL USE

Certified Mail Fee	$4.35
Extra Services & Fees (check box, add fee as appropriate)	$[illegible]
☐ Return Receipt (hardcopy)	$0.00
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$0.66
Total Postage and Fees	$8.56

Sent To: Edward A Carolin

Postmark Here: STATE COLLEGE PO 16801 JAN - 9 2024 0068 01/09/2024

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Edward A Carolin
47 Neason Road
Chemung, NY 14825

9590 9402 6856 1104 2203 57

2. Article Number (Transfer from service label)

9589 0710 5270 0872 9047 17

COMPLETE THIS SECTION ON DELIVERY

A. Signature X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery 1-11-24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Receipt

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 1A
Latitude: 41 58 23.3
Longitude: 76 33 02.6
Surface Elevation: 770

Description of Sample Point*: Jennette Minard well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
03/05/20	---	---	8.74	8.28	<5	349	14.1	192.69	-190.55	0.37	0.09	---	30.4	212	tg, GC 661538
04/10/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
05/22/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
06/23/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
07/29/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	PROBE	753.4	8.26	8.25	<5	353	22.3	183.32	-170.29	2.19	0.09	---	<5	192	tg, GC 668754
09/30/20	PROBE	752.6	7.64	8.28	<5	345	20.2	166.59	-150.29	0.22	0.08	---	<5	164	tg, GC 668758
10/26/20	PROBE	752.7	7.86	8.05	<5	346	14.9	164.67	-160.79	<0.10	<0.05	---	<5	178	tg, GC 671159
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative ***

Date

*** Written notification of delegation of signatory authority must be submitted to the Department if signatory is other than company official. Signature not necessary if this report is submitted as part of the permit application.

* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 1B
Latitude: 41 58 30.2
Longitude: 76 33 19.6
Surface Elevation: 770

Description of Sample Point*: wetland - north central of SMP

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	VISUAL	0	---	6.39	13	52	---	12.04	-1.01	0.18	0.05	---	15.4	26	tg, GC 660630
03/05/20	VISUAL	0	7.87	7.19	8	190	11.1	77.85	-60.10	1.03	<0.05	---	12.5	128	tg, GC 661534
04/10/20	VISUAL	0	7.98	7.25	<5	193	7.3	76.96	-47.67	0.23	<0.05	---	9.5	114	tg, GC 663240
05/22/20	VISUAL	0	---	7.08	8	170	---	76.16	-59.49	1.22	<0.05	---	10.2	100	tg, GC 665040
06/23/20	VISUAL	DRY	---	---	---	---	---	---	---	---	---	---	---	---	tg
07/29/20	VISUAL	DRY	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	VISUAL	DRY	---	---	---	---	---	---	---	---	---	---	---	---	tg
09/30/20	VISUAL	DRY	---	---	---	---	---	---	---	---	---	---	---	---	tg
10/26/20	VISUAL	DRY	---	---	---	---	---	---	---	---	---	---	---	---	tg
01/31/24	*pending*	*results*													

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 65A
Latitude: ~41 58 33
Longitude: ~76 34 20
Surface Elevation: ~1120

Description of Sample Point*: Onofre well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
08/17/23	no	probe	7.50	7.03	<5	261	21.5	87.70	-82.51	<0.10	<0.05	<0.10	15.1	162	tg, GC 711609

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 66A
Latitude: ~41 58 32
Longitude: ~76 34 30
Surface Elevation: ~1148

Description of Sample Point*: Rose well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
07/31/23	no	probe	8.20	7.60	<5	347	20.5	153.25	-146.02	<0.10	<0.05	<0.10	13.6	202	tg, GC 710965

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 94A
Latitude: ~41 58 39
Longitude: ~76 33 48
Surface Elevation: ~790

Description of Sample Point*: Sparduti well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
07/31/23	no	probe	9.00	7.64	<5	286	17.2	106.38	-99.56	0.24	0.08	<0.10	10.0	154	tg, GC 710966

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 96A
Latitude: 41 58 39.8
Longitude: 76 33 40.2
Surface Elevation: ~782

Description of Sample Point*: Blackman well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 99A
Latitude: 41 58 43.8
Longitude: 76 33 19.2
Surface Elevation: ~777

Description of Sample Point*: Elsbree well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 100A
Latitude: ~41 58 40
Longitude: ~76 33 15
Surface Elevation: ~776

Description of Sample Point*: Forest well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 101A
Latitude: ~41 58 40
Longitude: ~76 33 11
Surface Elevation: ~774

Description of Sample Point*: Rosh well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/19/24	*pending*	*results*													

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Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 103A
Latitude: 41 58 39.6
Longitude: 76 33 05.8
Surface Elevation: 766

Description of Sample Point*: JDS well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
07/14/21	PROBE	755.8	7.83	8.12	<5	261	20.5	127.89	-121.20	0.29	0.06	---	<5	158	tg, GC 680230
08/31/21	PROBE	755.6	7.84	8.06	<5	263	21.0	127.33	-120.40	0.58	0.09	---	<5	156	tg, GC 682111
09/23/21	PROBE	754.9	7.91	8.10	<5	260	19.3	126.26	-91.05	0.21	<0.05	---	<5	146	tg, GC 683194
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

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Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 104-1A
Latitude: 41 58 38.8
Longitude: 76 33 26.3
Surface Elevation: 782

Description of Sample Point*: Richard Minard well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
03/05/20	PROBE	762.0	8.85	8.24	<5	287	14.2	148.73	-99.29	0.42	0.07	---	14.2	182	tg, GC 661539
04/10/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
05/22/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
06/23/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
07/29/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	PROBE	757.0	8.32	8.28	7	295	19.0	143.38	-111.10	0.28	0.08	---	<5	150	tg, GC 668755
09/30/20	PROBE	756.1	7.74	8.31	9	287	16.5	140.41	-136.75	0.31	0.07	---	5.1	152	tg, GC 669763
10/26/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 107-1A
Latitude: 41 58 42.2
Longitude: 76 33 09.3
Surface Elevation: ~773

Description of Sample Point*: Ward well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 107-2A
Latitude: 41 58 42.4
Longitude: 76 33 17.3
Surface Elevation: ~776

Description of Sample Point*: Wheeler well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/19/24	*pending*	*results*													

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Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 108A
Latitude: ~41 58 45
Longitude: ~76 33 05
Surface Elevation: ~768

Description of Sample Point*: Miller well

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
08/30/23	no	probe	8.60	8.06	<5	240	19.3	117.99	-100.35	<0.10	<0.05	<0.10	<5	172	tg, GC 713068

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S1A
Latitude: 41 57 52.7
Longitude: 76 32 25.4
Surface Elevation: 745

Description of Sample Point*:
Tutelow Creek - downstream at confluence with Chemung River

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	10 CFS	---	7.62	14	100	---	26.09	-20.50	0.34	<0.05	---	9.1	50	tg, GC 660626
03/05/20	VISUAL	0	8.62	7.90	<5	111	8.3	22.77	-11.46	0.22	<0.05	---	12.3	84	tg, GC 661529
04/10/20	VISUAL	0	8.89	7.77	<5	119	7.1	33.96	-26.79	<0.10	<0.05	---	9.3	70	tg, GC 663237
05/22/20	EST	4 CFS	---	7.57	<5	127	---	44.03	-35.66	0.19	<0.05	---	8.9	90	tg, GC 665036
06/23/20	EST	<1	7.62	7.80	7	430	24.7	219.19	-197.99	0.59	0.29	---	18.4	256	tg, GC 666304
07/29/20	EST	<1	7.91	7.92	35	428	28.5	219.65	-212.56	1.68	0.67	---	11.8	228	tg, GC 667923
08/25/20	EST	<1	7.94	7.91	25	399	26.9	191.10	-181.60	1.48	0.70	---	10.5	214	tg, GC 668752
09/30/20	EST	<<1	6.95	7.50	22	353	18.7	165.48	-100.60	4.51	1.02	---	18.8	172	tg, GC 669759
10/26/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S1B
Latitude: 41 58 04.2
Longitude: 76 32 50.6
Surface Elevation: 756

Description of Sample Point*: Tutelow Creek at existing crossing

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	10 CFS	---	7.63	14	96	---	61.27	-56.08	1.03	<0.05	---	11.5	60	tg, GC 660627
03/05/20	EST	7.5 CFS	8.47	7.52	<5	89	6.3	22.89	-15.48	0.14	<0.05	---	12.0	72	tg, GC 661532
04/10/20	EST	2.5 CFS	8.62	7.72	<5	107	6.4	30.37	-23.84	<0.10	<0.05	---	8.6	62	tg, GC 663239
05/22/20	EST	4 CFS	---	7.56	<5	97	---	29.47	-23.25	0.19	<0.05	---	8.1	68	tg, GC 665038
06/23/20	EST	<1	7.34	7.44	68	194	22.7	95.31	-85.70	0.90	0.5	---	8.2	138	tg, GC 666306
07/29/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
09/30/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
10/26/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S1C
Latitude: 41 58 41.7
Longitude: 76 33 47.1
Surface Elevation: 784

Description of Sample Point*: Tutelow Creek at T-303 crossing

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	10 CFS	---	7.57	13	104	--	23.99	-19.10	0.45	<0.05	---	10.8	58	tg, GC 660632
03/05/20	EST	7.5 CFS	8.42	7.54	<5	98	6.2	25.07	-19.50	0.14	<0.05	---	8.8	74	tg, GC 661537
04/10/20	EST	2.5 CFS	8.66	7.45	8	120	7.3	35.04	-21.08	<0.10	<0.05	---	9.3	64	tg, GC 663242
05/22/20	EST	4 CFS	---	6.93	<5	120	---	40.41	-28.37	<0.10	<0.05	---	<5	102	tg, GC 665042
06/23/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
07/29/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
09/30/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
10/26/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S2A
Latitude: 41 58 05.0
Longitude: 76 32 56.4
Surface Elevation: 776

Description of Sample Point*: UNT 1 to Tutelow Creek

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	50	---	6.89	16	52	---	10.09	3.22	0.21	<0.05	---	12.5	26	tg, GC 660628
03/05/20	EST	15	8.60	7.33	<5	51	6.4	10.21	-6.63	0.19	<0.05	---	12.3	60	tg, GC 661531
04/10/20	EST	40	8.45	7.44	8	58	5.2	13.31	-9.85	0.19	<0.05	---	9.2	46	tg, GC 663238
05/22/20	EST	30	---	7.47	14	60	---	14.81	-10.84	0.49	<0.05	---	12.3	42	tg, GC 665037
06/23/20	EST	<1	7.52	7.83	79	86	20.6	26.54	-19.50	0.66	<0.05	---	13.8	58	tg, GC 666305
07/29/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
09/30/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
10/26/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S3A
Latitude: 41 58 12.8
Longitude: 76 33 10.1
Surface Elevation: 764

Description of Sample Point*: UNT 2 to Tutelow Creek

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	3	---	7.30	9	55	---	11.04	-4.82	0.12	<0.05	---	12.9	39	tg, GC 660629
03/05/20	EST	1	8.51	7.29	<5	57	5.6	11.99	-8.04	<0.10	<0.05	---	13.4	56	tg, GC 661533
04/10/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
05/22/20	EST	3	---	7.43	<5	67	---	15.88	-8.87	0.23	<0.05	---	11.8	47	tg, GC 665039
06/23/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
07/29/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
08/25/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
09/30/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg
10/26/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg

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* Water Monitoring Report Cover Sheet Form 5600-FM-MR0113 may be used for multiple monitoring point sample submittals.

** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☒ BACKGROUND or ☐ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S4A
Latitude: 41 58 23.1
Longitude: 76 33 30.2
Surface Elevation: 778

Description of Sample Point*: POND A outfall
(S4A identification was made in error at the start of sampling. The identification has not been changed to maintain consistency tracking the samlpe point data.)

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	15	---	6.88	7	48	---	9.06	-6.63	0.17	<0.05	---	10.1	22	tg, GC 660631
03/05/20	EST	2	8.65	6.91	<5	51	4.7	9.55	-5.43	0.15	<0.05	---	11.5	36	tg, GC 661535
04/10/20	VISUAL	0	10.22	8.79	6	53	8.1	12.29	-5.32	0.17	<0.05	---	9.7	34	tg, GC 663241
05/22/20	VISUAL	0	---	7.45	<5	54	---	14.03	-11.62	0.37	0.08	---	8.8	38	tg, GC 665041
06/23/20	VISUAL	0	9.88	7.69	17	65	27.2	27.79	-18.91	0.75	0.78	---	11.0	42	tg, GC 666307
07/29/20	VISUAL	0	8.84	7.44	14	74	30.2	27.64	-14.18	1.27	0.21	---	10.9	53	tg, GC 667925
08/25/20	VISUAL	0	9.14	7.49	21	80	28.7	30.87	-23.84	0.49	0.08	---	7.5	36	tg, GC 668753
09/30/20	VISUAL	0	8.05	7.49	16	83	18.6	31.35	-16.36	1.09	0.37	---	13.5	60	tg, GC 669761
10/26/20	VISUAL	0	---	---	---	---	---	---	---	---	---	---	---	---	tg

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Date

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S5A
Latitude: 41 57 53.3
Longitude: 76 32 24.5
Surface Elevation: 744

Description of Sample Point*:
Chemung River downstream at confluence with Tutelow Creek

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	4760 CFS	---	7.93	58	262	---	59.31	-52.26	0.40	<0.05	---	17.3	126	tg, GC 660625
03/05/20	EST	9340 CFS	8.43	7.66	86	165	5.2	39.05	-32.76	3.05	0.12	---	16.6	132	tg, GC 661530
04/10/20	EST	3190 CFS	9.00	8.05	8	300	11.8	67.27	-56.93	0.65	<0.05	---	27.6	174	tg, GC 663236
05/22/20	EST	2550 CFS	---	7.77	<5	344	---	78.71	-68.95	0.55	<0.05	---	19.1	118	tg, GC 665035
06/23/20	EST	573 CFS	7.90	7.98	<5	516	24.3	153.08	-144.40	0.14	<0.05	---	18.6	392	tg, GC 666303
07/29/20	EST	276 CFS	8.12	8.17	6	657	28.0	163.82	-148.74	0.17	<0.05	---	20.2	334	tg, GC 667924
08/25/20	EST	205 CFS	7.99	8.13	7	728	26.8	194.06	-190.49	0.12	<0.05	---	16.9	360	tg, GC 668751
09/30/20	EST	263 CFS	7.53	8.11	8	748	17.8	189.03	-162.00	0.12	<0.05	---	23.9	376	tg, GC 669760
10/26/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: S5B
Latitude: 41 59 08.1
Longitude: 76 33 11.7
Surface Elevation: 783

Description of Sample Point*: Chemung River upstream at park at Mile Lane Road

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler
02/13/20	EST	4760 CFS	---	7.87	16	262	---	60.46	-53.67	0.74	0.05	---	17.5	134	tg, GC 660633
03/05/20	EST	9340 CFS	8.40	7.65	110	167	9.2	41.08	-35.78	2.71	0.10	---	16.6	114	tg, GC 661536
04/10/20	EST	3190 CFS	8.24	7.98	8	305	7.6	68.82	-59.49	0.32	0.05	---	26.6	162	tg, GC 663243
05/22/20	EST	2550 CFS	---	7.81	7	342	---	86.30	-74.86	0.65	0.06	---	24.3	224	tg, GC 665043
06/23/20	EST	573 CFS	8.63	8.41	<5	460	26.2	121.98	-112.29	0.17	<0.05	---	19.3	250	tg, GC 666308
07/29/20	EST	276 CFS	8.49	8.46	<5	484	28.1	111.65	-103.43	0.23	<0.05	---	28.3	218	tg, GC 667922
08/25/20	EST	205 CFS	8.73	8.61	<5	539	28.5	116.79	-102.01	0.14	<0.05	---	23.6	252	tg, GC 668750
09/30/20	EST	263 CFS	7.96	8.54	7	544	19.5	118.13	-84.64	0.10	<0.10	---	32.1	296	tg, GC 669762
10/26/20	NO	SAMPLE	---	---	---	---	---	---	---	---	---	---	---	---	tg
01/31/24	*pending*	*results*													
02/19/24	*pending*	*results*													

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Signature of Permittee or Responsible Official or Authorized Representative ***

Date

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 001
Latitude: 41 58 01.1
Longitude: 76 32 42.8
Surface Elevation: 750

Description of Sample Point*:
NPDES discharge point 001

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 8.1(A)
☐ BACKGROUND or ☒ MONITORING POINT*
(check appropriate box)

Operator: Bishop Brothers Const. Co. Inc.
Operation Name: Minard
Permit No: 08230301
Township: Athens
County: Bradford

Monitoring Point ID: 002
Latitude: 41 58 04.1
Longitude: 76 32 51.1
Surface Elevation: 755

Description of Sample Point*: NPDES discharge point 002

Instructions: Use a separate sheet for each sample point and list results consecutively by date.

Date Sampled	Method of Flow Measure-ment	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Suspended Solids mg/l	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Aluminum mg/l	Sulfate mg/l	Total Dissolved Solids mg/l	Laboratory and Name of Sampler

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** Description should include type of sample point, relation to mine site, treatment and other comments (such as odor, color, etc.)

Module 10: Operational Information
[§§77.452/77.456/77.563/77.564]

10.1 Equipment and Operation Plan

For each phase of mining, identify the type and method of mining; engineering techniques; major equipment to be used; starting point; and the anticipated sequence in which the phases are to be mined.

CONSOLIDATED MATERIAL (HARD ROCK):
Mining at the site will be in three (3) phases with multiple bond increments.

Mining will be conducted by modified block cut. The mineral will be extracted in blocks in accordance with highwall heights and bench widths; 50' maximum height and a 25' minimum working bench. Once mining progresses to the mining limits, a 71' minimum final bench with a 50' maximum highwall is required to achieve site reclamation. Bench width can vary based upon final highwall heights provided a reclamation slope of 35 degrees can be achieved. Grading of stockpiled material along the perimeter of the mining areas and the bonded stockpile material will be utilized to help achieve final reclamation slopes. At the completion of this grading, soils will be replaced, followed by seeding and mulching.

Mining will be completed at multiple benches as mining progresses. The benches will be large enough to facilitate the extraction and processing of materials if needed. Multiple benches will provide the operator flexibilty should mineral quality vary.

UNCONSOLIDATED MATERIAL (SAND & GRAVEL):
Mining at the site will be completed in multiple phases by general excavation above and below the water table. No dewatering of the mining area is proposed. Mining will be conducted by general area removal. The mineral will be extracted in lifts in accordance with highwall height (25' typ), bench width (25' typ), and slope (1.5:1 typ) recommendations.

The following benching sequences will be used during mining: maximum heights of 25' for highwalls and 25' minimum width for benching will be used. The setback in unconsolidated material, at a minimum, must be equal to the total highwall height for the setback area. Exhibit 7/10 details the highwall heights and setback requiremenets during active mining operations and the final reclamation slope at the completion of mining. All mining along the mining limits will be conducted in a manner to reduce the need for additional material handling for final reclamation. In areas where final mining slopes are found to exceed 35°, excess material will be utilized to help achieve final reclamation slopes elsewhere in the permit area. At the completion of this grading, soils will be replaced followed by seeding and mulching. A safety bench will be provided at final water surface elevation of the impoundment; refer to detail on Exhibit 10.2. The configuration of the safety bench will account for potential water level fluctuations.

A majority of the sand and gravel mineral extraction area is within the 100 year flood plain of the Chemung River and Tutelow Creek. The topography of the site and proposed mining plan will not prevent floodwaters from entering the mining operation. The proposed perimeter berms shown on the exhibit maps are utilized for material storage and to restrict access to the site. The perimeter berms are not intended to prevent floodwaters from entering the site. No perimeter berms shall be utilized in the floodway as shown on Exhibit 9. Rather than a berm, a moat will be dug to identify the perimeter of the operation. In the event of a weather forecast for significant precipitation or flood warnings, the operator will relocate equipment to high ground to minimize floodwater impacts to the site. Potential impacts of the flooding will be operation downtime and cleanup of sediment and debris from floodwaters.

If a flood occurs, floodwaters will inundate the site and then recede slowly as the adjacent waterways return to normal flow conditions. Floodwater in the pit will limit mining operations; the operator will proceed with caution as conditions return to normal. Floodwaters in the support area and processing area will recede as the adjacent waterways return to normal flow conditions. Floodwaters in Basin 1 will exit via the emergency spillway and eventually the principal spillway as the adjacent waterways return to normal flow conditions.

No structures or material stockpiles shall be placed in the floodway. Operations may occur in the floodway as shown on Exhibit 9 including support area, E&S controls, and mineral extraction.

BONDING:
The operation will be bonded prior to mining. The topsoil will be stripped ahead of mining and stored along the perimeter of the mining area. These soil storage areas will be in place to ensure that the site can be revegetated for the proposed post mining land uses. The topsoil berms and overburden berms will also act as a containment system to keep any sediment laden runoff from leaving the site. Once vegetation has become established on the soil storage

berms, the operation will be virtually self-contained so that under normal climatic conditions all runoff from the site will be directed to sedimentation basins or pit sumps.

The operator may vary the phase sequence and bonded area based upon subsurface conditions encountered during mining and market demand. The characteristics of the mined material will guide development of each phase of mining.

Hard Rock Phase 1 (Initial Bond Increment):

The initial bond increment will develop the mine site infrastructure and Hard Rock Phase 1.

Support Areas:

1. **Install support area sumps at the perimeter of the bonded area as indicated on Exhibit 9.**
2. **Install E&S controls and temporary crossing of Tutelow Creek to begin construction of the Tutelow Creek Bridge. Refer to Module 14 and Exhibit 14 for additional details.**
3. **Install E&S controls for the UNT 1 Tutelow Creek pipe crossing. Refer to Module 14 and Exhibit 14 for additional details.**
4. **Install E&S controls downslope of Basin 2.**
5. **Clear and grub access road between support area and Hard Rock mining area. Trees shall be harvested and stumps and brush shall be chipped or stockpiled in the bonded overburden pile area.**
6. **Install office and storage trailers. Scales may be installed at any time during this sequence.**
7. **Strip topsoil and stockpile.**
8. **Begin construction of Tutelow Creek Bridge. Refer to Module 14 and Exhibit 14 for additional details.**
9. **Begin construction of Basin 2. Utilize excavated material from Basin 2 area to construct access road base from Hard Rock mining area to the support area. Continue constructing the access road to the north entrance utilizing suitable material excavated from the Hard Rock mining area. Install Basin 2 emergency spillway, riprap protection, outlet pipe and seed and mulch all disturbed areas.**
10. **Once bridge complete, backfill abutments and finalize access road grade. Install perimeter E&S controls and Haul Road E&S Sediment Trap (see detail on Exhibit 10.1). Remove temporary crossing and revegetate disturbed areas.**
11. **Continue with the installation of the access road from the bridge north to Meadowlark Drive. Install Haul Road E&S Sediment Traps. At the northern end of the access road at the intersection of the paved drivwey, install a rock construction entrance. Refer to detail on Exhibit 10.2.**
12. **Complete all requirements of the Athens Township approval (subject to change based upon receipt of final Township approval):**
    a. **Evergreen screening along homes on Meadowlark Drive**
    b. **Place conspicuous signage at regular intervals, and fencing where appropriate along the property line adjacent to Round Top Park, sufficient to ensure that park visitors are aware of the mining activity.**
13. **Stabilize support area for processing and stockpiling material.**

Hard Rock Phase 1 Mining Area:

1. **Clear and grub area. Trees shall be harvested and stumps and brush shall be chipped or stockpiled in the bonded overburden pile area.**
2. **Install perimeter controls (super silt fence) as noted on the Exhibit maps.**
3. **Strip and stockpile topsoil and overburden. Topsoil shall be utilzied for perimter containment berms around the mining operation. Due to the site topography, berm size will be limited by site conditions. Efforts will be made to construct a berm to prevent unauthorized entry into the mining area. Safety is the primary goal of the perimeter berms; storage of excess material will be provided by the bonded Overburden Storage Pile.**
4. **Install diversion ditches upslope of the perimeter berms to divert runoff away from the mining area.**
5. **All berms will be seeded and mulched to develop vegetative cover to stabilize the berm. Overburden will be placed in the Overburden Storage Pile and utilized for construction of the access road to Meadowlark Drive.**
6. **The initial mineral extract will occur at or near the final pit floor elevation and work into the hillside. Exploration efforts indicate there is approximatly 50-75' of material that can be removed by general excavation before consolidated rock is encountered. The initial blast at the site will be far enough away from the surrounding stream barrier areas to prevent blasted material encroaching the barrier areas. Future blasts will be oriented to minimize the potential for blasted material from entering the stream barrier area.**
7. **Mine Hard Rock Phase 1 to the west and south to Phase 1 mining limits. Phased mining increments are developed to enhance sediment collection and control. Phasing increments are developed by successively stripping sections of ~5-6 acres in size. Containment berms and low walls along the mining phase boundary are utilized to define the current mining area. No overburden shall be placed downslope of the containment berm or low wall. A pit sump shall be developed behind the low wall in conjunction with the perimeter controls to collect pit runoff for conveyance to Basin 2. The pit sump will be constructed by blasting and excavating consolidated material from the pit floor. Conveyance of pit water from the sump to Basin 2 can be achieved by Ditch 1 or by pumping.**
8. **Excess overburden that cannot be placed in perimeter berms shall be placed in the Overburden Storage Pile.**
9. **Proceed to Hard Rock Phase 2**

Hard Rock Phase 2:

A bond increment application will be submitted to DEP for Hard Rock Phase 2 opertions. Hard Rock Phase 2 will continue Hard Rock Phase 1 to the south.

Hard Rock Phase 2 Operation Sequence

1. **Strip and stockpile overburden.**
2. **Install diversion ditches upslope of the perimeter berms to divert runoff away from the mining area.**
3. **Excess overburden that cannot be placed in perimeter berms shall be placed in the Overburden Storage Pile.**
4. **Maintain runoff controls utilized for Phase 1. Additional pit sumps may be constructed as conditions warrant.**
5. **Install highwall fall prevention berms and signage.**
6. **Mining will progress south to Phase 2 limits.**
7. **Proceed to Hard Rock Phase 3.**

Hard Rock Phase 3:

A bond increment application will be submitted to DEP for Hard Rock Phase 3 opertions. Hard Rock Phase 3 will continue Hard Rock Phase 2 to the south.

Hard Rock Phase 3 Operation Sequence

1. **Strip and stockpile overburden.**
2. **Install diversion ditches upslope of the perimeter berms to divert runoff away from the mining area.**
3. **Excess overburden that cannot be placed in perimeter berms shall be placed in the Overburden Storage Pile or utilized for concurrent reclamation.**
4. **Maintain runoff controls utilized for Phase 1. Additional pit sumps may be constructed as conditions warrant.**
5. **Install highwall fall prevention berms and signage.**
6. **Mining will progress south to Phase 3 (SMP boundary) limits.**

Hard Rock Phase 4:

A major permit revision and bond increment application will be submitted to DEP for Hard Rock Phase 4 opertions.

Hard Rock Phase 5:

A major permit revision and bond increment application will be submitted to DEP for Hard Rock Phase 5 opertions.

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BOND CALCULATION SUMMARY-NONCOAL CONSOLIDATED

Permittee: Bishop Brothers Construction Co., Inc.		Date: 05/05/23 Revised: 02/26/24
Permit #: 08230301	Mine Name: Minard Mine	
Municipality: Athens Twp		County: Bradford

Operation (see attached calculations)	Quantity	Units	Rate $/Unit	Bond Amount
Mining Area (i.e. minor grading/vegetation)	4.7	Acres	3500	16450.00
Support Area (revegetation)	15.2	Acres	1830	27816.00
Spoil Storage/Earthmoving*	70000	Cubic yards	1.05	73500.00
Highwall Blasting				
Up to 20 ft Height		Linear foot	10	
>20 up to 30 Height		Linear foot	20	
>30 up to 40 Height		Linear foot	40	
>40 up to 50 Height	1440	Linear foot	55	79200.00
>50 Height		Linear foot		
Mine Sealing		Calculation		
Ponds	1	No of Ponds	3800	3800
Demolition of Structures	Lump Sum	Calculation		
Large Tires		Each		
Other Costs				
Bridge Demo	Lump Sum	Calculation	25000	25000
Mobilization/Demobilization	Lump Sum	Calculation	4%	9030.64
Total Reclamation Cost				234796.64
CONSOLIDATED SUBTOTAL				234796.64

March 11, 2023 Bond Rates

* The 70,000 CY of Spoil Storage/Earthmoving material is for reclaiming the hard rock mining pit.

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BOND CALCULATION SUMMARY-NONCOAL UNCONSOLIDATED

Permittee: Bishop Brothers Construction Co. Inc.		Date: 05/05/23 Revised: 02/26/24
Permit #: 08230301	Mine Name: Minard Mine	
Municipality: Athens Township		County: Bradford

Operation (see attached calculations)	Quantity	Units	Rate $/Unit	Bond Amount
Mining Area (i.e. minor grading/vegetation)	0	Acres	3500	0
Support Area (revegetation)	0	Acres	1830	0
Spoil Storage/Earthmoving		Cubic yards		
Highwall Height				
Up to 35 ft	0	Acres	1700	0
>35 ft up to 65 ft		Acres		
>65 ft		Acres		
Water Impoundment Safety Bench		Acres		
Ponds		No of Ponds		
Demolition of Structures	Lump Sum	Calculation		
Large Tires		Each		
Other Costs				
Mobilization/Demobilization	Lump Sum	Calculation	4%	
Total Reclamation Cost				0
CONSOLIDATED SUBTOTAL				234796.64
SITE TOTAL				234796.64

March 11, 2023 Bond Rates

Bond Calculations

Minard Mine 05/05/23, revised 02/26/24

General Description: 15.2 acres of support area
4.7 acres of pit area to ~770' in Phase 1

Refer to: Exhibit 9 Operations Map dated 05/05/23, revised 02/26/24

Table 1: Highwall Height Variation Summary

Point	Elevation feet	Highwall Height feet	Height feet	Length feet	Highwall Face Area SF	Cost / LF of Highwall * $ / LF	TOTAL $
Highwall = 820							
A -A1	820		50	550	27500	55	30,250.00
Highwall = 870							
B - B1	870		50	520	26000	55	28,600.00
Highwall = 920							
C - C1	920		50	370	18500	55	20,350.00
				1,440	72,000	TOTAL	79,200.00

Table 2: Highwall Summary

Highwall Height feet	Cost / LF of Highwall * $ / LF	Length feet	
0-20'	10	0	0
21-30'	20	0	0
31-40'	40	0	0
41-50'	55	1440	79,200
50'+	75	0	0
			79,200

Table 3: OB Storage Pile

	Volume CY
OB Storage	70000
	70,000

Table 4: Noncoal Consolidated Summary

Item	Rate*		Unit		Quantity	Total
Pit Floor	$3,500.00	$/ac	acres		4.7	16,450.00
Support	$1,830.00	$/ac	acres		15.2	27,816.00
Earthmoving	$1.05	$/CY	CY	see Table 3	70,000	73,500.00
Highwall	varies		LF	see Table 2	1,440	79,200.00
Sed Pond	$3,800.00	$/EACH	EACH		1	3,800.00
Bridge Removal	$25,000.00	LS	LS		1	25,000.00
Site Mobilization (min of 4% total cost or $40,000)						$9,030.64
					Total	$234,796.64

* Rates from PA Bulletin Volume 53 Issue 10 dated 03/11/23

Module 12: Erosion and Sedimentation Controls
[§§77.458/77.461/77.466/77.525/77.527/77.531/Chapter 102]

12.1 Diversion Controls

Provide a plan for the collection and conveyance to a natural drainageway of the runoff from upslope undisturbed areas. Provide a separate general design for a temporary highwall diversion which limits the amount of runoff which can enter the pit (where applicable). Include design criteria, capacity calculations, profile of proposed channel slopes, typical cross-sections, required channel linings and applicable details on 12.1 Data Sheet.

HARD ROCK:
Upslope highwall diversions will direct runoff away from the mining areas to limit the amount of runoff which can enter the pit.

Berms will be utilized to divert runoff away from the mining areas. Placement of overburden and/or topsoil berms upslope of the mining areas will prevent runoff from entering the mining area. Berms will be constructed to minimize upslope ponding by diverting runoff away from the active mining areas.

SAND & GRAVEL:
Due to the topography of the site, there is limited upslope drainage to the site. Drainage will be controlled within the permit boundary.

12.2 Erosion and Sediment Control

Provide a plan for the control of erosion and sedimentation for lands within the permit area to be disturbed by mining activities. Include a narrative describing the implementation of the plan, and detailed design and construction plans and specifications for structures or facilities used in the plan. The plan must include each phase or phases of mining. Include design criteria, capacity calculations, profile of proposed channel slopes, typical cross-sections, required channel linings and applicable details on 12.1 Diversion/Collection Ditch Data Sheet for collection and interceptor ditches. Provide documentation of the capacity of the existing drainage system and the effect proposed mining activities will have on the drainage. Show discharge points to natural drainageways and culverts that intercept upslope drainage or carry drainage away from the site. Show facilities to scale on Modules 9 and 16 as appropriate.

The proposed mining operation will not negatively impact the surrounding areas or degrade the pre mining environmental balance by the management of the stormwater runoff and/or snowmelt. This management plan is based upon the implementation of the erosion and sedimentation controls as described herein and Module 10. Erosion and sedimentation controls will be installed prior to the commencement of earthmoving activities. The area of concern will be cleared of all vegetation prior to any earthmoving activities. Topsoils and overburden will be removed and stored at the perimeter of mining operations. The stockpile berms will serve two purposes: 1) The storage of topsoils for redistribution after mining has been completed, and 2) the retention of stormwater runoff within the area to be mined. Once vegetation has become established on berms, the operation will be virtually self-contained during normal climatic conditions. The typical stockpile berm configuration will be constructed along the perimeter of operation. There is sufficient material at the site to construct the berms to this configuration and complete concurrent reclamation. Stockpile berms (topsoil and/or overburden) will be constructed with available material in conjunction with reclamation activities. Berms will be seeded and mulched immediately after construction with a permanent grass seed mixture.

EXISTING E&S CONTROLS:
N/A

PROPOSED E&S CONTROLS:
Berms, diversions, drainageways, sediment traps, sediment basins, and treatment basins will utilized by the proposed operation. Erosion and sedimentation controls will be installed as detailed in the construciton sequence in Module 10.

Perimeter berms and low walls will serve multiple functions: 1) diversion of upslope runoff away from the mining area, 2) containment of onsite runoff, 3) the storage of topsoil and overburden for redistribution after mining has been completed, and 4) serve as a protective barrier (safety, sight and sound) to the general public in the area.

A pit sump shall be utilzied in the Hard Rock mining area to collect runoff to then convey to Basin 2. The pit sump shall be developed as described in Module 10.

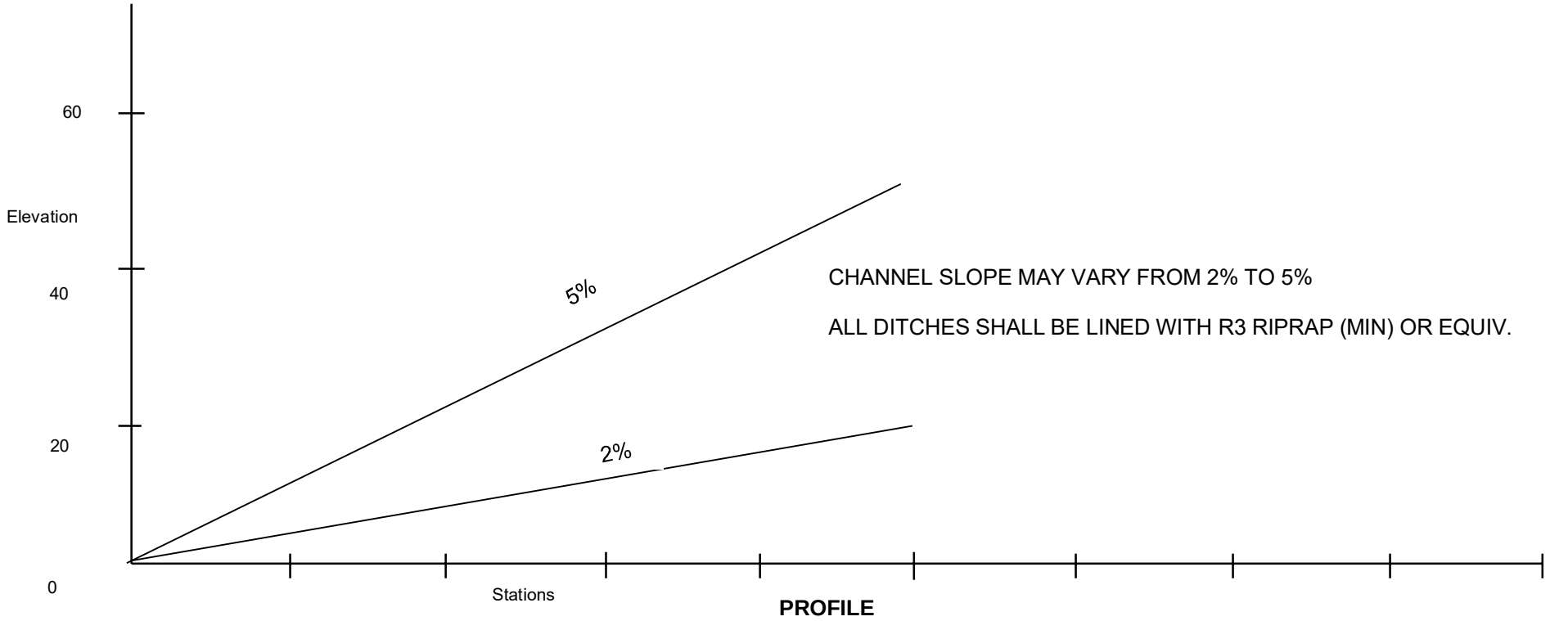
The overburden stockpile shall utilize perimeter E&S controls such as silt sock or construction of an earthen berm.

12.1 Diversion/Collection Ditch Data Sheet

Title: **West Slope Diversions**	Site: Minard Mine	Company: Bishop Brothers Constr. Co. Inc.	Permit Number: 08230301
Prepared by: Tract Engineering, PLLC	Telephone Number: 814-272-0301	Date: 05/05/23, revised 02/26/24	Sheet 1___ of 1___

Design Calculations:

Station		Drainage Area acres	Design Storm (yrs.)	Average Watershed Slope (%)	Curve Number	Peak Discharge Q cfs	Channel Bed Slope (%)	Freeboafd (ft.)	Channel Lining	Manning's Coefficient (n)	Channel Bottom Width (ft)	Channel Side Slopes	Flow Area (sq.ft.)	Flow Depth (ft.)	Top Flow Width (ft.)	Flow Velocity (ft/sec)	Q Available cfs	With Freeboard		
Start End	Eleva-tion																	Channel Depth (ft.)	Top Channel Width (ft.)	Q Available cfs
0+00	0	1.5	10	70	90	4.1	2	1	R3	0.035	1	2	1.87	0.75	4	3.4	6.4	2	9	60
10+00	20																			
0+00	0	1.5	10	70	90	4.1	5	1	R3	0.035	1	2	1	0.5	3	4.3	4.3	2	9	95
10+00	50																			

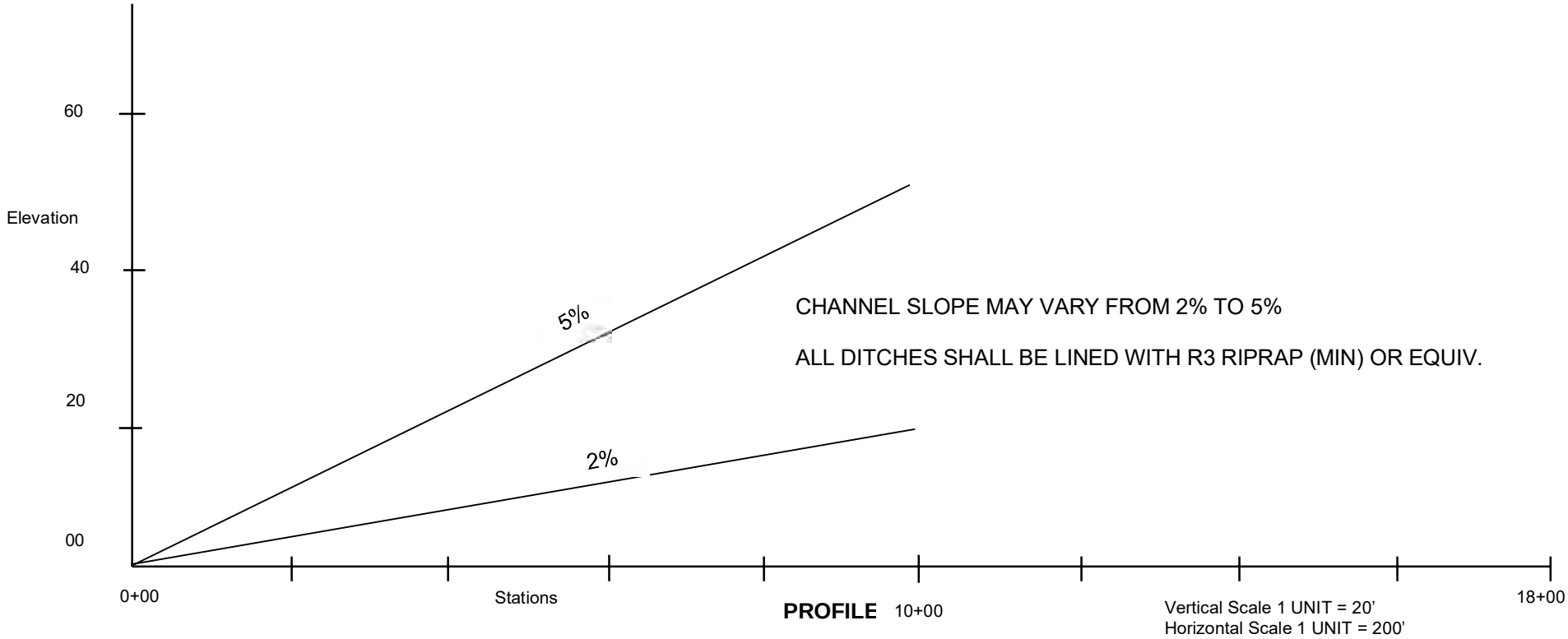


12.1 Diversion/Collection Ditch Data Sheet

Title: **East Slope Diversions**	Site: Minard Mine	Company: Bishop Brothers Constr Co Inc.	Permit Number: 08230301
Prepared by: Tract Engineering, PLLC	Telephone Number: 814-272-0301	Date: 05/05/23, revised 02/26/24	Sheet 1___ of 1___

Design Calculations:

Station		Drainage Area	Design Storm	Average Watershed Slope	Curve Number	Peak Discharge Q	Channel Bed Slope	Freeboafd	Channel Lining	Manning's Coefficient	Channel Bottom Width	Channel Side Slopes	Flow Area	Flow Depth	Top Flow Width	Flow Velocity	Q Available	With Freeboard		
Start / End	Elevation	acres	(yrs.)	(%)		cfs	(%)	(ft.)		(n)	(ft)		(sq.ft.)	(ft.)	(ft.)	(ft/sec)	cfs	Channel Depth (ft.)	Top Channel Width (ft.)	Q Available cfs
0+00	0	3.2	10	70	90	8.8	2	1	R3	0.035	1	2	3	1	5	4.0	12	2	9	60
10+00	20																			
0+00	0	3.2	10	70	90	8.8	5	1	R3	0.035	1	2	1.87	0.75	4	5.4	10.1	2	9	95
10+00	50																			



Module 13: Impoundments/Treatment Facilities

[§§77.457/77.461/77.526/77.531/Chapter 105]

13.1 Treatment

Provide a plan for the treatment of surface and groundwater drainage from the areas disturbed by the mining activities. Include a construction and treatment narrative, flow diagram, design criteria, and design calculations (which include the proposed capacity) of the treatment facilities. Identify treatment chemicals to be used. Do not include any facilities included in Module 12.

Basin 2 (Treatment Facility)

Surface water accumulating in the pit, as well as any ground water encountered during mining will be conveyed to the sump prior to conveyance to Basin 2. Basin 2 will discharge runoff from the site. The primary focus of treatment will be settling of solids in the runoff. When the sediment holding capacity of the basin has been reached, the basin will be cleaned. This refuse will be incorporated into the site reclamation. The basins should be cleaned when fines reach designed cleanout depth (1/3 of basin depth, max.).

The treatment basin volume was determined by the volume of water conveyed to the treatment facility.

Final discharge of Basin 2 will be via closed conduit to Tutelow Creek to Outfall 002.

The basin design and construction is detailed in Module 13.3(c)

In the event suspended solids do not settle in a timely manner in the basins, a flocculant will be utilized to promote settling of suspended solids. MasterCat 4239, a liquid cagulant, supplied by Process Masters or equivalent may be utilized to treat water to effluent limits. Field testing shall be performed to determine the proper dosage. The flocculant will be dosed near the end of Ditch 1. Turbulent flow in the ditch and into the basin will promote mixing of the flooculant and stormwater. Basin 2 is divided into two (2) cells by a rock filter berm. The multi-cell basin configuration will promote settling of solids in the first cell and polishing in the second cell. In addition, the outlet pipe is valved to stop the discharge should water quality effluent limits not be met.

Settled solids will collect in the basins. Basins will be inspected quarterly to evaluate the volume of solids collected. The volume of collected solids collected in the basin will determine when sediment will need to be removed from the basins.

Product data sheet for MasterCat 4239 attached (pg 13-20) and a SDS (pg 13-21).

13.2 Quarry/Pit Sump

Provide a description of the sump including size, location, depth, method of pumping, etc. (Key location to Exhibits 6.2 and 9).

Support Area for Hard Rock Mining (located in the Sand & Gravel Phase 1 mineral extraction area):

Support Area Sumps (infiltration ditches) will be located at the edges of the proposed support area for the initial bond increment for the hard rock mining area. The sumps will be excavated into the unconsolidated gravel and infiltrate runoff into the substrate. Refer to Exhibit 9 for locations of Support Area Sumps.

Water will be conveyed by overland flow to the Support Area Sumps. Sumps will be inspected monthly and cleaned by operator on an as-needed basis to ensure infiltration capacity. Sumps may be connected to the containment moat at the perimeter of the operation.

Support Area Sump 1 has a contributing drainage area of 5.3 acres.

Support Area Sump 2 has a contributing drainage area of 3.4 acres.

Hard Rock Mining, Phase 1, 2, & 3:

The proposed pit will be utilized as a sump to collect pit water. A 50'x50'x10' (or as conditions warrant) sump will collect rainfall/snowmelt events. The sump elevation and location will change as mining progresses.

Water will be conveyed from the sump as condition warrant. The operator will a diesel powered trash pump or gravity channel to convey water from the sump to a treatment basin.

Quarry sump volume design considerations:

1. **Maximum drainage area of the phase of mining.**
2. **During a major rainfall/snowmelt event, the pit floor will be used for stormwater storage. A conservative estimate of available area for runoff storage is approximately 15% of the pit floor area.**

Using the equation V= 1.33 (ARC) from section 6.4 of the DEP Mining Manual where:

A = maximum drainage area in square feet

R = 4.2 inches in 24 hours = 0.35 ft /24 hrs

C = 0.5

V = volume in cubic feet

TABLE 13-1: PIT STORAGE CAPACITY DURING MINING

	Calculated Drainage Area	*Design Drainage Area*	*Design Criteria*	*Required Volume*	*Pit Floor Storage Area ~15% of DA*	*Calculated Approximate Water Depth*
	ACRES	ACRES		CF	AC	FT
Phase 1 Pit Floor	3.6	5	V = 1.33 ARC	51,000	0.75	1.6
Phase 1+2 Pit Floor	7.4	10	V = 1.33 ARC	102,000	1.5	1.6
Phase 1+2+3 Pit Floor	37.1	40	V = 1.33 ARC	406,000	6	1.6

The calculated water depth is less than the pit depth and/or perimeter berm depth.

The pit sump must be constructed away from the working face. All traffic (equipment and trucks) shall be routed around the pit sump area. Traffic shall not run through pit water. See "Pit Sump Location" detail on Exhibit 10.2.

In the event the pit does not dewater in a timely manner, the operator will move to other benches above the water level.

13.3 Dams and Impoundments (General) Do not include any facilities included in Module 12

a) Proposed use.

Basin 1 (Sediment Basin), Support Area Sump 1, & Support Area Sump 2

Runoff from the Support Area will be collected in Basin 1, Support Area Sump 1, or Support Area Sump 2 by containment berm, containment moat constructed along the perimeter of the Storage Area or overland flow. The primary focus of treatment will be settling of solids in the runoff. When the sediment holding capacity of the basin has been reached, the basin will be cleaned. This refuse will be incorporated into the site reclamation. The basin should be cleaned when fines reach the designed cleanout depth. The basin volume was determined by the basin's drainage area and 7000 CF/acre storage defined in the DEP Engineering Manual. Of the 7000 CF, 2000 CF/acre is for sediment storage.

When Phase 1 Sand & Gravel mining commences, runoff from the Support Area will be directed to the pit sump. Support Area Sump 1 and Support Area Sump 2 will be mined out as mining progresses. Areas of the Support Area that cannot drain to the Phase 1 Sand & Gravel pit sump will continue to drain to Basin 1.

Basin 1 discharge will be via closed conduit to Outfall 001 to Tutelow Creek. Support Area Sump 1 and Support Area Sump 2 will infiltrate to the subsurface. In the event of a major runoff event and the capacity of sumps is exceeded, runoff will flow overland to Basin 1 and exit the site.

Basin discharge rates and stormwater volumes were established using the TR-55 methodology and/or V =CIA. Where:

TR-55:

24 hour storm event rainfall: ***Engineering Manual Table 2-1***

2 yr = 2.8 inches
10 yr = 4.2 inches
25 yr = 4.9 inches
50 yr = 5.4 inches
100 yr = 5.8 inches

CN = 89 for mined areas & 71 for unmanaged habitat (Hydrologic Soil Group D)
Tc = calculated for each drainage area

V =CIA

V= Volume in cubic feet
A = Area of open pit, areas between highwall and diversion ditch, and area that drains into the pit
I = Rainfall (in feet)/24 hours x detention time of 6 hours.
C = % of rainfall not absorbed by soils.
1. Open pit = 0.50
2. Area above backfill = 0.30
3. Backfilled area = 0.25

Sump infiltration rate is assumed to be 2.0 inches per hour (minimum). If the infiltration rate is below the design rate, the sump shall be cleaned of sediment to restore the design infiltration rate.

All basin construction will be conducted as detailed in Module 13.3(c) along with proposed capacity calculations.

Basin 2 (Treatment Facility):
The series of multiple treatment cells in Basin 2 is designed to treat water conveyed from the pit sump. Water collected in the pit will be conveyed to the first treatment cell. Once the water has entered the basin, it will flow through the various cells permitting the sediments to settle prior to discharge. A flocculant may be utilized should effluent limits required treatment of suspended solids.

The basin has been designed with sufficient storage capacities and residency to allow for efficient material processing. See Module 13.3(c)

Basin 2 discharge will be via closed conduit to Outfall 002 to Tutelow Creek.

b) Map and location (key to maps).

Refer to Exhibit 9

c) Provide a design report and construction plans and specifications to include detailed cross-sections and plan view scale drawings of the proposed structure which show: principal spillway, dewatering devices, embankment details (including maximum height, top width, and cutoff trench), crest of emergency spillway and existing ground.

Refer to Exhibit 7/10 (cross sections), Exhibit 9, Exhibit 9.1, and exhibits included with this module for impoundment details.

Basin 1 (Sediment Basin), Support Area Sump 1, & Support Area Sump 2 - Surface Hydrology:
Peak flows were determined by either utilizing the SCS Engineering Field Manual Charts or by creating a hydrograph for the upslope watershed for the design storm (10, 25 or 50 year event) utilizing HydroCAD 10.00. Time of concentration was determined using the TR-55 calculations for sheet flow (not to exceed 50'), shallow concentrated flow, and channel flow. CN values were input based on the number of disturbed areas or current field conditions for those areas not to be disturbed. These were then "weighted" within the program. The hydrographs were then used to determine the maximum water surface elevation in the basins along with the requirement to discharge within 2-7 days. Results of the analysis are included herein.

Basin 1 (Sediment Basin), Support Area Sump 1, & Support Area Sump 2 - Geometrics:
Sedimentation basins are designed to provide at a minimum of a total of 7,000 cu. ft. of storage per disturbed acre contributory to the basin (5,000 cu. ft. for undisturbed areas) at the basin crest. Sediment storage was calculated at 2,000 cu. ft. per disturbed acre. Upslope areas which will not be impacted by the mining activities were included in the basin design at 5,000 cu ft.

Volumes were computed using prismoidal, trapezoidal or triangular volumetric formulas applied to achieve the design volumes required.

Emergency spillways are designed to have sufficient capacity so that the combination of temporary storage capacity above the principal spillway and the discharge from the principal spillway will safely convey the runoff from a 24 hour storm. Ponds with 20 acres of drainage or less will be designed to handle the 25 year storm event, and basins with 20-100 acres will be designed to convey the 50 year event. Ponds which are to remain permanently will have an emergency spillway capable of handling a routed 100 year storm.

Basin 1

Basin 1 will be located at the south end of the storage area. The basin will function as a sediment basin during mining and the emergency spillway is designed to convey the 25 year storm event. The principal spillway is a 10" hooded drain pipe and the dewatering pipe is a valved standpipe. The basin will discharge from the permit at Outfall 001. Table 13-2 summarizes the elevations and storage capacities.

Rock filter volume is deducted from the gross volume of the basin. Each filter is 8' top width, 18' bottom width, 5' tall, & 35' wide. The volume of one (1) rock filter is 2,275 CF = [5x8 + (2)(5x5/2)] x 35. Assume 40% voids, rock volume is 1,365 CF.

The volume of one (1) rock filter at the sediment storage elevation is 736 CF = [2x14 + (2)(2x2/2)] x 23. Assume 40% voids, rock volume is 442 CF.

TABLE 13-2: BASIN 1 STORAGE CAPACITY - DRAINAGE AREA = 3 ACRES

	Elevation	*Length*	*Width*	*Gross Volume (ft^3)*	*Net Volume (ft^3)*
Top	762	202	47	46820	45455
Emergency Spillway	759	190	35	22670	21305
Principal Spillway	758	186	31	16470	15105
Sediment Storage	756	178	23	6630	6188
Bottom	754	170	15	0	0

To prevent short circuiting of the basin, all runoff will enter the north end of the basin and discharge from the south end. If the detention time in the basin is inadequate to settle solids, a rock filter berm may be added to promote settling.

Accumulated sediment will be removed from the basin and included in the reclamation as mining progresses.

For the 25 year storm event:
Basin 1 inflow is 24 cfs. The emergency spillway is designed to convey the influent flow. Calculations are provided on pages 13-18 and 13-19. Refer to Exhibit 10.2 for basin details.

Support Area Sump 1

Support Area Sump 1 will be located south of the initial mining support at the end of the storage area. The sump will function as an infiltration basin during mining. If the basin's capacity is exceeded, runoff will flow overland to the south towards Basin 1. Table 13-3 summarizes the elevations and storage capacities.

TABLE 13-3: SUPPORT AREA SUMP 1 STORAGE CAPACITY - DRAINAGE AREA = 5.3 ACRES

	Elevation	*Length*	*Width*	*Gross Volume (ft^3)*	*Net Volume (ft^3)*
Top	761	228	48	52304	52304
Emergency Spillway	760	224	44	41568	41568
Bottom	754	200	20	0	0

Accumulated sediment will be removed from the basin and included in the reclamation as mining progresses.

For the 25 year storm event:
Sump 1 inflow is 24 cfs. The emergency spillway is designed to convey the influent flow. Calculations are provided on pages 13-18 and 13-19. Refer to Exhibit 10.2 for basin details.

Support Area Sump 2

Support Area Sump 2 will be located between Support Area Sump 1 and Basin 1. The sump will function as an infiltration basin during mining. If the basin's capacity is exceeded, runoff will flow overland to the south towards Basin 1. Table 13-4 summarizes the elevations and storage capacities.

TABLE 13-4: SUPPORT AREA SUMP 2 STORAGE CAPACITY - DRAINAGE AREA = 3.4 ACRES

	Elevation	*Length*	*Width*	*Gross Volume (ft^3)*	*Net Volume (ft^3)*
Top	761	228	48	52304	52304
Emergency Spillway	760	224	44	41568	41568
Bottom	754	200	20	0	0

Accumulated sediment will be removed from the basin and included in the reclamation as mining progresses.

For the 25 year storm event:
Sump 2 inflow is 24 cfs. The emergency spillway is designed to convey the influent flow. Calculations are provided on pages 13-18 and 13-19. Refer to Exhibit 10.2 for basin details.

Basin 2 (Treatment Facility)

Geometrics:
The multi-cell treatment basin was designed to provide a total of twelve (12) hours of detention time based upon the dewatering rate of pit pump. The operator will use a 200 gpm trash pump to dewater the pit.

12 hrs x 200 gpm = 19,500 ft3

Treatment System = 19,500 + 33% additional storage = 26,000 ft3

Volumes were computed using prismoidal, trapezoidal or triangular volumetric formulas applied to achieve the design volumes required.

Basin 2 rock filter volume is deducted from the gross volume of the basin. Each filter is 8' top width (max), 20' bottom width (max), 6' tall, & 44' wide. The volume of one (1) rock filter is 3696 CF = [6x8 + (2)(6x6/2)] x 44. Assume 40% voids, rock volume is 2,218 CF. Deduct this rock volume from the gross basin volume at the principal spillway elevation.

TABLE 13-3: BASIN 2 STORAGE CAPACITY DURING MINING

	Elevation	*Length*	*Width*	*Gross Volume (ft^3)*	*Net Volume (ft^3)*
Top	772.25 (+10.25')	241	61	92980	90762
Spillway	768 (+6')	224	44	41000	38782
Bottom	762 (+0')	200	20	0	0

38,782 CF > 26,000 CF of required storage.

Accumulated sediment will be removed from the basin and included in the reclamation as mining progresses when sediment reaches 1/3 depth of basin.

For the 25 year storm event:
Basin 2 potential inflow is 180 cfs. The emergency spillway is designed to convey the influent flow. Calculations are provided on pages 13-18 and 13-19.

Refer to Exhibit 10.2 for basin details.

Basin Construction Specifications (Basins 1 & 2 & Sumps 1 & 2):

1. **Prior to the beginning of excavations, the topsoil from the impoundment construction area will be removed and stockpiled per Module 21.**
2. **The embankment will be constructed with slopes as noted on the construction details or flatter. As a rule of thumb, the total ratio of the slopes will be 5:1 assuming a 10' top width embankment. Incised slopes will be steeper (vertical to 1:1).**
3. **There will be a "key-way" cutoff incorporated into the embankment to aid in the stability of the structure, and to prevent seepage.**
4. **The embankment will be constructed in lifts of 8" (eight inch) maximum thickness and compacted by a minimum of four (4) passes of the loader or dozer over each lift.**
5. **No cobbles, boulders, or rock fragments having a maximum dimension of more than 5" (five inches) shall be incorporated into the embankment.**
6. **No brush, sod, roots, or other perishable or unsuitable materials shall be placed in the embankment.**
7. **The embankment shall have a minimum crest width of 10.0' (ten feet) or as noted.**

8. **Seeding and mulching of the embankment shall be at the rates and by the methods contained in Module 23. In the event of winter construction, disturbed areas will be seeded and mulched as soon as practicable. Embankment out slopes will be mulched.**

9. **Select material will be placed adjacent to the discharge pipe in 6" (six inch) lifts and compacted to prevent seepage and scouring. Anti-seep collars will be incorporated into the embankment as an additional safety measure for smooth pipe over 6" (six inches) in diameter or corrugated pipe over 12" (twelve inches).**

10. **The emergency spillways will be a trapezoidal type with 3:1 sideslopes; and constructed on undisturbed ground. Where topographic conditions do not allow for the emergency spillway to be constructed on original ground, added measures will be taken to assure the stability of the spillway. These would include the placement of a geotextile foundation from the crest to original ground with the addition of riprap over the fabric.**

11. **If design specifications require additional protection, a rock lining will be placed at the point of discharge in the emergency spillway. This rock will be D50=6" at 165 lb/cu. ft. or equivalent or as specified in the individual pond design sheets. The spillway slopes are to be rip-rapped. Placement of the rock will be over a filter bed 6" (six inches) in depth, 2" (two inch) coarse aggregate or a geotextile base can be used.**

12. **Riprap shall be placed to grade in a manner to ensure that the large rock fragments are uniformly distributed with smaller fragments placed to fill the residual spaces and create a densely placed, uniform, well keyed layer of riprap of the specified thickness.**

13. **It should be noted that the designs submitted are to be followed as closely as possible.**

d) Complete a Certification Form for each structure as appropriate:
Sediment Pond Certification form 5600-PM-BMP0408
Treatment Pond Certification form 5600-PM-BMP0455

Refer to page 13-9 for Basin 1 Sediment Pond Certification.
Refer to page 13-11 for Basin 2 Treatment Pond Certification.
Refer to page 13-13 for Support Area Sump 1 Sediment Pond Certification.
Refer to page 13-15 for Support Area Sump 2 Sediment Pond Certification.

e) If the impoundment is located outside of the area covered by the geology and hydrology description contained in Modules 7 and 8, include a preliminary geology and hydrology report.

N/A

f) Describe the potential effect on the structure from subsidence from underground mining when applicable.

N/A

g) If the detailed design plans are not included with the initial submittal of this application, identify when the detailed design plans will be submitted. (**Note:** The detailed design plans must be approved by the Department before construction of the structure begins.)

N/A

13.4 Class C Dams

N/A

13.5 Operation and Maintenance Requirements

Describe the operation and maintenance requirements for the structure, including dewatering of the impoundments following storm events.

BASIN 1 (Sediment Basin)

Basin 1 will operate as a sediment basin. The basin is designed to provide 7000 ft3/acre of storage for disturbed areas. The lowest level of dewatering will provide 2000 ft3/acre of sediment storage. Dewatering of the basins will be achieved via a valved perforated stand pipe. The outlet will be as close to original ground and protected by riprap. The basin will require periodic sediment removal as to provide storage capacity. The dimensions and placement have been designed with anticipated maintenance in mind. In the unlikely event that the basins reach their maximum storage capacity, the emergency spillway will be activated.

OPERATION:

1. **Basin 1 will operate as a sediment basin on an as needed basis. Runoff from the Support Area will be conveyed to Basin 1.**
2. **The operator will evaluate the conditions of the Basin 1 water quality. If the suspended solids concentration is high (turbid water), the water shall be permitted to settle the suspended solids prior to discharge by closing the discharge valve of the dewatering pipe. Once water quality meets effluent standards, water can be discharged to Outfall 001.**
3. **Discharge water will be conveyed via a pipe to Outfall 001.**
4. **The operator shall collect a water sample when Basin 1 is discharging at Outfall 001. The NPDES permit dictates the frequency of monitoring.**

BASIN 2 (Treatment Facility):

Basin 2 will operate as a treatment basin on an as needed basis. Pit sump water will be conveyed to Basin 2 by gravity flow or pumped when needed. There is no pumped discharge from Basin 2; discharge will be by gravity.

OPERATION:

1. **Basin 2 will operate as a treatment basin on an as needed basis. Pit water will be conveyed to Basin 2.**
2. **The operator will evaluate the conditions of the Basin 2 water quality. If the suspended solids concentration is high (turbid water), the water shall be permitted to settle the suspended solids prior to discharge. Once water quality meets effluent standards, water can be discharged to Outfall 002. In the event suspended solids do not settle in a reasonable time period, the operator may utilize a flocculent to accelerate settling of the solids. Dispense flocculent in accordance with the manufacturer's recommendations.**
3. **Discharge water will be conveyed via a pipe to Outfall 002.**
4. **The operator shall collect a water sample when Basin 2 is discharging at Outfall 002. The NPDES permit dictates the frequency of monitoring.**

SUPPORT AREA SUMP 1 & 2 (Infiltration Basin)

Sumps 1 & 2 will operate as an infiltration basin. The basin is designed to provide 7000 ft3/acre of storage for disturbed areas. The basin will require periodic sediment removal as to provide storage capacity.

OPERATION:

1. **Sumps 1 & 2 will operate as a sediment basin on an as needed basis. Runoff from the Support Area will be conveyed to the sumps.**
2. **The operator will evaluate the infiltration rate of the sumps. The design sump infiltration rate is assumed to be 2.0 inches per hour (minimum). If the infiltration rate is below the design rate, the sump shall be cleaned of sediment to restore the design infiltration rate.**

MAINTENANCE:

Inspection will be made after each storm event and on a monthly basis. The operator or assigned person will inspect the sump and its associated structures to include: condition of the outlet structure, deficiencies in the collection ditches, an evidence of instability of the embankment, the presence of vegetative cover, and any accelerated erosion occurring at the inlet or discharge points or by rill and gully erosion of the embankments themselves.

Corrective measures will include the reseeding of any areas which may require additional cover. If the season is not favorable to the germination of seeds, a mulch cover of straw or hay will be substituted.

Structural failures or instabilities will be referred to the engineer for further investigation and corrective measures. Until such time as the repairs can be made, the operator will inspect the structure in question daily, and have available on site a pump capable of dewatering the basin in a timely manner should it become necessary.

Sediment shall be removed from the basin when the storage capacity has reached one third (1/3) of the depth of the basin or infiltration rates drop below the design infiltration rate. Removal will be accomplished by either pumping or mechanical dredging. Sediments will then be transported to be stored or spread over backfilled areas and used as a topsoil layer.

Exhibit 9, typical drawings and details on Exhibit 10.1 and Exhibit 10.2, and information presented in this Module are to be used as a general guideline; however, changes or modifications should be made to fit field conditions.

13.6 Removal

Describe the timetable and plans for removal of the impoundment and reclamation of the area.

Basin 1 and 2 will be removed at the completion of reclamation of the contributing drainage area to the basin.

Sump 1 and 2 will be removed at the completion of reclamation or will be mined out as mining progresses.

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SEDIMENT POND CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301

Engineer/Land Surveyor: Tim Gourley, PE Structure ID #: Basin 1 NPDES Outfall ID #: 001

Location (point of discharge): Latitude (DMS): 41 58 01.0 Longitude (DMS): 76 32 42.7

Drainage Area: 3 acres Design Storm: 25 year / 24 hour Rainfall Amount: 4.2 inches

Average Watershed Slope: 2 Land Use: SUPPORT Soil Type: N/A Curve Number: 89

Peak Discharge: 23 cubic feet/second NPDES Average Flow: 0.03 mgd NPDES Design Flow: 0.4 mgd

		Permit Application	***As Constructed***
Embankment	Top Width (Minimum)	10'	
	Outside Slope (Maximum) (H:V)	---	
	Inside Slope (Maximum) (H:V)	---	
	Top Elevation	762	
	Bottom Elevation	754	
	Upstream Toe Elevation	n/a	
	Downstream Toe Elevation	n/a	
	Type of Cover	vegetation	
	Incised Slope (if any)	YES	
	Inside Slope (Maximum) (H:V)	2:1	
	Top Elevation	762	
	Bottom Elevation	754	
Principal Spillway	Type	10" hooded pipe	
	Conduit Diameter (if barrel/riser give both)	10" PVC	
	Inlet Elevation	758	
	Outlet Protection	R3	
	Spillway Capacity (cubic feet/second)	24.7	
Dewatering Device	Type/Size	standpipe	
	Inlet Elevation	756	
	Discharge Regulation (self-draining or valved)	valved	
	Discharge Capacity (cubic feet/second)	0.25 cfs	
	Time to Dewater Full Pond	4.4 days	
Emergency Spillway	Type	broadcrested weir	
	Width	25'	
	Depth (with 2 feet of freeboard)	3'	
	Length	24'	
	Sideslopes (H:V)	3:1	
	Crest Elevation	759	
	Slope	2%	
	Type of Lining/Protection	R3	
	Spillway Capacity (provide design calculations)	29.7 (24 required)	
Storage Capacity	Length @ Bottom	170	
	Width @ Bottom	15	
	Length @ Dewatering Device	178	
	Width @ Dewatering Device	23	
	Volume @ Dewatering Device	6630-442(FILTER)=6188	
	Length @ Principal Spillway	186	
	Width @ Principal Spillway	31	
	Volume @ Principal Spillway	16470-1365(FILTER)=15105	
	Length @ Crest of Emergency Spillway	190	
	Width @ Crest of Emergency Spillway	35	
	Volume @ Crest of Emergency Spillway	22670-1365(FILTER)=21305	

Will the sediment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☒ Yes ☐ No

If yes, specify the type of liner that will be used: NONE

SEDIMENT POND CONSTRUCTION CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301

Engineer/Land Surveyor: _____ Structure ID #: Basin 1 NPDES Outfall ID #: 001

1.	Has the facility been constructed at the location shown in the approved permit?	☐ Yes	☐ No	
2.	Is the emergency spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	
3.	Is the principal spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	☐ NA
4.	Is the dewatering device constructed at the location shown in the approved plan?	☐ Yes	☐ No	
5.	Are the collection channel inlets constructed at the location shown in the approved plan?	☐ Yes	☐ No	
6.	Do the collection channel inlets have adequate inlet protection?	☐ Yes	☐ No	
7.	Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
8.	Has the non-discharge alternative been constructed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
9.	Was coal encountered during construction of the pond?	☐ Yes	☐ No	
10.	If yes, was a liner used?	☐ Yes	☐ No	
11.	Identify any conditions or deficiencies in the facility that need to be corrected.			☐ NA

_____

_____

_____

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	**Date of Inspection**	**Inspected By**

Supervising Professional Engineer/Registered Professional Land Surveyor _____

Address and phone _____

_____

_____

I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

_____
Signature of Registered Professional Engineer/Registered Professional Land Surveyor Date

SEAL

_____
Registration Number and Expiration Date

_____ _____
Signature of Permittee or Responsible Official Date Title

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TREATMENT POND CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301
Engineer/Land Surveyor: Tim Gourley, PE Structure ID #: Basin 2 NPDES Outfall ID #: 002
Location (point of discharge): Latitude (DMS): 41 58 03.8 Longitude (DMS): 76 32 51.7
Treatment Basin Sizing Calculation: V = 1.33 (A R C) + (Expected Groundwater Inflow Rate to Pit x Design Detention Time)
Drainage Area to System: 5 acres Design Storm: 25 year / 24-hour Rainfall Amount: 4.2 inches
Detention Time: 12 hours Expected Groundwater Inflow Rate to Pit: 0 gpm
Required Basin Volume: 26000 cubic feet NPDES Average Flow: 0.04 mgd NPDES Design Flow: 0.3 mgd

		Permit Application	***As Constructed***
Basin #: 2 Embankment	Top Width (Minimum)	10	
	Outside Slope (Maximum) (H:V)	3	
	Inside Slope (Maximum) (H:V)	2	
	Top Elevation (with 2 feet of freeboard)	772.25	
	Bottom Elevation	762	
	Upstream Toe Elevation	---	
	Downstream Toe Elevation	---	
	Type of Cover	vegetation	
	Incised Slope (if any)	YES	
	Inside Slope (Maximum) (H:V)	1:1	
	Top Elevation	772.25	
	Bottom Elevation	762	
Basin #: 2 Spillway	Size/Type	8" PVC	
	Inlet Elevation	768	
	Outlet Protection	R3	
	Spillway Capacity (cubic feet/second)	0.5	
Basin #: 2 Storage Capacity	Length @ Bottom	200	
	Width @ Bottom	20	
	Length @ Spillway	224	
	Width @ Spillway	44	
	Volume @ Spillway	41000-2218 (FILTER)=38782	
	Sludge Cleanout Elevation	764	
Emergency Spillway	Type	broadcrested weir	
	Width (ft)	45’	
	Depth with 2’ of freeboard (ft)	3.58	
	Length (ft)	18	
	Sideslopes (H:V)	3:1	
	Crest Elevation	768.67	
	Slope	2%	
	Type of Lining/Protection	R4	
	Spillway Capacity (cfs)	231 (190 required)	

Will the treatment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☐ Yes ☒ No

If yes, specify the type of liner that will be used: _____

Note: If additional basins are necessary, please complete and attach an additional form.

TREATMENT POND CONSTRUCTION CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301
Engineer/Land Surveyor: _____ Structure ID #: Basin 2 NPDES Outfall ID #: 002

1. Has the facility been constructed at the location shown in the approved permit?	☐ Yes	☐ No	
2. Is the spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	
3. Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
4. Has the non-discharge alternative been constructed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
5. Was coal encountered during construction of the pond?	☐ Yes	☐ No	
6. If yes, was a liner used?	☐ Yes	☐ No	
7. Identify any conditions or deficiencies in the facility that need to be corrected.			☐ NA

_____
_____
_____

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	**Date of Inspection**	**Inspected By**

Supervising Professional Engineer/Registered Professional Land Surveyor _____
Address and phone _____
_____
_____

I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

_____
Signature of Registered Professional Engineer/Registered Professional Land Surveyor Date

SEAL

_____
Registration Number and Expiration Date

_____ _____
Signature of Permittee or Responsible Official Date Title

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SEDIMENT POND CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301

Engineer/Land Surveyor: Tim Gourley, PE Structure ID #: Sump 1 NPDES Outfall ID #: 003

Location (point of discharge): Latitude (DMS): 41 58 10.3 Longitude (DMS): 76 32 52.4

Drainage Area: 5.3 acres Design Storm: 25 year / 24 hour Rainfall Amount: 4.2 inches

Average Watershed Slope: 2 Land Use: SUPPORT Soil Type: N/A Curve Number: 89

Peak Discharge: 24 cubic feet/second NPDES Average Flow: --- mgd NPDES Design Flow: --- mgd

		Permit Application	***As Constructed***
Embankment	Top Width (Minimum)	5'	
	Outside Slope (Maximum) (H:V)	---	
	Inside Slope (Maximum) (H:V)	---	
	Top Elevation	761	
	Bottom Elevation	754	
	Upstream Toe Elevation	n/a	
	Downstream Toe Elevation	n/a	
	Type of Cover	vegetation	
	Incised Slope (if any)	YES	
	Inside Slope (Maximum) (H:V)	2:1	
	Top Elevation	761	
	Bottom Elevation	754	
Principal Spillway	Type	none	
	Conduit Diameter (if barrel/riser give both)		
	Inlet Elevation		
	Outlet Protection		
	Spillway Capacity (cubic feet/second)		
Dewatering Device	Type/Size	infiltration	
	Inlet Elevation	754	
	Discharge Regulation (self-draining or valved)	---	
	Discharge Capacity (cubic feet/second)	0.4 cfs	
	Time to Dewater Full Pond	2 days	
Emergency Spillway	Type	broadcrested weir	
	Width	30'	
	Depth (with 2 feet of freeboard)	---	
	Length	---	
	Sideslopes (H:V)	---	
	Crest Elevation	760	
	Slope	0%	
	Type of Lining/Protection	vegetation	
	Spillway Capacity (provide design calculations)	29.7 (24 required)	
Storage Capacity	Length @ Bottom	200	
	Width @ Bottom	20	
	Length @ Dewatering Device	---	
	Width @ Dewatering Device	---	
	Volume @ Dewatering Device	---	
	Length @ Principal Spillway	---	
	Width @ Principal Spillway	---	
	Volume @ Principal Spillway	---	
	Length @ Crest of Emergency Spillway	224	
	Width @ Crest of Emergency Spillway	44	
	Volume @ Crest of Emergency Spillway	41568	

Will the sediment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☒ Yes ☐ No

If yes, specify the type of liner that will be used: NONE

SEDIMENT POND CONSTRUCTION CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301

Engineer/Land Surveyor: _____ Structure ID #: Sump 1 NPDES Outfall ID #: 003

1.	Has the facility been constructed at the location shown in the approved permit?	☐ Yes	☐ No	
2.	Is the emergency spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	
3.	Is the principal spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	☐ NA
4.	Is the dewatering device constructed at the location shown in the approved plan?	☐ Yes	☐ No	
5.	Are the collection channel inlets constructed at the location shown in the approved plan?	☐ Yes	☐ No	
6.	Do the collection channel inlets have adequate inlet protection?	☐ Yes	☐ No	
7.	Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
8.	Has the non-discharge alternative been constructed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
9.	Was coal encountered during construction of the pond?	☐ Yes	☐ No	
10.	If yes, was a liner used?	☐ Yes	☐ No	
11.	Identify any conditions or deficiencies in the facility that need to be corrected.			☐ NA

_____

_____

_____

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	**Date of Inspection**	**Inspected By**

Supervising Professional Engineer/Registered Professional Land Surveyor _____

Address and phone _____

_____

_____

I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

_____
Signature of Registered Professional Engineer/Registered Professional Land Surveyor Date

SEAL

_____
Registration Number and Expiration Date

_____ _____
Signature of Permittee or Responsible Official Date Title

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF MINING PROGRAMS

SEDIMENT POND CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301

Engineer/Land Surveyor: Tim Gourley, PE Structure ID #: Sump 2 NPDES Outfall ID #: 004

Location (point of discharge): Latitude (DMS): 41 58 07.2 Longitude (DMS): 76 32 48.0

Drainage Area: 3.4 acres Design Storm: 25 year / 24 hour Rainfall Amount: 4.2 inches

Average Watershed Slope: 2 Land Use: SUPPORT Soil Type: N/A Curve Number: 89

Peak Discharge: 24 cubic feet/second NPDES Average Flow: --- mgd NPDES Design Flow: --- mgd

		Permit Application	***As Constructed***
Embankment	Top Width (Minimum)	5'	
	Outside Slope (Maximum) (H:V)	---	
	Inside Slope (Maximum) (H:V)	---	
	Top Elevation	761	
	Bottom Elevation	754	
	Upstream Toe Elevation	n/a	
	Downstream Toe Elevation	n/a	
	Type of Cover	vegetation	
	Incised Slope (if any)	YES	
	Inside Slope (Maximum) (H:V)	2:1	
	Top Elevation	761	
	Bottom Elevation	754	
Principal Spillway	Type	none	
	Conduit Diameter (if barrel/riser give both)		
	Inlet Elevation		
	Outlet Protection		
	Spillway Capacity (cubic feet/second)		
Dewatering Device	Type/Size	infiltration	
	Inlet Elevation	754	
	Discharge Regulation (self-draining or valved)	---	
	Discharge Capacity (cubic feet/second)	0.4 cfs	
	Time to Dewater Full Pond	2 days	
Emergency Spillway	Type	broadcrested weir	
	Width	30'	
	Depth (with 2 feet of freeboard)	---	
	Length	---	
	Sideslopes (H:V)	---	
	Crest Elevation	760	
	Slope	0%	
	Type of Lining/Protection	vegetation	
	Spillway Capacity (provide design calculations)	29.7 (24 required)	
Storage Capacity	Length @ Bottom	200	
	Width @ Bottom	20	
	Length @ Dewatering Device	---	
	Width @ Dewatering Device	---	
	Volume @ Dewatering Device	---	
	Length @ Principal Spillway	---	
	Width @ Principal Spillway	---	
	Volume @ Principal Spillway	---	
	Length @ Crest of Emergency Spillway	224	
	Width @ Crest of Emergency Spillway	44	
	Volume @ Crest of Emergency Spillway	41568	

Will the sediment pond be constructed in previously disturbed, fractured, or unconsolidated material? ☒ Yes ☐ No

If yes, specify the type of liner that will be used: NONE

SEDIMENT POND CONSTRUCTION CERTIFICATION

Permittee: Bishop Bros Constr Co Inc Site Name: Minard Mine SMP No.: 08230301

Engineer/Land Surveyor: _____ Structure ID #: Sump 2 NPDES Outfall ID #: 004

1.	Has the facility been constructed at the location shown in the approved permit?	☐ Yes	☐ No	
2.	Is the emergency spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	
3.	Is the principal spillway constructed at the location shown in the approved plan?	☐ Yes	☐ No	☐ NA
4.	Is the dewatering device constructed at the location shown in the approved plan?	☐ Yes	☐ No	
5.	Are the collection channel inlets constructed at the location shown in the approved plan?	☐ Yes	☐ No	
6.	Do the collection channel inlets have adequate inlet protection?	☐ Yes	☐ No	
7.	Has the liner been installed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
8.	Has the non-discharge alternative been constructed in accordance with the approved plan?	☐ Yes	☐ No	☐ NA
9.	Was coal encountered during construction of the pond?	☐ Yes	☐ No	
10.	If yes, was a liner used?	☐ Yes	☐ No	
11.	Identify any conditions or deficiencies in the facility that need to be corrected.			☐ NA

_____

_____

_____

Stage of Construction (specify stage e.g. layout, impoundment/embankment construction, spillway/piping installation, non-discharge alternative construction)	**Date of Inspection**	**Inspected By**

Supervising Professional Engineer/Registered Professional Land Surveyor _____

Address and phone _____

_____

_____

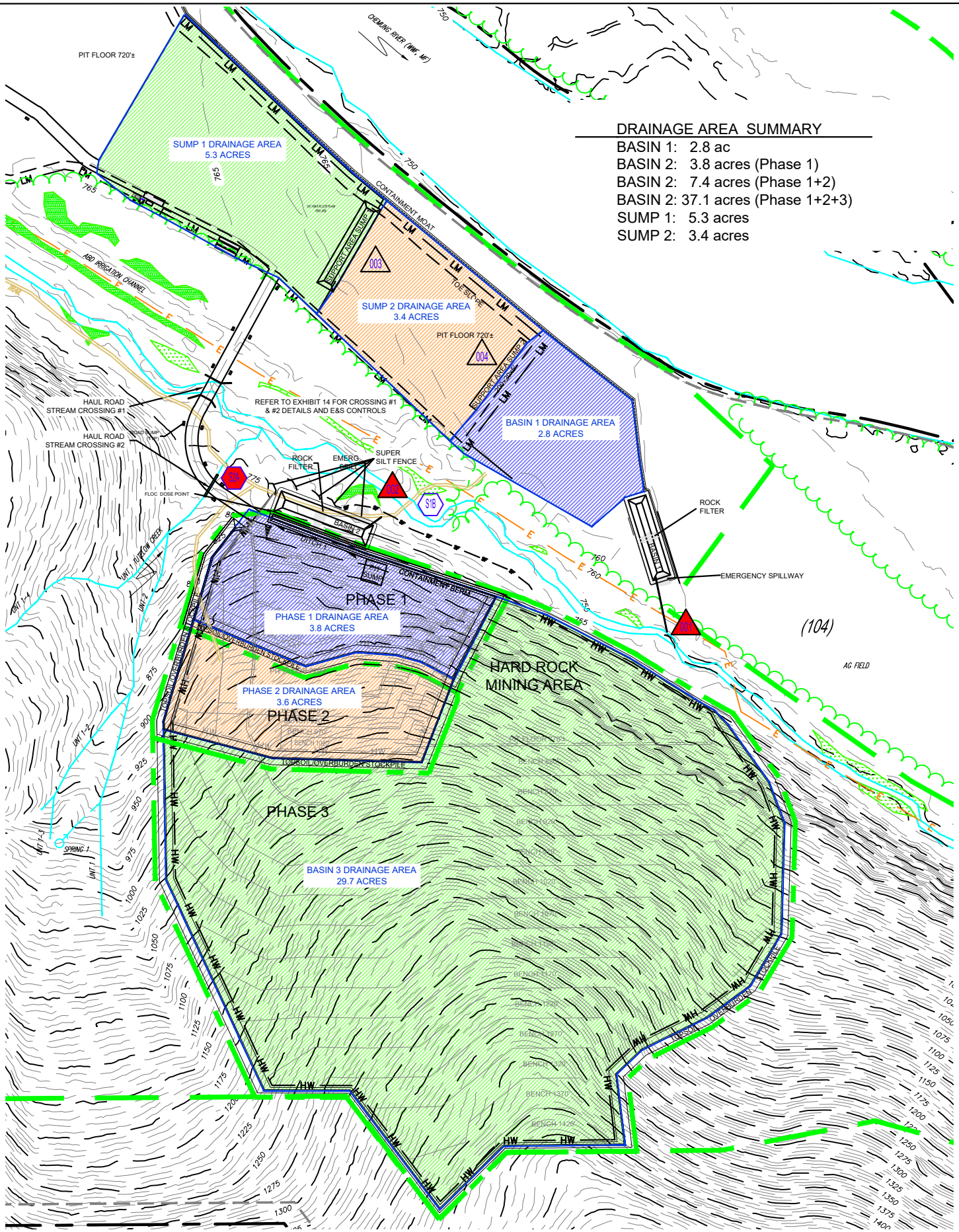
I certify in accordance with 25 Pa Code Section 77.531, 87.112, 89.101, or 90.112 that the above-mentioned structure is complete and has been constructed.

_____
Signature of Registered Professional Engineer/Registered Professional Land Surveyor Date

SEAL

_____
Registration Number and Expiration Date

_____ _____
Signature of Permittee or Responsible Official Date Title



Date: 05/05/23	PROJECT: Minard Mine Bishop Brothers Construction Co. Inc. Athens Township, Bradford County, Pennsylvania	**TRACT ENGINEERING, PLLC** 120 Ridge Avenue State College, PA 16803 814 272 0301 www.TractLLC.com	PROJECT NO.: 20.0113 DRAWING NO.: Minard DRAWN BY: tsg 05/05/23 CHKD BY: TSG 02/26/24
Rev No: 2			
Sheet No: 1 of 1	TITLE: Exhibit 13.3: Basin Drainage Areas		

REV.	DATE	BY	COMMENT
2	02/26/24	tsg	DEP TDL of 12/27/23
1	---	---	placeholder

Minard - REVISED 02/26/24

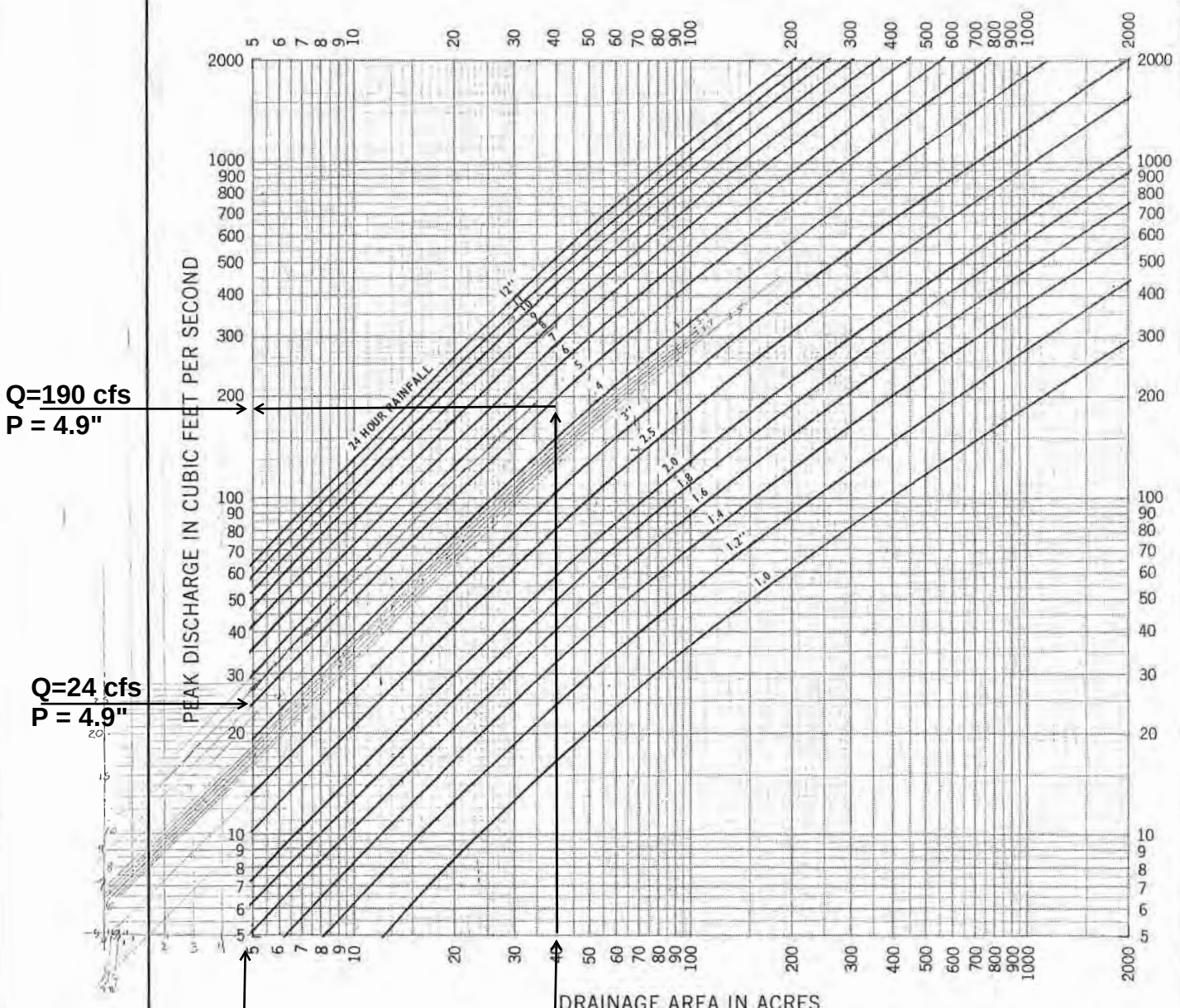
W:\BishopBros\Minard\Minard\Minard.dwg, 13-DrainageAreas, 2/21/2024 6:07:56 PM

PEAK RATES OF DISCHARGE FOR SMALL WATERSHEDS
TYPE II STORM DISTRIBUTION

2-75

SLOPES - STEEP
CURVE NUMBER - 90

24 HOUR RAINFALL FROM US WB TP-40



Q=190 cfs
P = 4.9"

Q=24 cfs
P = 4.9"

5 ac (min)

40 ac

Exhibit 2-10

25 YEAR PEAK RUNOFF
BASIN 1 = 24 cfs
BASIN 2 = 190 cfs
SUMP 1 = 24 cfs
SUMP 2 = 24 cfs

REFERENCE		
"Chapter 2, Engineering Field Manual for Conservation Practices"	U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ENGINEERING DIVISION - HYDROLOGY BRANCH	STANDARD DWG. NO. ES-1027 SHEET 21 OF 21 DATE 2-15-71

Weir Flow: **Q = C L H^1.5**

	C	L	H	Qs	Q max (25 yr)	Qs > Qmax
		ft	ft	cfs	cfs	
Basin 1	2.8	25	0.5	24.7	24	YES
Basin 2	2.8	45	1.5	231.5	190	YES
Sump 1	2.8	30	0.5	29.7	24	YES
Sump 2	2.8	30	0.5	29.7	24	YES

MASTERCAT 4239

GENERAL DESCRIPTION

MasterCat 4239, a liquid coagulant, is a highly effective treatment for wastewater clarification, clay, and color removal. This product can handle large swings in pH, temperature, alkalinity, organics, and solids loading. MasterCat 4239 achieves superior total suspended solids results while minimizing the dose.

MasterCat 4239 provides easy product handling by direct injection without the need for a makeup system. The resulting superior performance over traditional treatments translates into lower dosages, fewer deliveries, more effective storage, and potentially lowers overall treatment costs. If faster settling rates of suspended material are required, the MasterFloc series can be overlaid. In most cases, this is not required.

PRODUCT APPLICATION

MasterCat 4239 should be fed with a genuine MasterCat feed system. This feed system is supplied and serviced by your Process Masters representative as part of the treatment program as long as you are using Process Masters products. Feeding of MasterCat products should always be done in a manner that enables the best continuous distribution and mixing of the product. Your Process Masters representative will assist you with the proper product feed points and feed rate.

PHYSICAL DESCRIPTION

Form	Liquid	**pH**	4.0 - 4.4
Appearance	Yellowish	**Solubility in Water**	Complete
Odor	None	**Freeze Point**	20°F
Bulk Density	10.04 - 11.21 lbs./gal.	**Boiling Point**	230°F
Specific Gravity	1.33 - 1.35	**Vapor Pressure**	None

DOSAGE

Your Process Masters representative will run all the tests required to determine the optimum product and dosage for your application.

COMPATIBILITY

Compatible: FRP, PVC, HDPE, or Rubber

PACKAGING

55 gallon reusable drums, 275 gallon reusable totes, and 2,000-4,000 gallon bulk quantities.

FOR MORE INFORMATION

Please contact your local Process Masters representative.

Process Masters
Custom Process Solutions

940 Krumsville Road
Kutztown, PA 19530
(610) 683-5674
Processmasterscorp.com

1. Identification Of The Product

Product Name: **MasterCat 4239**

Company Identification: Process Masters Corporation
Kutztown, Pennsylvania. 19530
Emergency Phone Number: 610-683-5674

2. Hazards Identification

OSHA/HCS Status: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of the product.

Classification of the substance or mixture: No classified.

GHS label elements:
Signal word: No signal word.
Hazard statements: No known significant effects or critical hazards.

Precautionary statements:
Prevention: Not applicable.
Response: Not applicable.
Storage: Not applicable.
Disposal: Not applicable.

Hazards not otherwise classified: None known.

3. Composition and Information of Ingredients

Substance/mixture: Mixture

There are no 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.

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

4. First Aid Measures

Description of necessary first aid measures
Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. .
Skin contact: Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.
Ingestion: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable or breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects:

Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

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

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments: No specific treatments.
Protection of first aiders: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11).

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for surrounding fire.
Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: No specific fire or explosion hazard.
Hazardous thermal decomposition products: Decomposition products may include the following materials: Halogenated compounds; metal oxide/oxides.

Special protective actions for fire-fighters: No special protection is required.
Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel."
Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and Storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls / Personal Protection

Control parameters

Occupational exposure limits: None

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases, or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection:

- Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

9. Physical and Chemical Properties

Physical state:	Liquid	Lower and upper explosive (flammable) limits:	Not available
Color:	Colorless to light yellow	Vapor Pressure:	Not available
Odor:	None	Vapor Density:	1 [Air=1]
Odor threshold:	Not available	Relative Density:	1.33 to 1.35
pH:	4 - 5	Solubility:	Easily soluble in the following materials: cold water and hot water
Melting Point:	-7° C (19.4° F)	Solubility in Water:	Not available
Boiling Point:	110° C (230° F)	Partition coefficient: n-octanol/water	Not available
Flash Point:	Not applicable	Auto-ignition temperature:	Not available
Burning time:	Not applicable	Decomposition temperature:	Not available
Burning rate:	Not applicable	SADT:	Not available
Evaporation Rate:	Not available	Viscosity:	Not available
Flammability (solid,gas):	Not available		

10. Stability and Reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability: The product is stable.
Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid: No specific data.
Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials and metals.
Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological Information

Information on toxicological effects

Acute toxicity: There is no data available.
Irritation/Corrosion:
- Skin: There is no data available.
- Eyes: There is no data available.
- Respiratory: There is no data available.

Sensitization:
- Skin: There is no data available.
- Respiratory: There is no data available.

Mutagenicity: There is no data available.
Carcinogenicity: There is no data available.
Reproductive toxicity: There is no data available.
Teratogenicity: There is no data available.
Specific target organ toxicity (single exposure): There is no data available.
Specific target organ toxicity (repeated exposure): There is no data available.
Aspiration hazard: There is no data available.

Information on the likely routes of exposure: Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects:
Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics:
Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure:
Short term exposure:
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.
Long term exposure:
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.
Potential chronic health effects:
General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates: There is no data available.

12. Ecological Information

Toxicity

Product/ingredient name	Result	Species	Exposure
Product	Chronic EC 6999 mg/L Chronic LC50 3623 mg/L	Daphnia – Daphnia magna Fish – Fathead minnow	- -

Persistence and degradability: There is no data available.
Bioaccumulation potential: There is no data available.
Mobility in soil: Soil/water partition coefficient (Koc): -2.49
Other adverse effects: No known significant effects or critical hazards.

13. Disposal Considerations

Disposal Methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any byproducts should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the

requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transport 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	No.	Yes.	No.
Additional information	-	-	-

Special precautions for user: **Transport within user's premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

15. Regulatory Information

US Federal regulations:
TSCA 8(a) CDR Exempt/Partial exemption: Not determined.
United States Inventory (TSCA 8b): All components are listed or exempted.
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Not listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients: No products were found.
SARA 304 RQ: Not applicable.

SARA 311/312
Classification: Not applicable.
Composition/information on ingredients: No products were found.

State regulations:
Massachusetts - None of the components are listed.
New York - None of the components are listed.
New Jersey - None of the components are listed.
Pennsylvania - The following components are listed: Dialuminium Chloride Pentahydroxide
California Prop. 65: No products were found.

International regulations:
International lists: Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.

Korea inventory:	All components are listed or exempted.
Malaysia inventory (EHS Register):	Not determined.
New Zealand Inventory of Chemicals (NZloC):	All components are listed or exempted.
Philippines inventory (PICCS):	All components are listed or exempted.
Taiwan inventory (CSNN):	Not determined.

Chemical Weapons Convention List Schedule I Chemicals:	Not listed
Chemical Weapons Convention List Schedule II Chemicals:	Not listed
Chemical Weapons Convention List Schedule III Chemicals:	Not listed

16. Other Information

Key to abbreviations:

ATE =	Acute Toxicity Estimate
BCF =	Bioconcentration Factor
GHS =	Globally Harmonized System of Classification and labeling of Chemicals
IATA =	International Air Transport Association
IBC =	Intermediate bulk container
IMDG =	International Maritime Dangerous Goods
LogPow =	Logarithm of the octonal/water partition coefficient
MARPOL 73/78 =	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN =	United Nations

Module 14: Streams/Wetlands – Floodway Encroachments to Tutelow Creek & Chemung River [Chapter 105/§77.504/§77.523]

Note: The United States Army Corp of Engineers (Corps) authorizes a Pennsylvania State Programmatic General Permit – 4 (PASPGP-4) when there will be a discharge of dredged or fill materials, or the placement of both temporary and/or permanent structures, which individually or cumulatively result in impacts to 1.0 acre or less of waters including wetlands. Projects will be sent to the Corps as a Category III activity for review. The Commonwealth has issued 401 Water Quality Certification for projects eligible under PASPGP-4.

If there will be a discharge of dredged or fill materials, or the placement of both temporary and/or permanent structures, which individually or cumulatively result in impacts to more than 1.0 acre of waters including wetlands, or such activities are otherwise ineligible for a PASPGP-4, the Corps may require an individual permit in accordance with Section 404 of the Clean Water Act and separate 401 Water Quality Certification.

Stream/Wetland encroachments may also require authorization from the US Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. If this project requires a federal permit, you may be eligible for either PASPGP-4 authorization or you must file a separate application with the Corps. If you require a permit and are not eligible under the PASPGP-4 you must request a Section 401 Water Quality Certification from the Department using module 14A "Request for Federal Clean Water Act (CWA) Section 401 Certification for Mining Activities.".

Does this project require a permit from the Corps? ☐ Yes ☒ No

If no, explain why not. **The proposed encroachments do not place fill materials in a water or wetland.**

14.1 Mining Activities Within 100 Feet of a Stream/Stream Relocation/Channel Change

If the mining activities are proposed within 100 feet of an intermittent or perennial stream, including haul road crossings, or the relocation or channel change of an intermittent or perennial stream provide the following information: (**Note**: Variance request for these and the expansion of pits must be included in the proof of publication. A separate Module 14.1 should generally be completed for each proposed encroachment.)

a) Name and location of the stream; and location, length, and acreage disturbed by the proposed activities (Identify the location of the proposed activities on Exhibits 9 and 18);

Tutelow Creek is located within the SMP as shown on Exhibit 9 and 18.
Chemung River is located adjacent to the SMP as shown on Exhibit 9 and 18.
The floodway encroachment variance areas are detailed on Exhibit 14.1.

NORTHWEST FLOODWAY VARIANCE AREA
The disturbance is approximately 410,000 SF (9.4 acres) for the northwest floodway encroachment to Tutelow Creek. The area is not a uniform shape. The overall dimensions of the disturbance area is: ~350' x ~1,910.

SOUTHEAST FLOODWAY VARIANCE AREA
The disturbance is approximately 385,000 SF (8.8 acres) for the southeast floodway encroachment at the confluence of Tutelow Creek and Chemung River. The area is not a uniform shape. The overall dimensions of the disturbance area is: ~400' x ~2,200.

b) A narrative giving a description and the purpose and justification of the proposed activities;

NORTHWEST FLOODWAY VARIANCE AREA
Mineral extraction will occur in the variance area of Tutelow Creek for Sand & Gravel Phase 2. Mineral extraction will not occur within 100' of Tutelow Creek. See detail 5 on Exhibit 10.2.

SOUTHEAST FLOODWAY VARIANCE AREA
Mineral extraction will occur in the variance area of Tutelow Creek and Chemung River for Sand & Gravel Phase 1. Mining support areas will be located within 100' of Tutelow Creek and Chemung River for the initial support area for the Hard Rock mining. Mineral extraction will not occur within 100' of Tutelow Creek or Chemung River. See detail 7 on Exhibit 10.2.

The encroachments are justified as the immediate stream channel buffer will be maintained and immediately stabilized where mining support activities are completed. Mining support areas will be utilized for activities such as overburden storage, product storage, and/or E&S controls.

c) A description of the character of the stream bed and banks, and a profile of the stream for a reasonable distance above and below the proposed site showing bed slopes, normal and flood water surfaces and a description of the riparian vegetation including a characterization of the resident aquatic community, a description of the riparian vegetation and an assessment of the probable hydrologic consequences of the proposed activities on the water quality and quantity and the resident aquatic community. Provide the name(s), address(es) and telephone number(s) of the individual(s) responsible for the collection and analysis of this data and provide a description of the methodologies used to collect and analyze the data;

Tutelow Creek flows from northwest to southeast through the southern portion of the SMP. The stream channel has a top of bank with of 30-40 wide and is 5-8 feet deep. Tutelow Creek has a 15-20' flow path, normal water depths vary from 4"-3'. The channel and surrounding topography is flat. Substrate within the stream consists of cobble, gravel, and sand. Benthic macroinvertebrates communities observed consist of caddis flies, mayflies, and stoneflies. The slope of the stream is approximately 2%. The riparian vegetation is dominated by red maple, yellow birch, black walnut, reed canary grass, American hornbeam, and rambler rose.

Chemung River flows south to north along the east side of the SMP. The stream channel has a top of bank with of ~300 feet wide and is 6-15 feet deep. The water surface has a ~250' flow path, normal water depths vary from 2-4'. The channel and surrounding topography is flat. Substrate within the stream consists of cobble, gravel, and sand. Benthic macroinvertebrates communities observed consist of caddis flies, mayflies, and stoneflies. The slope of the stream is approximately <1%. The riparian vegetation is dominated by red maple, yellow birch, hemlock stands, various oak species, American hornbeam, rambler rose, and garlic-mustard.

The proposed encroachments will not impact stream flow.

Mining of the sand and gravel across the valley floor will not occur within 100 feet of any stream. Despite portions of both Phase 1 and 2 mining areas being within the FEMA floodway, these flood prone areas are typically back flow channels where velocities are very low and the potential for erosion is minimal. Away from these back channels, a 15+ foot thickness of the sand and gravel deposit above normal groundwater elevation, and a minimum separation of 100 feet of vegetated, primarily forested, barrier area provides sufficient separation and stability between streams and the pits to ensure that stream migration into a pit would only be possible from a cataclysmic event that would alter the landscape of the entire valley.

d) A stream profile for the existing and proposed channel for a reasonable distance upstream, downstream and within the proposed change, showing bed slopes, pool-riffle ratios, normal and flood water surfaces, and existing obstructions;

A stream detail sheet has been provided showing the existing and proposed stream sections and profiles has been provided; see Exhibit 14, page 1 and details 5 and 7 on Exhibit 10.2.

e) A hydrologic and hydraulic analysis which shall include:
1. data on size, shape and characteristics of the watershed;
2. the size and frequency of the design storm;
3. the hydraulic capacity of any structures or replacement channel;
4. the hydraulic capacity of the channel upstream and downstream of the structure or the relocation/channel change;

N/A – no impacts by the encroachment

f) Where a bridge, culvert or other water obstruction is proposed, provide the following information:
(Note: General Permit (BMR-GP-102) is available for construction of access roads.)

1) Plans and details showing the location, type, size, and height of the structure;

N/A

2) A narrative description of the construction methods and sequence including water handling during construction, and erosion and sedimentation controls;

N/A

3) Indicate if the structure will be temporary or permanent (include plans for removal of temporary structures).

N/A

g) For a Channel Change or Stream Relocation:

A detailed plan and cross-sections of the existing and proposed channel upstream, downstream and within the proposed channel change showing the limits and configuration of the proposed activities, dimensions, channel linings, and normal and flood water surfaces;

A description of the construction methods and sequence including: water handling during construction, erosion and sedimentation controls, and measures to be taken to prevent adverse impacts to water quality and quantity, water users and the aquatic communities.

N/A

h) A characterization of the existing water quality and quantity of the stream including downstream water uses, and 25 Pa Code Chapter 93 Protected Water Use Classification.

Table 14-3: Water Quality Data Summary for S1A (Tutelow Creek)

Date Sampled	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Sulfate mg/l	Suspended Solids mg/l
02/13/20	10 CFS	---	7.62	100	---	26.09	-20.50	0.34	<0.05	9.1	14
03/05/20	0	8.62	7.90	111	8.3	22.77	-11.46	0.22	<0.05	12.3	<5
04/10/20	0	8.89	7.77	119	7.1	33.96	-26.79	<0.10	<0.05	9.3	<5
05/22/20	4 CFS	---	7.57	127	---	44.03	-35.66	0.19	<0.05	8.9	<5
06/23/20	<1	7.62	7.80	430	24.7	219.19	-197.99	0.59	0.29	18.4	7
07/29/20	<1	7.91	7.92	428	28.5	219.65	-212.56	1.68	0.67	11.8	35
08/25/20	<1	7.94	7.91	399	26.9	191.10	-181.60	1.48	0.70	10.5	25
09/30/20	<1	6.95	7.50	353	18.7	165.48	-100.60	4.51	1.02	18.8	22

Table 14-4: Water Quality Data Summary for S5A (Chemung River)

Date Sampled	Flow (GPM) or Static Water Elevation	Field pH	Laboratory pH	Specific Conductance (micromhos) @ 25 C	Field Temperature C	Alkalinity mg/l	Acidity mg/l	Iron mg/l	Manganese mg/l	Sulfate mg/l	Suspended Solids mg/l
02/13/20	4760 CFS	---	7.93	262	---	59.31	-52.26	0.40	<0.05	17.3	58
03/05/20	9340 CFS	8.43	7.66	165	5.2	39.05	-32.76	3.05	0.12	16.6	86
04/10/20	3190 CFS	9.00	8.05	300	11.8	67.27	-56.93	0.65	<0.05	27.6	8
05/22/20	2550 CFS	---	7.77	344	---	78.71	-68.95	0.55	<0.05	19.1	<5
06/23/20	573 CFS	7.90	7.98	516	24.3	153.08	-144.40	0.14	<0.05	18.6	<5
07/29/20	276 CFS	8.12	8.17	657	28.0	163.82	-148.74	0.17	<0.05	20.2	6
08/25/20	205 CFS	7.99	8.13	728	26.8	194.06	-190.49	0.12	<0.05	16.9	7
09/30/20	263 CFS	7.53	8.11	748	17.8	189.03	-162.00	0.12	<0.05	23.9	8

14.2 Wetland Related Information

N/A

14.3 Wetland Impact Analysis/Assessment

N/A

14.4 Wetland Mitigation/Replacement

N/A

14.5 United States Army Corp of Engineers Permits

N/A

e) Describe the pre-mining environmental sound levels within the adjacent area during weekdays, night time, weekends, and holidays.

The pre-mining environmental sound levels are equivalent to a rural farm land setting with a four (4) lane limited access highway east of the site. Pre-mining sound levels are vary based upon traffic conditions during weekdays, night time, weekends, and holidays.

f) Has a noise study been conducted to characterize the pre-mining noise levels of the surrounding area and estimate the noise levels from the proposed mine operation? ☐ Yes ☒ No
If yes, submit that study.

g) Describe the measures (best management practices) that will be taken to mitigate noise and prevent noise from becoming a public nuisance.

The operation is located in a rural area with few dwellings immediately adjacent to the site.

The mining activities will be in a pit depressed below natural grade.

Evergreen trees will be planted along the north side of the site as detailed on Exhibit 9

Operations in unconfined areas will be minimized to the extent possible.

Noise will be controlled by the method of operations and the implementation of a berm around the site. Equipment used for the removal and transport of raw materials to the processing facility will be maintained in ways to reduce noise generation (ie mufflers). Excessive engine reving will be minimized, especially in areas of initial mineral recovery where the topography may be elevated above adjacent natural ground and sound is more likely to migrate outward from operations. The mining area will begin to self-absorb sound as mineral removal will create perimeter walls. Once the pit is established and the majority of pit area will be below the natural ground, machinery noise generated within these areas will be absorbed by the pit area itself and the berm around the working areas.

The processing equipment will be maintained to minimize unnecessary noise levels (ie loose belts, plates, screens). The processing facilities will relocate throughout the site to be near the mineral extraction area.

Because of the rural nature of the area and the remote location of the site, the noise pollution for this site will be very minimal. Additionally, hours of operation will be generally during daylight hours.

23.3 Permanent Cover.

Provide the following information for each seed mixture to be used for permanent cover: (Note: Key to Exhibit 18)

a)

Seed Mixture No.	Seed Mixture (Species)	Rate of Appl. 100% PLS* (lbs./acre)	Seeding Dates (Months)
Nurse Crop:			
	Spring oats	96	spring
or	Winter wheat	120	fall
1*	Birdsfoot Trefoil	5	April – May
	Timothy	5	August - October
	Little bluestem	3	
	Side-oats Grama	1	
	Black-eyed Susan	0.25	
	Lance-leaved coreopsis	0.25	
2*	White Dutch clover	5	April – May
	Crimson clover	10	August - October
	Birdsfoot Trefoil	3	
3*	Little bluestem	1	April – May
	Indiangrass	1	August - October
	Deertongue	1	
	Partridge pea	4	
	Showy tick trefoil	2	
	Common milkweed	0.5	
	Wild bergamot	0.5	
	Black-eyed Susan	0.5	
	New England Aster	0.5	
	Tall white beard-tongue	0.5	
4*	Ernst Seeds Item No. ERNMX-178 Riparian Buffer Mix	20	Year Round
5*	other approved seed mix		

*** Use Nurse Crop <u>with</u> Seed Mix 1, 2, 3, or 4.**
Seed Mixture (with Nurse Crop) shall have at least two (2) grasses and one (1) legume.

* PLS means pure live seed. PLS is the product of the percentage of pure seed times percentage germination divided by 100.

b) Use.

Nurse Crop <u>with</u> Mixture 1, 2, 3, or 4 as detailed on Exhibit 18.

c) Method(s) of seeding.

Broadcasting by hand or cyclone seeder or hydroseeder or drilling (as conditions permit).

d) How seedbed will be prepared for planting.

For reclamation areas, the soil will be scarified. Agricultural lime shall be applied at 6 tons per acre and 0.5 tons of 10-10-20 fertilizer or as determined by site specific soil testing*.

Application will be through the use of disc and/or harrow, or hydroseeder.

***PA DEP E&S Program Manual, Final, March 2012, 363-2134-008, Table 11.2**

e) Type(s) of mulch to be used and rate(s) of application.
Hay or straw at a rate of 2 ½ tons per acre.
Any prime farmland soil areas will be mulched with 3 tons/acre of straw or hay.
Grass hay or cereal straw mulch will be used at a rate of 3 tons/acre.

23.4 Woody Plants. For areas that will also be planted with woody plants, provide the following: (**Note**: Key to Exhibit 18)

a) Woody Plant Mixture No.	Woody Plant Species	No./ac.
1	Sweet (black) birch, gray birch, white pine red and white oak, black cherry, sugar maple and/or shagbark hickory river birch is alternative for riparian/wet areas	680 / ac

See 23.3 Permanent Cover – utilize a seed mixture to be used with these woody plants.

b) Method of planting.
The method of planting will either be by hand or mechanically. The trees will be planted with one of the Woody Plant Mixtures listed above, which will provide cover and aid in the prevention of erosion.

A minimum of four (4) species must be used.

No single tree species may occupy more than 50% of the areas reclaimed as forestland.

Utilize a Nurse Crop and Seed Mixture 4 for areas where trees are planted.

c) If the area is to be planted for wildlife habitat, identify the grouping and distribution of the plants.

n/a

23.5 Cropland. For areas that will be planted to crops (agronomic or horticultural), identify the crops to be grown and the management plans to achieve the crop yield standards. (**Note**: Key to Exhibit 18: Land Use and Reclamation Map)

N/A