

MODULE 20

Module 20: Postmining Land Use and Reclamation **[Section 7 NSMCRA/§§77.462/77.591/77.593]**

20.1 Proposed Postmining Land Use

For premining land use areas identify the postmining land use to which the land will be restored, how each land use is to be achieved and the necessary support activities which may be needed to achieve the land use. Identify the type of reclamation for each area (approximate original contour, terrace, water impoundment, etc.). (Key the postmining land use(s) to the "Land Use and Reclamation Map" Exhibit 18.)

The proposed postmining land use is an unmanaged water impoundment surrounded by forestland providing for wildlife habitat and access to water in the impoundment for fire suppression and emergency services (Hamiltonban Township Conditional Use Permit). The land will be restored to achieve and support the proposed use by reducing the highwalls and benches through a combination of drilling/blasting, and/or backfilling to achieve a slope at 35 degrees or flatter down to an elevation of at least 50 feet below the anticipated final water level within the impoundment. Non-inundated slopes will be final graded, covered with the stored overburden soils as the growing medium, and seeded/planted in accordance with Module 23. All pumping in the quarry pit will cease and groundwater will be allowed to inundate the pit in order to achieve the postmining land use. The area surrounding the impoundment will be planted to establish a forested area providing wildlife habitat.

An access road will be installed as part of the post-mining land use in accordance with the Conditional Use approval from Hamiltonban Township, as the water may be used for fire suppression, and adequate access for fire and emergency services is to be provided. A conceptual access road is depicted on Exhibit 18; however, the location and configuration of the road will depend on actual field conditions at the time of reclamation and is subject to change. A copy of the Hamiltonban Township Conditional Use Approval is attached to Module 1.

Results of the Groundwater Model Report indicate that the final projected static water level in the reclaimed pit will be at 1,020' above mean sea level (MSL).

The proposed reclamation contours and post-mining and surrounding land uses are depicted on the Exhibit 18 plans and cross-sections.

20.2 Approximate Original Contour

For postmining land use areas to be reclaimed to approximate original contour show that the reclaimed land will be capable of supporting the uses it was capable of supporting prior to mining or higher or better uses. Notes: A higher or better use is a post-mining land use where the economic value or nonmonetary benefit to the landowner or the community is greater than for the pre-mining land use. A highest or best use is where the economic value or nonmonetary benefit to the landowner or the community is maximized. If you are proposing an alternative to AOC, complete either section 20.3 or 20.4, as appropriate.

Not Applicable (N/A)

Are you proposing an alternative to AOC? No Yes

If Yes is checked fill out either section 20.3 or 20.4 as appropriate.

20.3 Alternative to Approximate Original Contour (AOC) Reclamation under Section 7 (c)(2)(ii) of NSMCRA/§ 77.593(1)

- a) Show that the alternative to AOC is likely to be achieved and that it poses no actual or potential threat to public health or safety, or of water diminution, interruption, contamination or pollution.

The proposed alternative to AOC consists of eliminating the highwalls by blasting down the benches to a slope at 35 degrees or less. Achievement of such slopes is likely, as the process is utilizing known and proven methods. The Exhibit 10.5 Cross-Sections depict the reclamation slope line traversing through the benches to create the final slope. By starting the reclamation sloping inside the operational buffer, adequate material will be available by blasting in order to achieve the reclamation slope. If actual field conditions dictate that a supplemental amount of backfill material is required to achieve the slopes, it will be available in existing stockpiles at adjacent permit areas. Grading the impoundment side slopes to 35 degrees or less to a depth of at least 50 feet below the final water elevation is consistent with the Pennsylvania Code Chapter 77 reclamation requirements to provide a safe egress from the water impoundment, anticipated to protect the public from any safety threat. The results of the groundwater model report prepared for the site indicate that a water impoundment is likely to be achieved. The success of the proposed reclamation on non-inundated side slopes and adjacent support areas is based on obtaining a quick growth of temporary grasses (annual ryegrass and small grain) to prevent loss of overburden soil by erosion before the permanent grasses and other natural vegetation (including trees planted under the proposed reforestation plan) is established, which is judged to be a reasonable expectation. As a further protective measurement, the appropriate erosion and sediment controls will remain until permanent vegetation is established.

SGI's reforestation plan for the side slopes and support areas is consistent with the Appalachian Regional Reforestation Initiative's Forestry Reclamation Approach (FRA) to encourage rapid succession and accelerate development of high quality post mining forests. The reforestation plan includes creating a suitable rooting medium for good tree growth that is comprised of the best available overburden soils, loosely grading the overburden to create a non-compacted growth medium, using ground covers that are compatible with growing trees, planting at least two types of trees (early-successional species for wildlife and soil stability and commercially valuable crop trees), and using proper tree planting techniques.

The reclamation planting plan was created to improve the forest habitat to conserve water, create improved opportunities for wildlife and human recreational uses, and reduce soil loss at the site. Tree planting and vegetative cover will be of sufficient number and proper placement to maintain water quality and reduce runoff velocity and volume. The reclamation planting plan uses native plants to enhance biodiversity and provide habitat for native animal species. Reclamation by reforestation and vegetation will aid in maintaining the quality of water that may be conveyed to the Toms Creek watershed by reducing the potential for sedimentation to downstream waters to prevent contamination or pollution.

The proposed reforested side slopes and support areas, as well as the existing riparian buffer ("maintained buffer") which will be left undisturbed throughout the entire mining and reclamation process, will provide natural protection to surrounding streams, preventing contamination or pollution. Water that accumulates in the impoundment subsequent to reclamation will be sourced from rainfall, snowmelt, and groundwater and is anticipated to be clean, as any precipitation draining to the pit will fall on vegetated slopes preventing erosion/sediment-laden water from entering the pit. Additionally, since the adjacent areas around the impoundment will be stabilized with vegetation to reduce the potential for erosion, no impacts to surrounding water quality are expected. Reclamation by reforestation and vegetation will maintain the water quality to the Toms Creek watershed by reducing the potential for sedimentation to downstream waters to maintain overall stream water quality.

According to the groundwater model report, during mining no substantial water quantity impacts would occur to the streams as a result of the simulated drawdown from the quarry. It is apparent that the connection between the groundwater and the streams is poor and the streams and majority of wetland areas are likely perched on the ground surface due to the low permeability of the underlying geologic material. Some connection exists due to fractures, but overall the connection is poor. However, there is a potential for water loss in Wetland D (a portion of which extends up the hillside) created by indirect impacts during mining as a result of both the reduction in the run-off area (watershed) and the predicted decrease in elevation of the water table (especially in the western edge of Wetland D) adjacent Wetland D caused by the dewatering of the proposed quarry. No indirect or direct effects to Wetlands A, B, C, and E due to hydrologic alteration are anticipated from the development of the proposed Northern Tract Quarry. The hydrologic sources to these wetlands are primarily associated with the surface water and seasonal groundwater interflow contributed from the Unnamed Tributary to Toms Creek. Portions of Wetland C are associated with seepage along the lower hillside slope adjacent the floodplain of the Unnamed Tributary to Toms Creek. In contrast to Wetland D, indirect impacts to the hillside groundwater seepage hydrology attributed to Wetland C are not anticipated due to the distance of the seepage from the proposed quarry pit, as well as, the location of the seepage at the toe of

hillside slope. The model estimates that no significant reduction in the stream flow would occur at the maximum pit floor elevation during mining. This surface water flow is also associated with the wetland areas and is the likely source of the majority of the water in the wetland areas (with the exception of a portion of Wetland D, as described above). Water losses from the wetlands as a result of the simulated quarry drawdown would not be a substantial percentage of the overall flow through these areas. Due to Wetland D's relatively small size and hydrologic contribution within the Toms Creek drainage basin, any resulting reduction in Wetland D from indirect hydrologic effects is expected to result in insignificant effects to the functions, values, and quality of the Toms Creek drainage basin. . Any reduction in groundwater contribution to surface flow would cease following reclamation as a result of ceasing pumping and allowing the quarry to fill with water. Therefore, no water diminution or interruption is anticipated as a result of the reclamation.

- b) Demonstrate that the proposed operation will be carried out over a substantial period of time; the ratio of the minerals proposed to be mined, relative to the volume of the overburden, is very large; and the overburden and other spoil material at the proposed permit area are insufficient to restore the area to AOC.

The mine life for the Northern Tract Quarry permit area is estimated to approach 25 to 50 years depending on market demand. It is estimated that the ratio of product to unusable material is approximately 1:1. Much of the mined material will be transported away from the site in the form of roofing granules, significantly reducing the amount of material available to backfill the quarry at reclamation. In addition, much of the overburden soils and crushing by-products (rock fines) and blasted cap rock from the Northern Tract Quarry permit area will be used to backfill the Pitts Quarry. There is very limited area adjacent the Northern Tract Quarry to facilitate stockpiling of overburden soils that could later be used for backfilling at reclamation, so material excavated from the Northern Tract Quarry will be placed in the abandoned portions of the Pitts Quarry as practical or placed in existing stockpiles within SGI's mine permits. Backfilling the Pitts Quarry as mining operations progress is an efficient method to incrementally reclaim an area adjacent to Northern Tract Quarry. Given that a significant portion of the rock material in the Northern Tract Quarry will be sold as product, and there are limited opportunities for stockpiling material to be used for reclamation at a later time, adequate quantities of materials will not exist to restore the Northern Tract Quarry area to AOC.

- c) Show that the alternative to AOC reclamation is consistent with applicable land use policies, plans and programs and with Federal, State and Local law.

The alternative to AOC reclamation is consistent with applicable land use policies, plans and programs and with Federal, State, and Local Law. Noncoal mining in Pennsylvania is regulated under Chapter 77 of the Pennsylvania Code Title 25: Environmental Protection. The alternative to AOC reclamation proposed by SGI is consistent with these regulations. According to Chapter 77, a water impoundment with final slopes equal to or less than 35 degrees graded to 50 feet below the final water elevation is an acceptable reclamation alternative to AOC (See Chapter 77.594). The slope is to serve as a safety bench for safe exit from the impoundment according to the regulations.

SGI has obtained a Conditional Use Approval for mining from Hamiltonban Township pursuant to the Township's Zoning Ordinance. Condition No. 9 of the approval (see copy of the Conditional Use Approval attached to Module 1) states the following: "At any time in the future should mining operations cease on the Northern Tract Quarry, a Reclamation Plan shall be filed with the Township. Said plan shall comply with all stormwater regulations, follow soil and erosion measures and be subject to approval by DEP in connection with issuance of a permit for a mining operation. The reclamation plan shall include the establishment of a wildlife habitat area. If a water reservoir is created, the water may be used for fire suppression and adequate access for fire and emergency services shall be provided." The proposed reclamation plan is consistent with the conditions indicated in the Township's Conditional Use Approval. Thus, the proposed reclamation plan is consistent with local land use policies, plans and programs.

- d) Demonstrate that the restored land will be capable of supporting the highest or best use it can reasonably support and that the proposed postmining land use is compatible with adjacent land uses.

As noted above, the Conditional Use Approval by Hamiltonban Township, issued under the Township's zoning ordinance, requires a post-mining reclamation use that provides wildlife habitat. Accordingly, the proposed reclamation plan provides for the highest and best use contemplated by the Township's zoning approval. The affected land will be restored to an unmanaged water impoundment surrounded by forestland (the pre-mining land use) which will support fish and wildlife habitat. The water impoundment, which does not require a specific management plan after reclamation and revegetation have been accomplished, could provide opportunities for a variety of potential uses. These uses could include recreational opportunities (fishing, boating, etc.), fish and wildlife habitat, or storing water for beneficial uses, such as stockponds, irrigation, fire protection, flood control and water supply. The forestland will provide for production, protection and management of wildlife species, watershed protection, and site stabilization. Prior to mining, the site (forestland) was also primarily used for wildlife habitat, watershed protection, and site stabilization. The

proposed post-mining land use for the non-inundated slopes and support areas is consistent with Appalachian Regional Reforestation Initiative's Forestry Reclamation Approach (FRA) to encourage rapid succession and accelerate development of high quality post mining forests in the manner described above.

The reclamation planting plan was created to improve the forest habitat to conserve water, create improved opportunities for wildlife and human recreational uses, and reduce soil loss at the site. Tree planting and vegetative cover will be of sufficient number and proper placement to improve water quality and reduce runoff velocity and volume. The reclamation planting plan uses native plants to enhance biodiversity and habitat for native animal species. Reclamation by reforestation and vegetation will maintain the water quality to the Toms Creek watershed by reducing the potential for erosion and stormwater runoff impacts to downstream waters.

The Northern Tract Quarry permit area is surrounded predominantly by forestland to the north, east, and west, including land owned by the Pennsylvania Department of Conservation and Natural Resources (DCNR). Existing quarry facilities are located to the south. Other surrounding land uses include a pond to the northeast, scattered residencies, and agricultural fields (located further east of the permit area). Streams also border the property to the north, east, and west. The majority of these surrounding areas are used for fish and wildlife habitat. The proposed post-mining land use of an unmanaged water impoundment surrounded by forestland (fish and wildlife habitat) will therefore be consistent with adjacent land uses.

20.4 Alternative to Approximate Original Contour (AOC) Reclamation under Section 7 (c)(2)(iii) of NSMCRA/§ 77.593(2)

- a) Show that the alternative to AOC is likely to be achieved and that it poses no actual or potential threat to public health or safety, or of water diminution, interruption, contamination or pollution.
- b) Demonstrate that the proposed alternative to AOC will leave no highwalls, will improve the watershed of the area, and that the landowner has approved the alternative to AOC. (Submit a notarized statement by the landowner approving the alternative to AOC.)
- c) Demonstrate that the affected land will be restored to a condition capable of supporting the uses it was capable of supporting prior to mining or to a higher or better use.