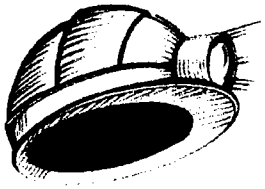

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MOMBACCUS EXCAVATING, INC.
BLUESTONE MINE

Amanda Drive
Town of Rochester, Ulster County, New York

MINED LAND-USE PLAN (SITE PLAN)

FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AND
THE TOWN OF ROCHESTER

September 2006

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MINED LAND-USE PLAN (SITE PLAN)
FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AND THE TOWN OF ROCHESTER

Respectfully submitted by: Mr. Keith Kortright, President
Mombaccus Excavating, Inc.

Prepared by: Griggs-Lang Consulting Geologists, Inc.

John M. Orza, Geologist

Paul H. Griggs, Principal Geologist

Date: September 8, 2006

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1.0 INTRODUCTION

The following report for Mombaccus Excavating, Inc. of Kerhonkson, New York is submitted as required by the New York State Mined Land Reclamation Law and rules and regulations promulgated thereunder. This report is also submitted as part of the applicant's request for a special use permit from the Town of Rochester and includes the requirements for Site Plan Review as designated in Section 140-49 of the Town's zoning code.

The report covers the planned Bluestone Mine located in the Town of Rochester, Ulster County, New York. The site is located at the end of Amanda Drive (private road owned by the applicant) off Rogue Harbor Road, as shown on the Location Map in the Appendix.

The report consists of a Mining Plan describing the existing site, how the mine will be worked and measures to mitigate potential environmental impacts, a Reclamation Plan describing how the mine will be reclaimed and an Appendix containing a completed Environmental Assessment Form (Part 1), a Location Map, a Mining Plan (Site Plan) Map (showing adjacent parcels, existing conditions and near future planned improvements) with soils and slopes inlay, a Reclamation Plan Map (showing the condition of the site upon completion of reclamation), Typical Sections (showing existing and proposed topography), a Viewshed Map (showing potential zones of visibility) and Line-of-Sight Cross Sections.

2.0 PROPOSED PROJECT

2.1 Applicant

The applicant, Mombaccus Excavating, Inc. (Mombaccus), is a local, family owned company established in 1987. The family has owned and mined other properties in the area and has been providing high quality construction materials locally since the early 1960's. Mombaccus has removed aggregates on this same homestead parcel as part of past developments of this property including the construction of ponds. Mombaccus supplies the growing need for construction aggregates for use in residential, commercial and industrial construction and maintenance. The materials produced at the sites have been used in the construction of most of the homes and driveways in the area. Mombaccus and its related companies employ about 12 people.

2.2 Project Need

Construction materials, such as crushed stone and sand and gravel, are a necessity of modern life. These materials are used on a daily basis in every walk of life all across the United States in roads,

bridges, buildings, drainage courses and slope stabilization, landfills, construction projects, homes, commercial and residential developments. Construction materials make it possible to have safe roads and bridges, homes and comfortable offices, hospitals and stores. Each year 9,942 pounds of crushed stone and sand and gravel are produced for each person in New York State[1].

According to the Mineral Information Institute, every American born will need 1.71 million pounds of stone, sand and gravel in their lifetime.

The foremost necessities of the mining industry are:

- Mines must be sited where the raw material is found in sufficient quantity and quality to provide a viable source.
- Construction materials are high tonnage, low unit cost products.
- Local sources of construction materials require less transportation. Less transportation means less wear and tear on the highways, less environmental impact to areas along trucking routes and less cost to the end user.

Acute shortages of construction materials exist locally, particularly in downstate New York, and Ulster County. Potential sources must compete against residential/commercial development and restrictive zoning. The natural resources in the state must be identified, evaluated and protected in order to sustain economic growth and to maintain and improve existing infrastructure.

Mining companies such as Mombaccus are attempting to meet the ongoing market demand generated by every person that uses roads, bridges, sidewalks, driveways, homes, buildings, hospitals, malls, landfills and other similar conveniences of modern life.

2.3 Overview of Project Design

Keith and Gary Kortright have built their homes in the southern area of the homestead parcel. Keith now wants to build a new home in the northern area of the homestead parcel. At present, the topography in the proposed area for Keith's new home is not conducive to home construction. In order to construct a home, it must be re-graded to the design of the reclamation plan.

[1] Source: United States Geologic Survey (Year 2002 production by State and Commodity) and New York State (estimated July 1, 2002 population from the Population Division, U.S. Census Bureau released December 22, 2004).

The area of the planned Bluestone Mine is rural in nature and contains very few homes. The closest residents are the applicants' homes and one of their employees.

The site is zoned "R-1" according to the Town of Rochester Zoning Map. Mining is a permitted use under the Town of Rochester zoning code by Special Use Permit.

This application is for the grading of a parcel for development of a single family residence that has a mining component to it. Since removal of over twenty vertical feet of consolidated stone over a multi-year period is necessary to accomplish this, a State permit to mine the parcel is required. In order to meet the requirements for State and Town approval, the applicant purposely designed the mine to be low intensity and minimize the impact on the surrounding community. The major design factors to accomplish these goals are outlined below and described in more detail throughout the report:

- *Limited hours of operation*—Mombaccus has voluntarily agreed to limit hours of operation to 7 a.m. to 5 p.m., Monday through Friday. No mining will occur on weekends or legal holidays.
- *Increased Setbacks*—The New York State legislature gave sole authority to regulate mining, including setbacks, to NYSDEC. NYSDEC requires a setback of at least 25 feet from all property lines, rights-of-way and easements. Mombaccus has voluntarily agreed to increase the setbacks from all of the adjacent properties as appropriate to contain potential impacts. In addition, the mining limits are situated such that there are only three residences within 2,300 feet of any excavation area. The three residences consist of the applicants' homes and one of their employees. Only three additional residences are within one-half mile of any excavation area. The increased setbacks and surrounding residences are shown on the Mining and Reclamation Plan Maps.
- *No Processing*—Many mine operations include processing plants that crush, screen and wash the sand and gravel into products suitable for sale. Mombaccus has voluntarily agreed that no processing will be done at the planned Bluestone Mine. This reduces the intensity of the operation by reducing the amount of equipment that will operate at the mine, thereby reducing potential impacts.
- *No Sale to Drive-up Customers*—Almost all mines in New York sell to drive-up customers. By voluntarily agreeing not to do so, Mombaccus has effectively controlled the number and amount of trucks that will haul material from the site. The truck drivers hauling material from the site will follow the same truck route, will quickly become

familiar with the route and will haul on a regular schedule. This practice greatly contributes to Mombaccus' ability to limit the hours of operation. Additionally, since there are no sales to drive-up customers, no signage will be needed.

- *Limited truck trips*—Since the method of extraction is a slow process, there will be very few truck trips in a given day. There will likely be frequent days when no material will be hauled off-site.
- *Limited Equipment*—Typically, the only equipment operating at the mine will be a mechanical hammer to break the rock, an excavator with a ripper bucket will rip and peel back rock and one front end loader loading approximately four trucks each hour (a maximum of 40 truck trips over a ten hour day). Typically, only one truck will be on the property at any time.

3.0 MINING PLAN

3.1 Mining Site

The proposed mine site is located entirely on lands owned by Mombaccus Estates, Ltd., an afilliate of Mombaccus Excavating, Inc. The life of mine area consists of an approximately 7.5+/- acre excavation area and an access road of approximately 2+/- acres for a total of 9.5+/- acres.

Mombaccus Estates, Ltd and the Kortright family, owns several parcels in the vicinity of the planned mining site. The parcels together make up the homestead parcel. A few of the parcels to the south have been sold off. The property lines of the applicant and surrounding properties are shown on the Mining Plan Map. Construction aggregates have been removed from several of these parcels for development purposes, including the construction of ponds. The property lines of the applicant shown have been overlaid from a survey map (referenced in the titleblock), while the surrounding property lines are taken from the appropriate tax maps from the Towns of Rochester and Wawarsing. The names and lot numbers of the adjoining property owners are shown on the Mining Plan Map.

The mining site encompasses a portion of a small bedrock ridge that trends roughly southwest-northeast. The bedrock to be mined is made up of a feldspathic and quartz sandstone commonly referred to as "bluestone," interbedded with thin layers of shaly partings.

The topography in and around the mine site ranges from gentle to steep slopes and near vertical bedrock outcrops. Due to the varying topography and reclamation objective, the area to be developed must be graded to a relatively flat area. The topography shown on the Mining and

Reclamation Plan Maps is derived from a combination of the Kerhonkson, NY 7.5' USGS digital elevation model and site specific topographical survey.

The mining site consists of and is bounded on all sides by wooded lands and bedrock outcrop. The wooded lands are made up of a mix of deciduous and evergreen mature trees as well as younger trees and some dense undergrowth. Areas on top of the ridge generally contain smaller trees and light undergrowth. Extensive wooded lands exist for distances well over a mile to the northwest, west and southwest and over a half mile to the north, south and east. Only wooded lands within the life of mine area will be removed for mining.

The majority of the adjacent parcels are land locked with no residences on them. The mine site is situated such that there are only three residences within 2,300 feet of the main excavation area with the nearest residence being more than 1,550 feet away. These three residences consist of the applicants' homes and one of their employees. Only three additional residences are within one-half mile of the main excavation area.

Amanda Drive is a private road owned by the applicant.

About 9.5 acres will be mined over the life of the mine, as outlined in red on the Mining Plan Map and Reclamation Plan Map in the Appendix.

3.2 Water Resources

3.2.1 Water Table

A small, groundwater fed pond that was previously created by mining, exists on the parcel of land (owned by the applicant) to the south of the life of mine area, just west of the base of the entrance road. The water surface was measured at an elevation of 789 feet amsl, more than 175 feet above the proposed lower limit of excavation. There are no seeps or springs within the proposed life of mine area or in the steep slopes above the proposed final floor adjacent to the life of mine area. The water table is not expected to be encountered during mining.

3.2.2 Drainage

There are no intermittent or perennial drainages within the life of mine area.

3.2.3 Wetlands

3.2.3.1 NYSDEC Wetland

There are no State regulated wetlands in or adjacent to the project site.

3.2.3.2 Federal Wetlands

The United States Army Corps of Engineers (ACOE) has jurisdiction over wetlands that are smaller than those regulated by NYSDEC. A mapped federal wetland exists to the south and west of the life of mine area. The location and ACOE code for this wetland is shown on the Mining and Reclamation Plan Maps.

The ACOE regulates activities in the wetlands but does not require a setback from the wetland. No mining activities are proposed in or adjacent to this wetland. No runoff from mined areas to the wetland will occur and no significant impacts to the wetland due to the mine will occur.

3.3 Bedrock

The bedrock at the site is at or near the surface and outcrops in many locations within the parcel to be mined. The bedrock in this area consists of thin beds of feldspathic and quartz sandstone with some interbedded layers of very thin shaly partings.

3.4 Soils

The life of mine area is overlain primarily by the Arnot-Lordstown-Rock outcrop complex, moderately steep (ARD). The unit is made up of about 35 percent Arnot very bouldery silt loam and very bouldery loam; 30 percent Lordstown very bouldery silt loam and very bouldery loam; 20 percent rock outcrop; and 15 percent other soils. The Arnot soils are shallow, somewhat excessively drained and moderately well drained; and the Lordstown soils are moderately deep and well drained. These very bouldery soils formed in glacial till. The relief is dependant upon bedrock but generally has a stair-step appearance with overall slopes ranging from 15 to 25 percent. Permeability is moderate in both soils and runoff is very rapid.

In wooded areas, such as what exists at and around the project site, the typical Arnot soil profile consists of two inches of very dark grayish brown very bouldery silt loam, overlying about 14 inches of yellowish brown, friable, very channery loam subsoil. The typical Lordstown profile consists of a dark brown, very bouldery silt loam surface layer four inches thick overlying 32 inches of yellowish brown, friable subsoil.

The Arnot-Lordstown-Rock outcrop complex comprises about 87% of the life of mine area.

About 9% of the site of the site (predominantly the entrance road) consists of the Lordstown-Arnot-Rock outcrop complex (LOC), which is as described above with very minor variation with the

Lordstown comprising about 40 percent; the Arnot 30 percent; and 15 percent each of rock outcrop and other soils.

The remaining 4% of the site (predominantly the entrance road) consists of the Arnot-Oquaga-Rock outcrop complex, very steep (ARF) and the Scriba and Morris very bouldery soils, gently sloping (SEB). The ARF unit is made up of about 40 percent Arnot very bouldery silt loam; 30 percent Oquaga very bouldery silt loam; 20 percent rock outcrop; and 10 percent other soils. The Arnot soils are shallow, somewhat excessively drained and moderately well drained; and the Oquaga soils are moderately deep and well to excessively drained. These very bouldery soils formed in glacial till on hillsides valley sides and mountains. Slopes range from 35 to 70 percent. Permeability is moderate in both soils and runoff is very rapid.

Typically, the Arnot subsoil is directly under the forest litter and humus extending to a depth of 14 inches. It is friable, brown, very bouldery silt loam in the upper 3 inches and friable, brown, very channery silt loam in the lower 11 inches. The typical Oquaga profile in a wooded area consists of subsoil directly under the forest litter and humus extending to a depth of 26 inches. It is very friable, strong brown, very bouldery silt loam in the upper 5 inches and friable and very friable, yellowish red, very channery loam in the lower 21 inches.

The Scriba and Morris very bouldery soils, gently sloping (SEB) unit consists of deep, somewhat poorly drained soils formed in glacial till on glaciated uplands. They are found on broad flats and concave foot and toe slopes. Slopes range from 3 to 8 percent. These soils rarely occur together. Permeability is moderate above the fragipan in both soils, is slow in the fragipan and substratum of the Scriba soils and is slow or moderately slow in the in the fragipan and substratum of the Morris soils. Most areas of these soils receive runoff and seepage from upland areas.

The locations of the mapped soils are shown in the soils and slopes inlay on the Mining Plan Map in the Appendix.

3.5 Type of Mine and Mining Method

3.5.1 Type of Mine

The mine will be a surface consolidated sandstone mine.

3.5.2 Mining Method

The mine will be worked using hammering and ripping mechanical removal techniques. Salable lumber will be selectively removed. A bulldozer or equivalent will remove non-salable lumber and

brush. Overburden will be pushed into perimeter berms within the permit term area. Silt fences will be installed as necessary along the perimeter of the life of mine area or any other area deemed necessary. The perimeter berms and silt fencing will help maintain internal drainage until the faces and benches are established. Starting at the top, a mechanical hammer will break the rock vertically to create manageable size pieces. An excavator with a ripper bucket will then peel back the stone in the floor along planes of relative weakness in the stone. When material is to be hauled off-site, a front-end loader or the ripper bucket will be loaded into on-road trucks and hauled about 2.5 miles to Mombaccus Excavating, Inc. Mine (DEC ID#30578) on Rochester Center Road to be processed at their existing processing plant. The material from the Bluestone Mine will supplement the material at the Mombaccus Excavating, Inc. Mine (MEI) and enable Mombaccus to provide a wider range of products.

No increases in production, output or hours of operation or any changes in equipment or mining method are being proposed or implied for the MEI mine as a result of this application.

Stripping operations are a relatively minor part of the overall operation and will occur a few weeks per year when necessary. Active excavation and loading will occur on the mine floor throughout the construction season.

Parts of the life of mine area not in active excavation will remain wooded to optimize screening of the mine.

3.5.3 Setbacks

Increased setbacks have been incorporated into the mine plan. Setbacks from excavation areas range from over 660 feet to the north, over 1100 feet to the south, over 230 feet to the west and a 50-foot setback to the east. All setbacks exceed the state minimum of 25 feet. Mining will continue to the limits indicated on the Mining and Reclamation Plan Maps.

3.5.4 Disposition of Vegetation

Salable lumber will be selectively removed. Stumps and non-salable brush and lumber will be chipped and incorporated into final reclamation as mulch or hauled to a NYSDEC approved landfill. It will not be mixed with any soil storage piles or berms.

3.5.5 Soil Storage Areas and Berms

Very limited soil overburden exists at the site. The area to be mined is predominantly exposed bedrock or very thin soil and forest litter mixed with eroded bedrock sandstone from outcrops.

Most of the soil cover lies in between the two small ridges within the mine area. The soil in this area is about 10-24". However, a large portion of the total volume of soil is taken up with boulders found within it.

The existing overburden will be removed in advance of the mine face and stored in perimeter berms along the edges of the life of mine area as necessary in the general areas shown on the Mining Plan Map. All soils stripped from the Bluestone Mine will be saved on-site for use in final reclamation. These perimeter berms will be graded with side slopes not to exceed one vertical on two horizontal and vegetated to grasses and legumes as described in Section 4.2.2. Screening of the rocky soil may be necessary during reclamation to create the lawn of the home to be constructed here.

3.5.6 Lift Configuration

The bluestone will be mined as needed to create the proposed final grade. Consequently, lift configuration will vary slightly depending on the geology and topography. Typically, however, the stone will be worked in lifts up to 6 feet high. The top lift will be taken first with lifts working down into the rock as mining progresses. The horizontal bed formation with shale beds between the sandstone will help facilitate the mechanical breakage of the rock. The sandstone beds are generally 2" – 5" in thickness allowing this bedrock to break with relative ease. Varying topography may warrant operating faces slightly higher or lower. Final face heights, however, will be no higher than 9 feet.

3.5.7 Access/Truck Routes

Access to the mine will be from the end of Amanda Drive at the location shown on the Mining Plan Map. The entrance road will be approximately 15 feet wide and will follow the existing grade for the first roughly 400 feet. Some cut and fill will be required to create the stormwater control features (see the Proposed Entrance Road Profile and Typical Road Section on the Mining Plan Map). Cut and fill of the existing grade will then be needed to establish final grade of the entrance road up to an elevation of about 968 feet where it enters the mine proper. The entrance road will then be cut down to the operating and final floor elevation of about 966 feet. This will create a hump to keep the mine internally draining and prevent off-site sedimentation.

The entrance road will be graded to prevent runoff from the road onto Amanda Drive. Grading will promote drainage into a roadside ditch alongside the entrance road that will be built during construction of the entrance road. The ditch will follow the same grade as the road and will direct

any stormwater falling on the entrance road to a stormwater basin at the base of the hill. The stormwater run-off control features are discussed in detail in Section 3.6.2.1.

The grading of the entire proposed entrance road and associated features are shown on the Reclamation Plan Map.

A gate will be built across the entrance road at the end of Amanda Drive. This gate will control vehicle access to the site and will be locked when the mine is not in operation.

Trucks within the mine will travel on haul roads on the mine floor.

The access road shown on the Reclamation Plan Map will provide access to the site upon completion of mining and reclamation.

Material excavated from this mine will be hauled approximately 2.5 miles to Mombaccus' MEI Mine. A maximum of 30-40 round trip truck loads per day will be hauled when the MEI Mine is in full production. There will be frequent days when the surge piles are sufficient enough at the MEI Mine that no bluestone will need to be hauled.

Due to the limited nature of the mine, generally only one truck will be used to haul from the Bluestone Mine and back. The truck hauling from the mine will be primarily a trailer dump that has a capacity of about 33 tons. There will be no sales to drive-up customers from this mine.

The truck exiting Amanda Drive will turn left on Rogue Harbor road for a short distance then a right onto Cherrytown Road for approximately 1.4 miles to County Route 3. The truck will then head north on County Route 3 for one mile before turning right onto Rochester Center Road and travel about 1400 feet to the MEI Mine on the right. The proposed truck route is shown on the Location Map in the Appendix.

Truck entrance signs will be placed on Amanda Drive if required.

3.5.8 Hours of Operation

Mombaccus proposes a very limited operating schedule for the Bluestone Mine. Operating hours will be from 7 a.m. to 5:00 p.m. Monday through Friday. No mining will occur on weekends or legal holidays (New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving or Christmas Day). The typical operating season is from mid-March to the first or second week of December.

Most of the time, only about three employees will be on-site. These include the loader operator, a truck driver that is being loaded and a person working either the mechanical hammer or the ripper bucket excavator. Up to three additional employees may be working at the site during stripping operations, reclamation and site development.

The life of the operation is dependent on market demand and extraction rate but is expected to be 5 to 7 years.

3.5.9 Processing

No processing is proposed at this mine.

3.5.10 Sequence and Direction of Mining

3.5.10.1 Entrance Road

The first approximately 400 feet of the entrance road will roughly be at existing grade. Construction will consist of compacted crushed stone. Cut and fill of the existing grade will then be needed to establish final grade of the entrance road up to an elevation of about 968 feet where it enters the mine proper. At this point a small roughly 2-foot high hump will be created in order to keep the mine internally draining. Appropriate stormwater control measures to prevent off-site sedimentation will be employed during the construction of the entrance road, including but not limited to temporary silt fences and hay bales. All stormwater control features will meet or exceed NYSDEC approved standards for erosion and sediment control.

3.5.10.2 Initial Development

Once the entrance road is constructed, the first roughly 2 acres at the entrance of the mine proper will be opened and graded to establish an initial working floor and ramps up to the top of the ridge, as well as for the creation of the parking area and to store overburden. A total of 9.5 acres is expected to be affected for the permit term.

3.5.10.3 Direction of Mining

Once access to the top of the southern ridge is safely created, mining will continue southwest along the ridge progressing downward and outward until the southern ridge is approximately level to the northern ridge. This area is indicated by the direction of mining arrows labeled "1" on the Mining Plan Map. Once leveled, mining will progress in a generally northwest direction to access the northern ridge as indicated by the direction of mining arrows labeled "2." As mining limits are reached throughout the life of mine area, mining will continue downward until the final grade is achieved.

Typically, about a 3-6' bench will be established as mining progresses downward. By mining from the interior of the site downward and expanding outward, a "bowl" will be created by the 3-6' high benches which will promote and maintain internal drainage.

This sequence and direction of mining will also utilize the screening ability of the natural topography and wooded areas.

Reclamation will occur concurrently with mining in areas that are no longer needed for the safe and orderly operation of the mine.

3.5.11 Office

No office or any other building will be brought in or constructed at the mine site. Employee(s) will park at the approximate location shown on the Mining Plan Map.

3.6 Methods for Preventing Pollution and Soil Erosion

3.6.1 Dust and Noise Control

3.6.1.1 Dust

Excavation operations will be well screened from surrounding properties by the natural topography, mine faces, the remote location of the mine, permanent wooded areas and perimeter berms. The proposed directional mining maximizes the noise and dust control effects of these features. Almost all mining activity occurs on the mine floor, thereby maximizing the screening effect of the mine faces. Natural moisture content of the rock will help minimize dust during the excavation process.

There will be no processing of material and no material stockpiles at the site. The only loose material will be the mechanically broken rock at the toe of faces before it is loaded and hauled off site. All loaded trucks will be covered if they are loaded to within six inches of the top of the bed, as required by law.

Nearly all of the dust produced at this mine will be from vehicle traffic on haul roads. Due to the limited nature of the site, dust generation will be infrequent. Water will be drawn from the pond on the adjacent parcel or any available water in the stormwater pond to wet down haul roads as needed. In addition to controlling dust at the source, the following mitigation measures are incorporated into the plan and will be utilized at the site:

- Wooded buffers surround the site. Wooded areas within the life of mine area will be maintained until an area is to be mined. In addition, substantial wooded buffers surround the mine, the majority of which will remain throughout the life of the mine.
- Overburden is typically stripped during early winter and spring when soil conditions are not conducive for the generation of large amounts of dust.
- Stripped overburden is stored in berms and vegetated.
- The stone has a natural moisture content that helps bind finer grained particles together and minimize the generation of dust.
- No processing of material.
- No stockpiled material.
- Loaded trucks leaving the site will be covered as necessary, as required by law.
- The quarry will be worked as a hilltop pit. This design contains a central pit surrounded by perimeter quarry faces. Since the most activity occurs at the bottom of the faces, the overlying benches help screen the activity from the wind, reducing the wind velocity and reducing the potential for dust generation. The overlying benches also help contain any fugitive dust to the site.
- The site is remotely located from surrounding homes. The nearest off-site site home is over 1,400 feet from the proposed excavation area at its nearest point.
- Mined out areas will be reclaimed concurrently to reduce the amount of area that is unvegetated at one time to a minimum and thereby reduce wind erosion.

3.6.1.1 Noise

This mine will be a well-screened, low intensity operation. Typical excavation operations will be done with one front-end loader, mechanical hammer, excavator ripper, and only one truck at any one time. Typically only one employee will run the mechanical hammer and excavator ripper, therefore only one or the other will operating at any given time. Truck trips will generally be spread out throughout the workday on a regular schedule.

Stripping activities will be done by a bulldozer. Due to the limited amount of overburden and area to be stripped (about 7.5 acres), this activity will typically only take about one to two weeks out of the year, and likely for only two or three years.

All equipment will be kept in good working order with operating mufflers in good repair to help reduce noise levels.

Using the guidelines of the Department of Environmental Conservation's Assessing and Mitigating Noise Impacts program policy, sound level projection calculations were done for six of the nearest residences in various directions surrounding the mine site, including the nearest residence (Mombaccus employee) to determine potential noise impacts. The locations of these receptors are shown on the Mining Plan Map. Since there are no residences to the west for well over a mile, no projections were run in this direction.

In order to determine potential noise impacts using a worst-case scenario, the following steps were used in the analysis:

- Sound levels from equipment similar to those that will be in use at the Bluestone Quarry were added and combined into one source sound level.
- All equipment was assumed to be operating at the same place at the same time.
- The combined source sound level was then positioned at the closest point to each receptor at the mining limits.
- A value of 10 feet was added to the height above ground level for the combined source level, and six feet was added to the height of each receptor.
- A conservative value of 40 dBA was used for receptor ambient levels due to the rural/agricultural nature of the area.
- The combined source sound level was then projected to each receptor.
- Attenuation due to barriers, indoor transmission, and atmospheric absorption were not used in the projections. Only attenuation due to distance and wooded lands were used.
- The projected sound levels were then added logarithmically to the ambient to generate the projected new sound level for each receptor.
- The projected new sound level was then compared to the ambient levels to determine the potential increase in sound levels as a result of this proposal.

Table 1 on the following page is a summary of the recorded sound levels of equipment and their activity similar to those that will be used at the Bluestone Quarry.

Table 1

Equipment and activity when measured	Equipment Sound Level at 50' (L_{eq})
Loader loadout into idling Haul truck	81.5 dBA
Peterbilt trailer traveling along haul road loaded	70.0 dBA
Excavator loadout into idling Haul truck	76.0 dBA
Impact hammer hammering limestone	82.8 dBA
Combined Level (Source)	**85.8 dBA**

Adding the equipment sound pressure levels logarithmically, the combined source sound pressure level is 85.8 dBA. The combined source locations are shown on the Mining Plan Map.

According to the above referenced NYSDEC program policy and previous experience, typical ambient sound levels in rural farmland is about 45 dBA and wilderness areas are about 35 dBA. Therefore, a conservative value of 40 dBA was used for the ambient.

As mining progresses downward, the mine faces will provide a barrier. Also the topography surrounding the site provides a natural barrier for some receptors. However, since the mine faces will be short and change over time and in order to evaluate potential impacts in a worst-case scenario, **no** barrier attenuation was used in the calculations.

All receptors have a minimum of 1,400 feet of vegetation that will remain during and after mining is complete. A maximum vegetation attenuation of 10 dBA was used to be conservative.

Factoring in distance and vegetation attenuation the projected source sound pressure level at each receptor was determined. This was then added logarithmically to the ambient level (40 dBA) to determine the projected new sound pressure level at each receptor. This projected sound level is then compared to the ambient level in order to determine the potential increase in sound pressure levels.

Table 2 on the following page summarizes the figures used in the calculations. The calculation worksheets are included in the Appendix of this report.

Table 2

Receptor	Source (dBA)	Distance from Source (ft.)	Distance Attenuation (dBA)	Thickness of Vegetation (ft.)	Vegetation Attenuation (dBA)	Barrier Attenuation (dBA)	Projected Source Sound Level at Receptor (dBA)	Ambient (dBA)	Projected new sound level at Receptor (dBA)	Increase Over Ambient Sound Pressure Level
1	85.8	2,770	34.9	1,600	10	0	40.9	40	43.5	**+3.5**
2	85.8	2,320	33.3	2,200	10	0	42.5	40	44.4	**+4.4**
3	85.8	2,740	34.8	2,700	10	0	41.0	40	43.5	**+3.5**
4	85.8	2,440	33.8	2,400	10	0	42.0	40	44.1	**+4.1**
5	85.8	1,550	29.8	1,400	10	0	46.0	40	46.9	**+6.9**
6	85.8	3.950	38.0	2,900	10	0	37.8	40	42.1	**+2.1**

Using a worst-case scenario, the increased sound pressure levels to most receptors are below the 5 dBA threshold. Below is a copy of Table B – Human Reaction to Increases in Sound Pressure Level, taken from the New York State Department of Environmental Conservation's "Assessing and Mitigating Noise Impacts" guidance. The table summarizes general human reactions to increases in sound pressure levels.

Table B

HUMAN REACTION TO INCREASES IN SOUND PRESSURE LEVEL

Increase in Sound Pressure (dB)	Human Reaction
Under 5	Unnoticed to tolerable
5 - 10	Intrusive
10 - 15	Very noticeable
15 - 20	Objectionable
Over 20	Very objectionable to intolerable

(Down and Stocks - 1978)

The only receptor who would potentially see any significant increase in sound pressure levels would be Receptor 5. This receptor is the closest residence to the project site and is an employee of the applicant.

Since no barrier attenuation was used, and there are no receptors anywhere around the site with less than 1,400 feet of intervening vegetation, any potential receptor that is further away than any of those evaluated would see an increase in sound pressure levels less than those in the above table.

Based on the calculations presented above, the proposed mining will not have a significant noise impact to most of the surrounding properties using a conservative analysis. The operation will comply with widely accepted incremental increase guidelines such as outlined in the NYSDEC Noise Policy. The following aspects of the project design will be implemented to insure that any potential impacts are properly mitigated:

- Vegetation in the life of mine area will remain in place for as long as possible
- Equipment will be kept in good working order
- The mining sequence and the general direction of mining shown on the Mining Plan Map
- Haul roads will be laid out so that the occurrence of trucks backing up is minimized
- Limited hours of operation including no mining on weekends is proposed
- Berms will be built along the perimeter of the life of mine to assist in noise attenuation.

These represent some of the applicable Best Management Practices for reducing noise.

3.6.2 Potential Impacts to Surface Water

The contours on the Mining Plan Map illustrate the general directions of existing surface water drainage. Overall, runoff generally drains from the top of the hill in all directions in the vicinity of the life of mine area. Once excavation commences, drainage within the perimeter berms and active mine faces will be internal and off-site runoff from mined areas will not occur. Therefore, off-site erosion and sedimentation due to the planned mine cannot occur.

Overall, there will be a slight decrease in surface water and a corresponding increase in groundwater upon full build-out of the site.

No mining activities are proposed in or near ACOE wetland PF04/1E. Since the mine is internally draining, there is no potential that erosion and sedimentation due to the planned mine can impact this resource.

3.6.2.1 Stormwater Run-off Control

Off-site sedimentation from mining activities has the potential for impact to the surrounding environment. Because of this, Mombaccus has planned the excavation and ongoing operations at

the site accordingly. Perimeter berms and silt fencing will prevent off site run-off during the early stages of excavation. By mining from the interior of the site downward and expanding outward, the "bowl" will be created by the 3-6' high benches which will promote and maintain internal drainage. By creating a final floor below existing grade in all areas of the mine proper, the site will maintain internal drainage. Any stormwater falling within affected areas of the mine will either evaporate and/or slowly percolate into the fractured floor and enter the groundwater system. No off-site sedimentation can therefore occur.

Any overburden storage berms or piles will be immediately graded and seeded as described in Section 4.2.2 to prevent erosion.

Due to the design of the mine, the only area that could potentially produce run-off would be the entrance road. To prevent this, the following design features have been incorporated into the plan:

- The entrance to the mine proper will be graded such that an approximately two-foot high "hump" will be created in the area shown on the Mining and Reclamation Plan Maps. Any precipitation falling to the north and west of the hump will drain into the mine. This will also provide a barrier in which all precipitation falling within the mine will remain in the mine. Any precipitation falling to the south and east of the hump will drain into the roadside ditch as described below.
- Along the east and south sides of the entrance road, a two foot deep ditch will be created. This ditch will run at the same grade as the road, with side slopes graded to one vertical on two horizontal. The ditch will be vegetated as described in Section 4.2.2 as this is an excellent seeding mixture for erosion control and grassed waterways. The road will be graded to promote drainage into the ditch. The ditch will carry excess run-off into the stormwater basin at the base of the hill as shown on the Mining and Reclamation Plan Maps. The grading contours for the road, ditch and stormwater basin are shown on the Reclamation Plan Map as these features are to remain after the mine is fully reclaimed.
- The stormwater basin will be constructed to accommodate in excess of a 25-year, 24-hour storm event. It will be graded with side slopes of one vertical on two horizontal and vegetated as described in Section 4.2.2. Stormwater within the basin will slowly percolate into the groundwater system, evaporate, or be drawn for use in dust control along the entrance road. The basin will be inspected and maintained regularly to ensure adequate capacity volume.

During construction of the entrance road and associated stormwater run-off control features, silt fences or hay bales will be installed according to NYSDEC specifications to prevent sedimentation outside the limits of mining.

3.6.3 Potential Impacts to Groundwater

3.6.3.1 Quality

Mining, by itself, does not impact water quality. However, as with any activity, care should be taken than potential contaminants are not spilled or disposed of in a manner that would reduce the quality of the groundwater. The main potential sources of contamination are:

- Accidental leakage during fuel delivery.
- Accidental leakage from operating or parked equipment.
- Vandalism.

The applicant proposes the following measures to insure that groundwater quality is maintained.

- No hazardous wastes or toxic chemicals will be stored or disposed of at the site.
- Fueling will be done by delivery systems equipped with automatic shut-off valves.
- Fueling operations will be done with caution and attended at all times.
- The fuel delivery lines will be inspected each day the equipment is in operation and repairs made as needed to prevent leaks.
- Maintenance and repair will be done to insure equipment is kept in good working order.
- Extremely limited equipment will be used and stored at the site.
- The gate controlling access to the mine will be locked when the site is not operating.

In the unlikely event of a spill, the NYSDEC Spill Hotline will be contacted immediately and clean up done in accordance with their recommendations.

3.6.3.2 Quantity

The factors that control the amount of groundwater are:

- Precipitation (more rain means more water available to groundwater).
- Vegetation (less vegetation means more infiltration to groundwater).[2]
- Soil thickness above the water table (less thickness means more infiltration to groundwater).

[2] This is true when surface drainage remains internal, as proposed for this mine.