

Extraction and Progressive Rehabilitation Phases

1. A 10 Phase sequence of stripping, extraction and progressive rehabilitation operations will be followed. Logging/clearing operations will be co-ordinated with the extraction operations in each phase.
2. The maximum disturbed area (stripping of trees, stumps and topsoil, excavation, progressive rehabilitation plus the stockpiling and processing areas) will be limited to 63% of the total area to be extracted.
3. In all phases, progressive rehabilitation leading to final rehabilitation will follow the extraction operations from west to east and north to south and will occur in both extraction and processing areas.
4. The redistribution of unsaleable aggregate materials and overburden in extraction areas will begin in the progressive rehabilitation operations.
5. When extraction limits are reached the operator will backfill and construct slopes of waste aggregate and tree stumps against unexcavated material. All available topsoil will be used to augment the site materials. 2:1 slopes will be constructed. New slopes shall be seeded with a mixture of native grasses and trees to control erosion and dust.

Level 1 Hydrogeological Report Recommendations

- a. A surface and groundwater monitoring program will be instituted during quarry development. Measurements will be taken on a quarterly basis at the 4-on-site monitoring wells, in the 2 off-site wells and at surface monitoring stations. An annual report summarizing results and recommendations for additional or continued site monitoring will be prepared and submitted to the MNR and County.
- b. An annual hydrogeological site inspection will occur during the first three years of quarry operations to assess quarry runoff and drainage, and ensure that no impairment of surface waters occurs around the quarry area.
- c. Siltation and other environmental control measures will be installed to protect surface water resources, as directed by the MNR.
- d. Temporary monitoring wells will be installed in each extraction phase to verify the quarry floor design. Temporary monitoring wells will be measured initially on a monthly basis. After reviewing the first 12 months data, monitoring frequency will be evaluated and potentially reduced to quarterly events. All well data and the status of current and completed phases of quarry operation will be included in the annual monitoring report.
- e. When wells are no longer required they will be decommissioned as per Provincial Regulation (O. Reg 903).

Level 2 Natural Environment Report Recommendations

Vegetation

- a. Logging and clearing of vegetation will occur outside of peak breeding seasons for birds (May 1st to July 31st). Clearing should occur in phases. Minimal clearing and logging shall occur in upturning phases until additional aggregate is required. The operational phases and logging shall occur in upturning phases until additional aggregate is required. The operational phases and logging shall occur in upturning phases until additional aggregate is required.
- b. The progressive and final rehabilitation plans will be prepared and submitted to the MNR and County to minimize the area of disturbed tree cover at any point during the extraction sequence, thereby controlling erosion and dust.
- c. The progressive and final rehabilitation plans will be prepared and submitted to the MNR and County to minimize the area of disturbed tree cover at any point during the extraction sequence, thereby controlling erosion and dust. Reforestation should include the planting of mixed groups of tree and shrub species which are indigenous to the Bobcaygeon area.

Rehabilitation

- a. Native shrubs and trees will be planted in accumulations of non-compacted topsoil to form north-south and east-west zones of rehabilitation nodes on the quarry floor. Rehabilitation zones will connect to undisturbed setbacks and other areas outside of the extraction limits. Native tree species may include sugar maple, white ash, eastern white pine, white birch, eastern hemlock, red oak and red maple. Trees will be planted in mixed groups with a distribution of 20% coniferous and 80% deciduous plantations. Rehabilitation nodes of a minimum of 900 square metres per node will be created on the quarry floor and slopes. Organic materials like topsoil/overburden will be constructed to variable depths within the node with a thin soil apron to be constructed beyond the entire node for 15 metres.
- b. Portions of the quarry floor away from the nodes will be graded with dry aggregate to infill fissures and uneven surfaces. These areas will be seeded with native grasses suitable for the dry conditions in these areas.

Species at Risk - General

- a. A monitoring program to track mortality of snakes and turtles due to quarry traffic will be established.

Species at Risk - Specific

Blanding's Turtle

- a. Quarry staff will be trained in the identification, proper handling and relocating of turtles out of harms way, if found or around the quarry. Signs will be posted to identify possible presence of Blanding's Turtles on the site.
- b. If turtles are seen or in around the quarry, establish restrictive (soft) fencing to limit access to active excavation areas, in consultation with the MNR.
- c. The rehabilitation plan will include the construction of three sand pits at the northern end of extraction areas 1, 3 and 5. The sand pits will be approximately 60 cm in depth and cover an area of 3 metres by 3 metres. These will be associated with rehabilitation nodes. Five additional sand pits will be constructed west of the site in the "Undeveloped Area".

Eastern Hog-nose Snake and Milk Snake

- a. Stripping or excavating on ledges (escarpments) will not be conducted during the snake hibernation season (Oct. to April). Logging may occur.
- b. A biologist shall provide Species at Risk training to quarry staff and inspect the initial excavation area to be stripped and excavate prior to overburden removal. Staff to be labelled on Species at Risk that may be found in the site area and a contingency response plan established. The response plan may include the requirement for additional searches of the quarry during the hibernation season (April/May), Entrance season (Sept/Oct) or Hatching season (late Aug/Sept). If multiple sightings occur additional measures (restrictive fencing etc.) may be modified after consultation with the MNR.
- c. Trained quarry staff will conduct daily checks of rockpiles and the quarry floor during the snake's active season (April to Oct.). If a snake is found, the species is to be positively identified and either avoided temporarily or relocated outside of the active quarry area. The MNR should be contacted regarding sightings or issues.
- d. A record keeping system will be established to log sightings or incidents. Contact information for MNR biologists will be available on site. The licence holder will keep records of search dates, personnel and times, in addition to any action taken.
- e. All persons employing contractors on the site will be provided with Species at Risk. The licence holder will post signs on the site to identify the possible presence of hog-nose or milk snakes.
- f. The rehabilitation plan will include the construction of the northern edge of Extraction areas 1, 3 and 5. These will be associated with rehabilitation nodes and consist of randomly distributed limestone slabs and woody debris.

Acoustical Assessment Report Recommendations

General Noise Mitigation

- a. Quarry operations will take place between the daytime hours of 7:00 AM and 7:00 PM (07:00-19:00).
- b. Truck loading and stripping off site will occur through the Primary Entrance in Area 7 during daytime hours. Truck speeds on the site will not exceed 20 km/hour and Jake Brakes (compression brakes) will not be used.
- c. Noise mitigation measures will apply to all production phases.
- d. Except where described for extraction areas 4B, 5B, and 6B, the maximum numbers of equipment to be operated includes:
 - two excavators and one rock drill, or, three excavators
 - two loaders associated with the extraction operation
 - two loaders associated with the crushing, screening and washing operation
 - one skid steer
 - one screening/wash plant
 - one crushing plant
- e. Barriers or berms will be solid structures, having no gaps and have a surface density of no less than 20 kg per square metre. Suitable barriers include earth, gravel or aggregate berms, concrete or brick walls or commercial noise barriers.
- f. The crushing plant and screening/wash plant are restricted to the following:
 - C-1: Crushing/screening/washing in Area 1 may be used only during the extraction of Area 1. The plant may be located on surface or below grade. The crushing plant is to be located at least 110m from R3 and R5 and shielded by a 6m high barrier (relative to the crusher elevation) which consists of a berm and/or lift face which is no more than 20 metres from the crushing plant. The crushing plant side of the barrier may be partially constructed of dimensional stone or concrete blocks as required to allow the plant to be located within 20 m of the barrier. The screening/wash plant is to be located at least 110m from R3. No shielding is required.
 - C-2: Crushing/screening/washing in Area 2 may be used only during the extraction of Area 2. The plant may be located on surface or below grade. The crushing plant is to be located at least 120m from R3 and R5 and shielded by a 7m high barrier (relative to the crusher elevation) which consists of a berm and/or lift face which is no more than 20 metres from the crushing plant. The crushing plant side of the barrier may be partially constructed of dimensional stone or concrete blocks as required to allow the plant to be located within 20 m of the barrier. The screening/wash plant is to be located at least 120m from R3 and R5. No shielding is required.
 - C-3: Crushing/screening/washing in Area 4 may be used only during the extraction of Area 4. The plant may be located on surface or below grade. The crushing plant is to be located no more than 50m from an 8m high lift face provide shielding to R3 and R5. The shielding lift face is to remain in place as long as is practical. After the stripping lift face is excavated, an 8m high berm can replace the lift face.
- g. Boundary berms
 - A 5m high berm will be constructed within the eastern setback along the eastern quarry boundary extending south to the main entrance. This berm shall shield R3 from the main entrance and crushing operations and can be built progressively providing R3 is shielded. When extraction operations are taking place in Areas 3,4,5,6,7 and 7, a 7m high L-shaped berm is required to shield R3 from extraction and crushing operations. The berm will start immediately south of the main entrance and extend southward to the southeast corner of the licensed area and then westward for 80m. A secondary entrance near receptor R3 requires a break to be made in the berm. The shape and extent of the berm break must be such that there is no direct line of sight to any quarry operations from R3.

Mitigation Requirements for Individual Extraction Areas

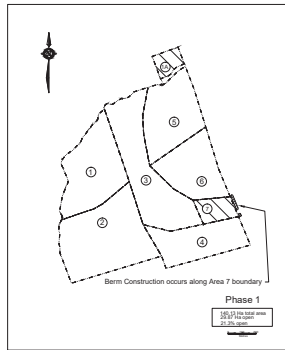
- a. **Extraction Area 1**
Excavators, loaders, rock drill and skid steer may operate without noise mitigation.
- b. **Extraction Area 2**
Excavators, loaders, rock drill and skid steer may operate without noise mitigation.
- c. **Extraction Area 3**
Excavators, loaders, rock drill and skid steer may operate without noise mitigation.
- d. **Extraction Area 4A (more than 500m from R3)**
Excavators, loaders, rock drill and skid steer may operate without noise mitigation.
- e. **Extraction Area 4B (less than 500m from R3)**
Reduced numbers of mitigation equipment required is: one loader or one skid steer, plus one excavator and one rock drill or, one loader or one skid steer, plus two excavators
- f. **Extraction Area 5A (more than 400m from R3)**
Excavators, loaders, rock drill and skid steer may operate without noise mitigation.
- g. **Extraction Area 5B (less than 400m from R3)**
The following controls will apply when any extraction equipment is being operated in Area 5B or 6B which are on surface or less than 3m below grade:
Reduced numbers of mitigation equipment required is: one loader or one skid steer or one excavator or one rock drill.
Below Grade Extraction Area 5B or 6B (less than 400m from R3)
The following controls will apply when any extraction equipment is being operated in Area 5B or 6B which are on a level which is 3m below grade:
Reduced numbers of mitigation equipment required is: the rock drill may not operate simultaneously with loaders, skid steers or excavators, or only one excavator, one loader and one skid steer may operate simultaneously.
- h. **Extraction Area 7**
Excavators, loaders, rock drill and skid steer may operate without noise mitigation.

Portable Equipment for Site Preparation and Rehabilitation

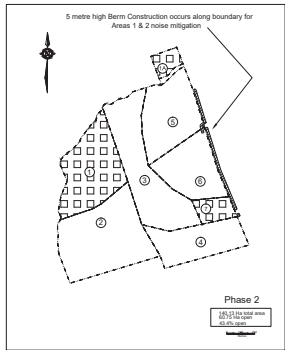
- a. Portable construction equipment will be used occasionally for site preparation (land clearing, berm construction) and rehabilitation. This equipment would typically include excavators, hydraulic shovels and dozers. To minimize noise impacts during these operations, any construction equipment used will comply with M&E Publication NFO-116 "Construction Equipment" dated Aug. 1978. Site preparation and rehabilitation activities will take only during daytime hours (07:00 to 19:00).

Changes in Equipment or Operating Procedures

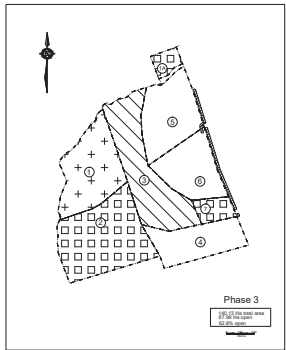
- a. No changes in operating procedures or equipment that may significantly affect noise impacts shall be implemented without a revised acoustical assessment. The assessment must ensure noise levels at receptors are in compliance with M&E guidelines. Examples of changes include changes in crushing plant operations or equipment, changes in equipment types or increases in numbers of operating equipment beyond those discussed in the acoustic report, and the introduction of new processes such as stone sawing or gauling.



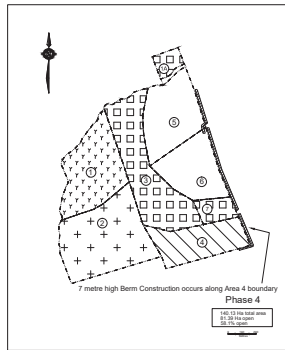
Phase 1 (a) commence stripping (logging, stumping and topsoil removal) in 1a and 7. Construct berm in front of Area 7 along eastern boundary. 21% of disturbed area is open.



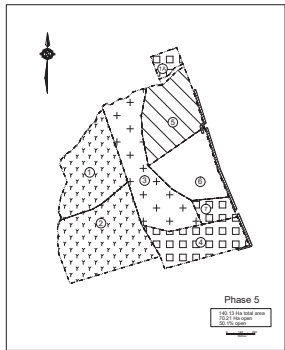
Phase 2 (a) Excavate material and prepare process areas in Areas 1A, and 7. Construct berm in front of Area 7 along eastern boundary. 21% of disturbed area is open.



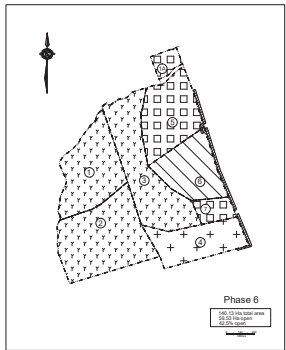
Phase 3 (a) conduct Progressive Rehabilitation in Area 1. (b) Excavate and process material in Areas 2, 4 and 7. (c) Logging and stripping occur in Area 3. 62% of disturbed area is open.



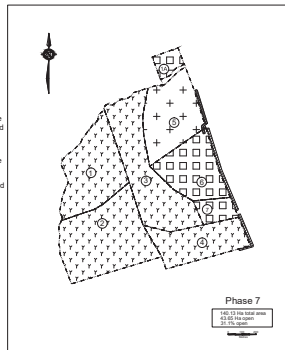
Phase 4 (a) Area 1 has undergone Final Rehabilitation. 16% is rehabilitated.



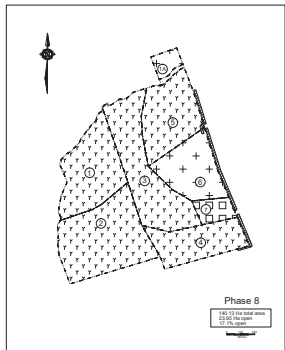
Phase 5 (a) Area 2 has undergone Final Rehabilitation. 38% is rehabilitated.



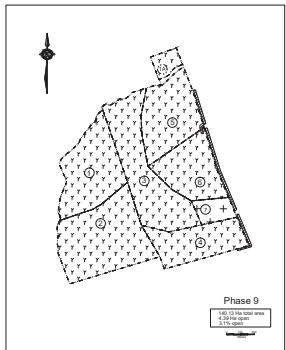
Phase 6 (a) Area 3 has undergone Final Rehabilitation. 58% is rehabilitated.



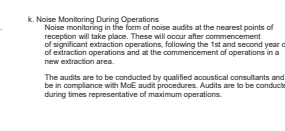
Phase 7 (a) Area 4 has undergone Final Rehabilitation. 69% is Rehabilitated.



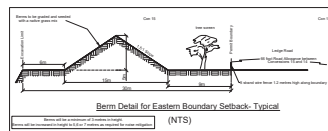
Phase 8 (a) Area 5 has undergone Final Rehabilitation. 83% is rehabilitated.



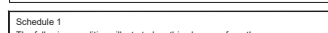
Phase 9 (a) Areas 1A and 6 have undergone Final Rehabilitation. 97% is rehabilitated.



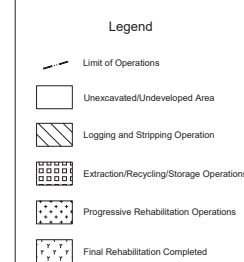
Phase 10 (a) Area 7 has undergone Final Rehabilitation. 100% is rehabilitated.



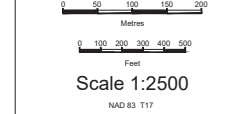
- a. Noise Monitoring During Operations
Noise monitoring in the form of noise audits at the nearest points of reception will take place. These will occur after commencement of significant extraction operations, following the 1st and second year of extraction operations and at the commencement of operations in a new extraction area.
The audits are to be conducted by qualified acoustical consultants and be in compliance with M&E audit procedures. Audits are to be conducted during times representative of maximum operations.



Dewdney Mountain Farms Quarry



Part Lot 28, 29 & 30, Con 15
Geographic Township of Harvey
in the
Municipality of Trent Lakes
(Formerly the Township of Galway-Caledon and Harvey)
County of Peterborough



Extraction/Progressive Rehabilitation Plan
Page 3 of 5

Quarry Licensed To:
Dewdney Mountain Farms Ltd.
543 Ledge Road
Trent Lakes, Ontario, K0M 1A0

revised May 1, 2020
Note: Cross Sections are located on Page 5 of 5.



Item	Section	No.	Date	Submission/Amendment	Approved by
No fencing to be constructed on the north, west and south boundaries. Unfenced portions of these boundaries to be marked with flagging and signs except within wetlands.	5(1)	1.	August 2009	First Site Plan Submission	
		2.	November 2011	Second Site Plan Submission	
		3.	Feb 25 2013	Peer Review Amendments	
		4.	Aug 19 2014	Revisions as shown at OMB hearing	

Site Plans Approved By:

I acknowledge and shall carry on the operation of this site in accordance with the site plan upon which my license is based.

Paul Ritchie Date Ministry of Natural Resources Date