

# Town of Windham

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## MEMO

DATE: April 4, 2018

TO: Planning Board  
FROM: Amanda Lessard, Planner *AL*  
Cc: Ben Smith, Planning Director  
Parker Brown, Shaw Brothers Construction, Inc  
Development Review Team  
  
RE: 18-06 Shaw Brothers O-Pit (Busque Quarry), 4<sup>th</sup> Amended Site Plan  
Planning Board Meeting: April 9, 2018

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### Overview –

#### History

The Busque Quarry Site/Mineral Extraction plan was originally approved by the Planning Board on August 27, 2007, and approved by the Town Council on September 23, 2008.

The 1<sup>st</sup> Amendment to the plan was approved by the Planning Board on July 26, 2010, whereby the entrance to the quarry was moved from Route 302 to Nash Road.

The 2<sup>nd</sup> Amendment was approved by the Planning Board on September 27, 2010, when the Board approved the following changes to the site plan:

- Removed the requirements for temporary fencing around the excavation area and permanent fencing around the entire quarry,
- Removed the limits on operation from May through October, so that year round operations are allowed within the approved operating hours, and
- Changed the vibration standard from 2.0 PPV at the property line, to the current standard based on Maine Department of Environmental Protection (MDEP) rules of 2.0 PPV at the nearest structure, per the Town of Windham Mineral Extraction Ordinance.

The 3<sup>rd</sup> Amendment was approved by the Planning Board on January 24, 2011, when the Board approved the following changes to the site plan:

- Increased the area of excavation from 53 acres to 75.5 acres.
- Increased the depth of excavation to below the seasonal high groundwater line
- Added permanent maintenance building to the site

Proposed Amendments for 4<sup>th</sup> Amendment request:

The applicant is proposing to amend the currently approved plan by:

- Suspending groundwater monitoring.
  - Currently, Condition of Approval #2 states that “The applicant shall implement the recommendations on page 6 of the Sweet Associates Revised Hydrogeological Investigation dated May 25, 2007. These include groundwater level monitoring, installation of a drilled well for the existing residence, and groundwater quality and quantity testing.” (Page 6 of that report is attached to this memo)
  - The applicant is proposing to suspend both groundwater level monitoring and groundwater quality monitoring until excavation reaches 2 feet from the existing seasonal high groundwater table. This proposal has received Maine Department of Environmental Protection (MDEP) review and approval dated January 30, 2018.
- Adding an accessory use to the site
  - The applicant is proposing to operate a woodwaste processing facility in the quarry. This proposal has received Maine Department of Environmental Protection (MDEP) review and approval dated July 6, 2017.

Note that the Town Council will not review this project application, per the change to Section 600 of the Land Use Ordinance made on February 9, 2010. By enacting that change, the Town Council removed themselves from the review of Mineral Extraction applications. As a result, the Planning Board is the sole review authority for new or amended Mineral Extraction applications.

The Findings of Fact below are based on the staff memo dated January 18, 2011, which was prepared for the Planning Board review of the 3rd Amendment to the site plan. New comments related to this 4th Amendment appear as underlined text below.

SITE PLAN REVIEW

Staff Comments:

1. Waivers:
  - a) No waivers have been requested.
2. Complete Application: This is not applicable for proposals to amend site plans.
3. Public Hearing: A public hearing was held on May 14, 2007. A public hearing on the 3<sup>rd</sup> Amendment is scheduled for January 24, 2011. A public hearing has not been scheduled for this amendment. Public hearings are not required for amended site plan applications, but may be scheduled at the Board’s discretion.
4. Site Walk: A site walk was held on March 10, 2007. A site walk was held September 25, 2010.

Findings of Fact and conclusions for the

**Windham Planning Board,**

The 4<sup>th</sup> Amended Site Plan application and Mineral Extraction operation for Shaw Brothers O-Pit (Busque Quarry) on Tax Map: 12, Lot: 79 is to be (**approved with conditions/denied**) with the following findings of fact and conclusions.

**FINDINGS OF FACT**

**Utilization of the Site**

- The site is comprised of a hill that rises to 380 feet at its highest elevation.
- A portion of Phase 1 of the site has been cleared of mature trees, except for those on the perimeter of the property.
- The proposed plan seeks to quarry the hillside in seven (7) phases. These phases are identified on the plans.
- The site will be occupied by machinery associated with the quarry operation. This includes a transportable rock crusher, privy and trucks/loaders.
- The project received a permit from the MDEP. As part of this permit, the applicant demonstrated that no significant wildlife habitat exists and that adequate buffers have been provided from any protected natural resources.
- As of the date of the 2<sup>nd</sup> and 3<sup>rd</sup> Amendment requests, the area identified as Phase 1 of the excavation area has been cleared of trees and grubbed, so that rock is exposed.
- The applicant has received a permit from the MDEP for excavation of rock below the seasonal high water table, and for operating an externally drained quarry, dated December 16, 2010.
- The applicant has received a permit-by-rule from the MDEP (DEP #S-022491-WK-A-P dated July 6, 2017) to operate a woodwaste processing facility at the quarry. The total waste handling area may not exceed three (3) acres and on-site storage areas may not exceed one (1) acre. Individual storage piles may not exceed 10,000 square feet.

**Vehicular and Pedestrian Traffic**

- A traffic study was prepared by John Q. Adams, P.E. on April 23, 2007. The study concluded the following:
  - The project will produce a relatively low volume of traffic,
  - There are no high accident locations within the project area,
  - The proposed entrance meets sight distance requirements,
  - Left turn treatment should be incorporated into the project. As a result, a bypass lane has been designed for the southbound lane of Route 302.
  - Deceleration and acceleration lanes should be added to the northbound lane of Route 302. This feature has been incorporated into the entrance design as a widened shoulder lane.
  - With the proposed improvements, the project will not have a significant impact to the traffic operations and safety of the area roadways.

- A peer review of the traffic study was performed by Gorrill-Palmer Consulting Engineers on April 23, 2007. The peer review concurred with the findings of the traffic study conducted by Adams, P.E. However, the review noted that the project may not meet the sight distance requirement for trucks in a mobility corridor.
- An addendum to the traffic study was submitted on July 3, 2007. The addendum explained the necessity to redesign the improvements on Route 302. In particular, the MDOT required that a full acceleration lane not be added to the northbound lane of Route 302.
- The project received a permit for the entrance on Route 302 from the MDOT on March 27, 2007.
- The entrance plans were modified to incorporate the MDOT's requirement that a full acceleration lane not be added to the northbound lane of Route 302.
- An emergency access way has been provided from Nash Road.
- The entrance to Aggregate Way and the emergency access will be gated. The applicant must provide lock boxes in accordance with the Windham Fire Department.
- The restricted access and private commercial nature of the quarry use does not require provisions for internal pedestrian improvements.
- An emergency access way has been provided from Nash Road.
- An updated Traffic Study dated June 21, 2010, has been prepared for the 1<sup>st</sup> Amendment to the site plan. This Study focuses primarily on the Route 302/Nash Road intersection, because of the low volumes of traffic on Nash Road, and the low volume of traffic coming into and out of the quarry site. The study concluded:
  - Intersection sight distances were adequate, as measured for the quarry access at Nash Road.
  - No off site improvements are proposed for either Route 302 or Nash Road. The 10-foot paved shoulder at Nash Road is wide enough to accommodate vehicles turning right onto Route 302 when there vehicles waiting to turn left or go through the intersection.
  - The Route 302/Nash Road intersection is not classified as a "high crash location" by MaineDOT.
- Peer review comments on the June 2010 Traffic Study were received in an email dated June 22, 2010, from Randy Dunton, P.E., PTOE, from Gorrill-Palmer. This email is attached. Recommendations focus in the need for more information regarding the Route 302/Nash Road intersection, including:
  - sight distances,
  - turning lane warrants, and
  - the need for separate turning lanes coming out of Nash Road.
- John Adams, P.E., of Sebago Technics, addressed Mr. Dunton's review comments.
  - Sight Distance – From Nash Road looking right (westerly up Route 302) the sight distance is over 1200 feet for both cars and trucks. Looking left (easterly on Route 302) the sight distance is 610 feet for cars, and 780 feet for trucks. Mr. Adams states that the required sight distance is 740 feet for trucks.
    - The approved plan states that MaineDOT requires 840 feet of sight distance on a mobility corridor. Route 302 is a mobility corridor as classified by MaineDOT, with stricter access management.

- The functionality of the Nash Road intersection is similar to other roads that intersect with Route 302, so dedicated lanes should not be required.
  - Staff and Gorrill-Palmer recommend that a stop bar and formal turning lanes be appropriately marked, even if they no road widening is required.
- Turning lane warrants – A right turn lane onto Nash Road for west-bound vehicles is not warranted, but a left-turn lane for east-bound vehicles is. Even though the number of vehicles turning left onto Nash Road is low, staff and Gorrill-Palmer recommends that the Board consider requiring this turn lane because:
  - This is a 4-leg intersection, meaning that east-bound vehicles passing a left turning vehicle in the shoulder may conflict with left turning vehicles coming from the opposite direction.
  - Quarry vehicles making left turns will be trucks, that require larger gaps in opposing traffic to safely turn, and a dedicated turn lane will separate these vehicles from traffic flow.
  - Trip generation from the quarry (12 truck trips in the peak hour) may be on the low range of the estimated traffic volumes (currently approved for 20 truck trip ends, peak hour)
- The Traffic Study for the currently approved plan stated that there will be 20 truck trip ends at the peak hour. The 1<sup>st</sup> Amendment states that there will be 12 truck trip ends in the peak hour.
- The 4<sup>th</sup> Amendment application included an email dated May 28, 2013 stating that a traffic count has been performed for the period between May 6, 2013 and May 10, 2013. The results were an average count of 17 trucks per day or 1.7 trucks per hour which is significantly less than the 36 trips per hour allowed. The submission narrative also stated that for the busiest 5 weeks of 2007, every day except one was under 36 trips for the entire day and one day had a total of 37 trips.
- In an email dated April 2, 2018 Town Engineer Jon Earle, PE, asked how the 2017 traffic data was collected. The applicant responded in an email April 3, 2018 and Mr. Earle confirmed on April 3, 2018 that the methodology for counting truck traffic was reasonable.

### **Sewage Disposal and Groundwater Impacts**

- Sweet Associates prepared a, “Revised Hydrogeological Investigation” on May 25, 2007. The study concluded that the elevation of groundwater is favorable for the construction of a “modest” quarry. The study included four recommendations on page 6. The implementation of these recommendations has been included in the conditions of approval.
  - In the fourth conclusion on page 6 of the report Sweet Associates implies that the use of explosives may create perchlorates which could have an adverse affect on groundwater. The blasting plan prepared by Green Mountain Explosives states that no perchlorates will be used. The blasting plan was included in the applicant’s July 9, 2007 submission.
- A peer review of the Sweet Associates investigation was conducted by R.W. Gillespie & Assoc. on April 23, 2007. In summary, the peer review concurred with the findings of the Sweet Associates’, “Revised Hydrogeological Investigation.”

- Richard Sweet of Sweet Associates prepared the report “Busque Quarry – Site History, 72 Hour Pump Test and On-site Groundwater Quality Monitoring, Route 302 and Nash Road, Windham,” dated September 1, 2009, as part of the 3<sup>rd</sup> Amendment. The study concluded that “the water table on-site is favorable for excavation below the seasonal high groundwater table” (p.7), because results of the 72-hour pump test show that there is limited inter-connectivity of fractures in the bedrock aquifer.
- Excavating rock below the groundwater level will require continuous pumping to “dewater” in order to operate the quarry as proposed.
- In granting the variance request on December 16, 2010, the MDEP found that “the proposed activity will not unreasonably interfere with the natural flow of groundwater provided that the applicant complies with the requirements described in Finding 3.”
- The 4<sup>th</sup> Amendment proposes to suspend both groundwater level monitoring and groundwater quality monitoring until excavation reaches 2 feet from the existing seasonal high groundwater table. An Annual Groundwater Monitoring Report 2017 dated December 18, 2017 prepared by St. Germain Collins was included with the amendment application. The report concludes that groundwater elevations and groundwater quality have not significantly changed between 2012 and 2017.
- This proposal has received Maine Department of Environmental Protection (MDEP) review and approval dated January 30, 2018. Condition #4 of the DEP Order states that once excavation is within two feet of the seasonally high water table, the applicant will return to the previously existing schedule of quarterly monitoring for groundwater levels at MW-1, MW-2, MW-10 through MW-13 and quarterly monitoring for groundwater quality at MW-1 and MW-12. See proposed revision to Condition of Approval #2.

### **Stormwater Management**

- A stormwater management report for the site, once it is reclaimed, was prepared by James Lowery, P.E. on July 9<sup>th</sup>, 2007. The report finds on page 2 that the post-development, “peak storm elevations will not overtop the proposed berms and the detention areas have sufficient volume to hold the expected stormwater runoff.”
- An updated stormwater management plan prepared by Sebago Technics dated July 2010, has been included in the August 2010, submission, as part of the 3<sup>rd</sup> Amendment request. The plan calls for a wet pond, which will initially be sized to handle runoff from Phases I and II. The pond will be enlarged prior to Phases III through VI of the quarry operation.
- Post development runoff rates will be less than the pre-development rates for the 2-, 10-, and 25-year storms (p. 5 of the stormwater report).
- In granting the variance request on December 16, 2010, the MDEP found that the proposed wet pond met the requirements of Chapter 378 (variance criteria for quarry operations and petroleum storage performance standards) and of Chapter 500 (stormwater management performance standards).

### **Erosion Control**

- The applicant has incorporated an erosion control plan on plan sheet 6 of 6.

- Plan sheet 3 of 6 depicts the installation of silt fencing on the South portion of the property. This includes the access drive labeled Aggregate Way.
- An updated Erosion and Sedimentation Control Plan has been submitted as Section 4 of the August 2010, submission, as part of the 3<sup>rd</sup> Amendment request.
- Pages 8-10 of Section 4 of the Erosion and Sedimentation Control Plan describe Winter Erosion Control Measures, specifically for activities from October 1 through April 15. The Planning Board voted to allow year round operations as part of the 2<sup>nd</sup> Amendment to the Busque Quarry. Originally, the quarry was only permitted to operate between May 1<sup>st</sup> and October 31<sup>st</sup>.

### **Utilities**

- The applicant stated in the August 17, 2007 submission that no permanent lighting or utilities will be supplied to the site.
- No site lighting is proposed as part of the 3<sup>rd</sup> Amendment. Security lighting will be provided for the maintenance building.

### **Financial Capacity**

- The applicant submitted a letter of financial capacity from TD Banknorth dated March 24, 2006.
- The applicant submitted a project portfolio to demonstrate technical capacity. This list includes residential subdivision construction, road construction and gravel pit operations.
- The applicant submitted a list of the qualified professional consultants that prepared the plans and supporting materials.

### **Landscape Plan**

- The tree cover on the perimeter of the property has been depicted on the plans. This tree cover is the most important aspect of the proposed 100 ft. vegetative buffer.
- A condition of approval has been added that no removal of mature trees in the tree line area depicted on the plans shall be allowed except for those which pose a safety hazard.
- A landscaped sign area has been created at the corner of Nash and Route 302. This area is on the property on the corner of Nash Road and Route 302.
- A landscaping plan has been provided for the formerly approved Route 302 entrance as Sheet 3 of 8, labeled Revision F, dated 1-05-11. The enclosed 11" x 17" shows 23 white pines, planted in 2 rows across the cleared opening of the property's frontage along Route 302, and replaces the full size Sheet 3 of 8, labeled as Revision E, dated 12-13-10.

### **Conformity with Local Plans and Ordinances**

- Required Plan Notes: The applicant must place the required, "Driveway Opening Permit," note on the plans. The text for this note may be found in the site plan review ordinance. It

does not appear that the driveway section of the required note was included on the plans. The text of this note can be found on page 113 of the Land Use Ordinance.

- Comprehensive Plan: The plan is located in the Farm District of the Future Land Use Plan. No specific future uses for the district were identified in the plan.
- Land Use Ordinances:
  - The proposed mineral extraction use is permitted in the Farm District if it meets the standards of section 600 Mineral Extraction.
    - In an email dated March 28, 2018 Code Enforcement Director Chris Hanson stated that woodwaste processing would be allowed as an accessory use to the Gravel Pit Permit. This use would not increase traffic or noise as proposed.
  - Section 600 Mineral Extraction:
    1. Fencing, landscaped buffer strips, and other public safety and nuisance considerations.
      - A 100 ft. buffer strip has been provided around the perimeter of the property. A condition of approval has been added that mature tree removal will not be allowed within the depicted buffer area.
      - Part of the Town Council “Findings of Fact” for the original quarry approval in 2007 were that the applicant stated that 1) temporary fencing would be installed around the entire extraction areas, and 2) a permanent fence will be installed after the site is reclaimed (p. 6 of “Findings and Conclusions of Windham town Council, Mineral Extraction Operation Application, Windham Properties, LLC, Tax Map 12; Lot 79”).
      - The Town Council also found that the applicant met the requirements for this standard, based in part that 1) a continuous fence will be installed around the entire extraction area, and 2) safety fence will be installed at the top of the extraction area (p. 21 of “Findings and Conclusions of Windham town Council, Mineral Extraction Operation Application, Windham Properties, LLC, Tax Map 12; Lot 79”).
      - The applicant states in a letter for the 2<sup>nd</sup> Amendment that that the Mine Safety and Health Administration (MSHA), the federal agency which regulates mineral extraction operations, currently requires an earthen berm around the quarry operation and “No Trespassing” signs posted around the property. Fencing is not required.
      - MSHA requirements for a berm are primarily for vehicle safety. MSHA requires a berm in areas where a vehicle may drive near a steep face or dump area, and the berm must be equal in height to at least the axle height of the largest vehicle operating in the quarry.
      - The Planning Board voted to remove the requirements for fencing as part of the 2<sup>nd</sup> Amendment request on September 27, 2010.
    2. Signs and lighting designed to prevent public nuisance conditions or undesirable aesthetic effects on the neighborhood.



- A sign detail has been included in the July 9, 2007 submission. The location of the sign has been depicted on the plans.
  - The applicant has stated that no permanent lighting will be placed on the site.
  - Security lighting is proposed for the maintenance building that is shown as part of the 3<sup>rd</sup> Amendment request.
3. Adequate parking spaces, loading and unloading areas.
- The plan depicts an initial parking area and the initial location of the rock crusher.
4. Safe entrances and exits, including security provisions.
- According to the Site Plan Review findings, the project will provide safe entrances and exits to the site.
  - The access ways will be secured via a solid gate. A construction detail of the gate has been provided on sheet 7 of 8.
5. Total estimated life of the pit.
- The project will be completed in seven (7) phases.
  - In the August 2010, submission for the 3<sup>rd</sup> Amendment request, the applicant states that the quarry may be in operation for 35 years or more, depending on the demand for aggregate.
6. Days and hours of normal operation.
- The hours of operation shall be as follows:
    - Monday – Friday: 6:30 a.m. to 5:00 p.m.
    - Saturday – Sunday (maintenance only): 6:30 a.m. to 12:00 p.m. (noon)
  - Blasting shall occur during the following times:
    - Monday – Friday: 11:00 a.m. to 3:00 p.m.
7. Methods of operation, removal or processing.
- Green Mountain Explosives has prepared a blasting procedures description.
  - The MDEP has issued a permit pursuant to the Performance Standards for Quarries (38 M.R.S.A Section 490-Y)
  - As part of the original quarry approval, the Town Council added a Condition of Approval stating “Drilling, blasting, and rock crushing shall be permitted only from May 1<sup>st</sup> to October 31<sup>st</sup> to ensure that foliage is found on vegetation within the buffer area throughout periods of operation” (p. 24 of “Findings and Conclusions of Windham town Council, Mineral Extraction Operation Application, Windham Properties, LLC, Tax Map 12; Lot 79”).

- A report dated April 2, 2008, by Ransom Environmental states that noise estimates provided by SE Ambrose on behalf of the applicant in testimony for the original approval may only be valid during months in which there is vegetation to reduce noise generated by the quarry (p. 28 of “Findings and Conclusions of Windham town Council, Mineral Extraction Operation Application, Windham Properties, LLC, Tax Map 12; Lot 79”).
- In response, SE Ambrose stated in a letter dated June 24, 2008, stated that quarry operations are only feasible in Windham from late Spring to mid Fall due to adverse weather conditions (p. 21 of “Findings and Conclusions of Windham town Council, Mineral Extraction Operation Application, Windham Properties, LLC, Tax Map 12; Lot 79”).
- The Planning Board voted to allow year round operations as part of the 2<sup>nd</sup> Amendment request on September 27, 2010.

8. Area and depth of excavation.

- The area of the excavation has been depicted on the plans.
- As part of the 3<sup>rd</sup> Amendment request, the area of excavation is proposed to be enlarged to 75 acres, from the 53 acres currently approved.
- The applicant has stated that the depth of excavation shall be limited to a distance of five (5) feet above the seasonal high groundwater table.
- As part of the 3<sup>rd</sup> Amendment request, the depth of excavation is proposed to be increased to go below the groundwater table. This is a variance from MDEP standards for quarries, and will require approval from MDEP.
- The MDEP granted the variance for quarry operations below the seasonal high water table, in a permit dated December 16, 2010.

9. Provision for temporary or permanent drainage and sedimentation control.

- An erosion control plan has been prepared.
- The site will be internally drained during quarry operations.
- A stormwater management plan has been prepared for the site once it has been reclaimed. The plan has been modeled for a 25 year storm event and includes the use of detention ponds and outlet control structures.
- An updated stormwater control plan has been submitted as part of the August 2010 submission for the 3<sup>rd</sup> Amendment request. As noted above, the quarry will include a wet pond for quality and quantity treatment of runoff from the quarry.
- The 3<sup>rd</sup> Amendment request calls for the quarry to be externally drained. This is a variance from the MDEP standards for quarries, and will require approval from MDEP.
- The MDEP granted the variance for an externally drained quarry, in the permit dated December 16, 2010.

10. Disposition of stumps, brush and boulders.

- The site has been previously cleared by the applicant.
- The applicant is proposing to use the topsoil and stumps to construct the berms for noise mitigation.

11. Type and location of temporary and permanent structures.

- The applicant is not proposing to construct any permanent structures.
- The applicant has depicted the initial locations of the rock crusher and privy.
- As part of the 3<sup>rd</sup> Amendment request, permanent structures are proposed. A maintenance building approximately 40' by 50' and a fueling area with a fueling pad, 1,000 gallon tank, and pump, and roof over the tank and pump. These are noted on the plan.

12. Storage and containment of any materials (e.g., petroleum products, salt, hazardous materials, rubbish, treated timber) on the property.

- The original approval of this project did not include the storage of diesel fuel on site.
- The applicant has prepared a "Diesel Spill Prevention and Countermeasure Plan."
- The Fire Department requested that the plan be revised to identify the Windham Fire Department as the first point of contact in an emergency. This has been added to the conditions of approval.
- As part of the 3<sup>rd</sup> Amendment request, diesel fuel will be stored on site. It will be covered, and has secondary containment.
- As part of the 4<sup>th</sup> Amendment request, woodwaste will be processed on site. The storage and process area will be located on an asphalt pad at least 2 feet above the seasonal high-water mark and surrounded by a small berm. The applicant has received a permit-by-rule from the MDEP (DEP #S-022491-WK-A-P dated July 6, 2017) The facility must be operated in compliance with Chapter 409, Section 7 of the *Maine Solid Waste Management Rules*.

13. Complete rehabilitation proposals.

- The reclamation plan prepared by James Lowery, P.E., is found on plan sheet 3 of 6 and plan sheet 4 of 6. The reclamation plan adequately demonstrates the conditions of the site once reclaimed. In addition, the plan makes provisions for the mitigation of stormwater runoff post-development.
- No mention of the type of fill to be used in the reclamation process has been submitted. A condition of approval has been added to ensure that contaminated soils shall not be used for reclamation fill.
- The reclamation plan shows that once reclaimed the site will have a more uniform slope that is located at a lower elevation than found in the existing condition.

- The reclamation plan includes a post-development stormwater management plan that is modeled for a 25 year storm event. The stormwater management plan utilizes detention basins and rip-rap outlet control structures.
- The proposed reclamation plan was reviewed and approved by the MDEP per the standards of 38 M.R.S.A Section 490Z13.
- The applicant has prepared an, “Overall Site Plan for Possible Future Use.” The provisions of this plan are not well enough developed to be approved as part of this application.
- Sheet 3 of 8, revision F, dated 1-05-11, has been updated as part of the DEP variance approval process, and to show proposed landscaping at the originally approved entrance on Route 302.

14. Noise levels.

- a. Noise is required to be muffled so as not to be objectionable due to emission, beat frequency or shrillness. The average dBA count resulting from any activity shall not exceed at any point on or beyond any lot line, sixty (60) dBA during the day and fifty (50) dBA at night. The average dBA count for any activity shall be computed based on samples taken at intervals during hours of operation.
  - The SE Ambrose Crawler Drill Noise Prediction dated March 22, 2007 concludes in Table 1 that the drill operation will not exceed sixty (60) dBA with the inclusion of tree and groundcover attenuation.
  - The SE Ambrose Noise Analysis dated January 27, 2006 found that the quarry operation will meet the MDEP fifty-five (55) dBA limits. Accordingly, the project will also meet the Town of Windham’s sixty (60) dBA standard.
  - Noise Control Engineering Inc. performed a peer review of the January 27, 2006 noise analysis, and supplemental information submitted on April 24, 2006. The peer review concluded that SE Ambrose reports were adequate and sufficient.
- b. During the peak sixty (60) minute period in a twenty-four hour period, a noise shall not exceed these average dBA counts by more than ten (10) dBA in any zone.
  - See Section 15.a., above.
- c. For activities of a temporary nature unable to meet these requirements, a special permit must be obtained from the Code Enforcement Officer. The noise standards shall not apply to the temporary use of such machinery as chainsaws, lawn mowers and snowmobiles.
  - No activities for which a special permit is required have been identified in the application. If such activities are proposed in the future, the applicant will be responsible to obtaining all required permits.

- The requirements listed above in 14a, 14b, and 14c are from the previous version of the Mineral Extraction ordinance. As of October, 2009, these standards do not apply to new or amended mineral extraction applications.
- The current noise standards in Section 600 – Mineral Extraction reference the noise standards in Section 800 – Site Plan Review. Per Section 812, S., “sound levels shall be measured at least four (4) feet above ground at the closest occupied structure not owned or under the control of the owner or operator of the proposed development or use.”
- For uses abutting residential uses, sound pressures must be no more than 55 decibels between the hours of 7:00 AM and 10:00 PM.
- The noise levels above were submitted in support of the Busque Quarry’s original approval (55 acre quarry), and were based on data from a previous application for the Tibbetts Quarry (approximately 75 acres). As noted in standard #7 above, SE Ambrose stated that these sound levels were calculated “from late Spring to mid Fall,” when leaves are on the trees.
- Because these noise level projections are made for the same size quarry, with operations in roughly the same area, these projections are still valid. Note that the Ambrose calculations were made at property line locations, as opposed to the nearest structure. This change in the ordinance is in the applicant’s favor, giving more distance from the operation to the point of measurement.
  - Given the importance placed on vegetation to reduce noise generated by the quarry” (p. 28 of the “Findings and Conclusions of the Windham Town Council), the applicant must submit information to show that sound levels from quarry operations during months when there is no vegetation to attenuate noise levels will still meet the noise standards of the ordinance.

#### 15. Vibration levels.

- The Planning Board voted at its May 14, 2007 meeting to interpret the Town of Windham vibration standard of “No vibration shall be produced which is transmitted through the ground and is discernible without the aid of instruments at or at any point beyond any lot line” using the MDEP Standards contained in 38 M.R.S.A. 490-Z14I. The Board further chose to limit the MDEP standard to the property line, rather than the nearest inhabitable structure not owned or controlled by the developer. Furthermore, the Board stipulated that each blast be monitored by a seismograph which has been calibrated within the last year.
- Green Mountain Explosives has submitted an, “Updated Vibration Predictions for Busque Quarry Proposal.” These predictions demonstrate that blasts may be produced which meet the 2.0 PPV at the property line limitation, as interpreted by the Board.
- A condition of approval has been added to confirm and enforce the Planning Board’s interpretation that the 2.0 PPV level must be maintained at the property line. The condition of approval reference’s the MDEP standard, which includes the federal vibration graph.

- As part of the 2<sup>nd</sup> Amendment request, the Board approved a change for vibration levels of 2.0 PPV at the lot line be updated to the current ordinance standard which uses the standard of 2.0 PPV “at inhabitable structures not owned or controlled by the developer...” Section 606(A) of the Town ordinance references DEP requirements, which references this MSHA requirement.
- The applicant must submit information as to how this standard will be met if the quarry operations were permitted closer to the property line, as proposed in the 3<sup>rd</sup> Amendment request.
- In a letter dated December 27, 2010, the applicant states that this standard will be met through operations. The blasting company will adjust the amount of explosives and size of blasts based on the location within the quarry area to meet the 2.0 PPV at the nearest structure.

16. Dust levels and measures for minimization.

- MAI Environmental has prepared a, “Fugitive Dust and Emission Control Plan.” This plan outlines the best practices for minimizing dust levels.

### **Impacts to Adjacent/Neighboring Properties**

- The development proposal does not include the construction of buildings, walls, fencing or landscaping that would interfere with or discourage the appropriate development in the use of adjacent land or unreasonably affect its value.
- The parking and loading areas have been appropriately screened through the use of berms and the vegetated buffer.
- As noted in the June 2010 Traffic Study, the relocated entrance will result in a delay increase for travelers entering Route 302 from Nash Road at the peak AM and PM hours.
- The relocated entrance on Nash Road will likely result no impact or a slightly positive impact for property owners on Route 302 due to the reduction in truck traffic impacts from the quarry’s currently approved access on Route 302.
- Year round operations, as approved in the 2<sup>nd</sup> Amendment, will likely result in noise impacts on adjacent/neighboring properties during the winter months. The quarry operation must still meet DEP standards for noise levels year round.
  - Given the importance placed on vegetation to reduce noise generated by the quarry” (p. 28), the applicant must submit information to show that sound levels from quarry operations during months when there is no vegetation to attenuate noise levels will still meet the noise standards of the ordinance.

### **CONCLUSIONS**

1. The plan for development **reflects** the natural capacities of the site to support development.

2. Buildings, lots, and support facilities **will** be clustered in those portions of the site that have the most suitable conditions for development.
3. Environmentally sensitive areas, including but not limited to, wetlands; steep slopes; flood plains; significant wildlife habitats, fisheries, and scenic areas; habitat for rare and endangered plants and animals; unique natural communities and natural areas; and, sand and gravel aquifers **will** be maintained and protected to the maximum extent.
4. The proposed site plan **has** sufficient water available for the reasonably foreseeable needs of the site plan.
5. The proposed site plan **will not** cause unreasonable soil erosion or a reduction in the land's capacity to hold water so that a dangerous or unhealthy condition results.
6. The proposed use and layout **will** be of such a nature that it will make vehicular or pedestrian traffic no more hazardous than is normal for the area involved.
7. The proposed site plan **will** provide for adequate sewage waste disposal.
8. The proposed site plan **conforms** to a duly adopted site plan regulation or ordinance, comprehensive plan, development plan, or land use plan.
9. The developer **has** adequate financial capacity to meet the standards of this section.
10. The proposed site plan **will not** alone or in conjunction with existing activities, adversely affect the quality or quantity of ground water.
11. The proposed site plan **will** provide for adequate storm water management.
12. The proposed location and height of buildings or structure walls and fences, parking, loading and landscaping shall be such that it **will not** interfere or discourage the appropriate development in the use of land adjacent to the proposed site or unreasonably affect its value.
13. On-site landscaping **does** provide adequate protection to neighboring properties from detrimental features of the development that could be avoided by adequate landscaping.

#### CONDITIONS

1. Approval is dependant upon, and limited to, the proposals and plans contained in the application dated August 30, 2010, and supporting documents and oral representations submitted and affirmed by the applicant, and conditions, if any, imposed by the Planning Board, and any variation from such plans, proposals and supporting documents and representations are subject to review and approval by the Planning Board or the Town Planner in accordance with Section 814 of the Land Use Ordinance.
2. ~~The applicant shall implement the recommendations on page 6 of the Sweet Associates Revised Hydrogeological Investigation dated May 25, 2007. These include groundwater level monitoring, installation of a drilled well for the existing residence, and groundwater quality and quantity testing. Groundwater level and quality monitoring must comply with Maine DEP Order #L-25038-80-A-N, and subsequent Orders.~~
3. Unless prohibited by State or Federal law, the "Diesel Spill Prevention and Countermeasure Plan" must be revised so that the Windham Fire and Rescue Department is the first point of contact in the event of an emergency.
4. The mature trees outside of the tree line area depicted on sheet 3 of 6 shall not be removed during the lifetime of the quarry operation. This does not include mature trees that pose a safety hazard due to death, disease or blowdown.

5. This approval is limited to the quarry and reclamation plans. Any proposed future uses of the reclaimed area or property will require approvals at the time that they are proposed and must comply with zoning and other land use requirements in effect at the time that those approvals are sought.
6. No contaminated soil shall be used in the filling of land to accomplish the required reclamation plan.
7. ~~No ground vibration shall be produced which does not meet the standards contained in 38 M.R.S.A. Section 490-Z14I. Furthermore, the 2.0 PPV standard of 38 M.R.S.A. Section 490-Z14I shall be limited to the property line, rather than the nearest inhabitable structure not owned or controlled by the developer. Each blast shall be monitored by a seismograph that has been calibrated within the last year.~~
8. ~~Mineral extraction must remain five (5) feet above the seasonal high water table.~~
9. ~~The MDEP requires that a new test well be installed for every five acres of mineral extraction. Each time the location of a new test well is determined, the plans must be updated to depict the well's placement. The revised plans must be supplied to the Town of Windham.~~
10. Vegetation at the intersection of Nash Road and Highway 302 on the east side must be kept cut back and trimmed below 30 inches from the edge of pavement to the toe of the slope for the embankment along the site's frontage.
11. A traffic count be conducted two years hence and the results submitted to the Town of Windham. The traffic count will be conducted by a 3<sup>rd</sup> party, and scheduled by the Town. All costs will be paid by the applicant. A new traffic study will be triggered if the count peak is more than 36 trips on Nash Road in and out of the Quarry per hour.
12. The former entrance onto Route 302 shall be replanted.
13. ~~Temporary fencing around the active quarry area, and~~ permanent fencing around the entire quarry perimeter are not required by the town beyond any state or federal requirements.
14. This project must have vibration levels in compliance with sections 604(H) and 606(A) of the Windham Land Use Ordinance.
15. Year around operations of the quarry are permitted, a noise test shall be conducted by the applicant with coordination by town staff in the Spring of 2011 before the leaves come out.
16. Utility lines associated with the maintenance building shall be installed underground, per the Site Plan Ordinance.
17. The former entrance onto Route 302 shall be tiered, loamed and seeded, and two offset rows of 2-foot tall white pines shall be planted on the berm at the top of the former entrance no later than October 15, 2011.
18. The quarry entrance will be paved, the security gate installed, and the stormwater pond shall be completed by July 31, 2011.
19. Temporary fencing shall be installed around the active portion of the quarry on the berm. Orange snow fencing staked every 10 feet will satisfy this condition of approval.



The Groundwater Contour Map, presented in Appendix E depicts the approximate surface of the historic seasonal high water table on-site. Based this map, hydraulic gradients on-site range from 2% near Roosevelt Trail to 25% at the height of land. Groundwater on-site does not simply flow perpendicular to the groundwater contours because the direction of flow in a bedrock aquifer is controlled by the orientation of water bearing fractures.


### CONCLUSIONS AND RECOMMENDATIONS:

The results of the hydrogeological investigation indicate that the elevation of the groundwater table on-site is favorable for the construction of a modest quarry. However, it is inevitable that any development will alter the existing groundwater and surface water resources on-site. The following are a list of conclusions and recommendations:

- Groundwater level monitoring must be conducted throughout the lifetime of the quarry. Monitoring should be conducted once in March and August and biweekly in April, May and June. Data from monitoring wells MW-12 and MW-13 will allow a geologist to assess the potential for affecting the elevation of the groundwater table north-northeast of the site.
- Install a drilled bedrock well to replace the dug well currently serving the existing residence on-site. This well can be incorporated into the groundwater monitoring program that is required by the Maine Department of Environmental Protection.
- Provided that the explosives used on-site do not create perchlorates and the *Performance Standards for the Storage of Petroleum Products* are followed, there should be no adverse affects to groundwater quality.
- The well quality and quantity testing conducted as part of this report will serve as an important and rarely available tool that can be used to assess whether or not the development of the site has an impact on the quality and yield of wells serving nearby properties.
- A positive peer review of the Groundwater Contour Map and the methods used in this study has been completed by R.W. Gillespie & Associates, Inc. A copy of the peer review is enclosed (Appendix F).



Steve Marcotte  
Project Geologist



Richard A. Sweet  
Certified Geologist #100

