

VERMONT ENVIRONMENTAL BOARD
10 V.S.A. §§ 6001-6092

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

RE: McLean Enterprises Corporation Land Use Permit #2S1147-1-EB

This is an appeal of the District #8 Environmental Commission's (Commission)¹ grant of Land Use Permit #2S1147-1 (Permit) to McLean Enterprises Corporation (Permittee) authorizing the operation of an open face rock quarry; the construction of an access road to Route 131; the construction of a 2,280 square feet processing shop with a 0.75 acre storage yard, for up to 20 employees, on a 325 acre parcel (Project). This parcel is located between Route 131 and Tierney Road, west of Cavendish Village in the Town of Cavendish, Vermont.

I. PROCEDURAL HISTORY

On February 19, 2003, the Commission issued Land Use Permit #251147-1 (Permit) and Findings of Fact, Conclusions of Law and Order (Decision) authorizing the Permittee to operate two open face rock quarries; construct one mile of access road to Route 131; construct a 2280 square foot processing shop with 0.75 acre storage yard for up to 20 employees on a 325 acre parcel.

On March 18, 2003, and March 19, 2003, the parties to the proceeding filed motions to alter.

On April 21, 2003, the Commission issued a Memorandum of Decision on the Motions to Alter.

On May 1, 2003, Suzanne Meaney, Carol Behrman, Chris Kelly, Sean Fitzpatrick, Terrence O'Brien, Deborah Harrison, George Timko, Robin Timko, Howard W. Merritt, Jr. and Jean Stubelek (collectively Appellants) filed a Motion with the Board for an immediate short term stay and a long term stay and a Notice of Appeal of the Commission decision of April 21, 2003.

On May 2, 2003, Chair issued a Chair's Preliminary Stay Order.

On May 3, 2003, Permittee filed a Motion to Dissolve Preliminary Stay.

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District #8 Environmental Commission was assigned this application by the Board Chair due to the en bloc recusal by the District #2 Environmental Commission, precipitated by the participation in this case by District #2 Environmental Commission staff who live in Cavendish.

On May 8, 2003, the Town of Cavendish filed a motion in support of a long term stay as did the Appellants.

On May 8, 2003 the Chair heard oral argument on the Permittee's motion to dissolve the stay.

On May 8, 2003, the Appellants filed a Opposition to Motion to Dissolve the Preliminary Stay.

On May 9, 2003, the Town of Cavendish Planning Commission and the Cavendish Board of Selectmen filed statements in support of the Stay Order.

On May 12, 2003, John P. Mills filed a cross appeal of the Permit and Decision issued on February 19, 2003 and Order on Motions to Alter issued on April 21, 2003.

On May 13, 2003, the Chair issued a Second Preliminary Stay Order denying in part and granting in part the Permittee's Motion to Dissolve the Stay.

On May 14, 2003, the Permittee filed Notice of Cross Appeal to the Permit.

On May 15, 2003, Mr. Mills filed a Memorandum in Support of the Stay.

On May 20, 2003, William A. Hunter filed Notice of Cross Appeal to the Permit and Decision issued on February 19, 2003, and the Order on Motion to Alter issued on April 21, 2003.

On May 20, 2003, Permittee filed notice of intent to halt the current construction of the Project.

On May 20, 2003, Appellants filed their objection to the proposed Permittee actions.

On May 21, 2003, the Board deliberated on the Appellants' request for a long term stay and on May 22, 2003, the Board issued a Memorandum of Decision and Stay Order granting the stay request concerning blasting, drilling and cutting down of trees for road construction and cancelling the scheduled Board hearing.

On June 5, 2003, Chair Powden convened a prehearing conference and on June 10, 2003, she issued a Prehearing Conference Report and Order (PCRO).

On August 27, 2003 and September 17, 2003 the Board deliberated on granting party status.

On September 19, 2003, Chair Powden issued a Chair's Order further amending the PCRO extending filing dates for Prefiled Direct Testimony and Exhibits, Prefiled Rebuttal Testimony, Proposed Findings of Fact and Evidentiary Objections.

On September 19, 2003, the Board issued a Memorandum of Decision on party status for the following petitioners;

Department of Historical Preservation (DHP);
Agency of Natural Resources (ANR);
Southern Windsor County Regional Planning Commission (SWCRPC);
Town of Cavendish Planning Commission (CPC);
Town of Cavendish Select Board (CSB);
John H. Mills;
Suzanne Meaney, Carol Behrman, Chris Kelly, Sean Fitzpatrick, Terrence O'Brien, Deborah Harrison, George and Robin Timko, Howard W. Merritt, Jr., Jean Stubelek, Edward and Virginia Garrow, Neil and Nancy Corliss, Joannah Lyn Merriman, John W. And Elizabeth A. Becker, Temple White, Charles and Joyce Ringhel, Richard W. and Sally Kiehnle, Blake and Gertrude Frost, James and Mary Ellen Wichelhaus, Dean and Terese Harrington, Tony and Cheryl Jenkins;
William A. Hunter;
Mary McCallum.

On October 16, 2003, Appellants filed a motion requesting the Board to issue a 30 day continuance or remand the case back to the Commission.

On October 20, 2003, the Permittee filed a response in opposition to the Appellants' motion.

Between October 20, 2003 and October 23, 2003, ANR, CPC, SWCRPC, DHP and Mr. Mills filed memoranda in support of the Appellants' motion.

On October 21, 2003 the Appellants filed a reply memorandum to the Permittee's response and on October 22, 2003, the Board deliberated.

On October 23, 2003 the Board issued a Memorandum of Decision approving a continuance of the prefiled rebuttal testimony, findings of fact and conclusions of law, and evidentiary objections. The hearing dates were not changed and the Appellants' request for a remand was taken under advisement.

On December 1, 2003 a Second Prehearing Conference was held.

Hearings took place December 3, 2003, December 4, 2003, December 10, 2003, December 11, 2003, December 30, 2003, January 7, 2004, January 14, 2004, March 17, 2004, March 31, 2004, April 7, 2004, April 21, 2004, April 28, 2004, April 29, 2004, May 26, 2004 and June 2, 2004.

On April 9, 2004 the Permittee submitted a motion to lift the stay. Appellants filed a motion in opposition to lifting the stay.

On April 21, 2004, the Board deliberated on the Permittee's motion and on May 4, 2004, a Memorandum of Decision was issued denying Permittee's motion.

On June 1, 2004 Appellants submitted a request for the recusal of Board member Marsh. Board member Marsh recused himself from further consideration of this matter.

The Board deliberated on June 23, 2004, July 7, 2004, July 21, 2004, September 15, 2004, September 22, 2004, October 27, 2004, November 10, 2004, November 17, 2004, and November 19, 2004.

II. MOTION FOR A REMAND

On October 16, 2003, the Appellants requested that the Board continue certain deadlines or remand the case back to the Commission because the Permittee submitted new evidence and changed the Project from that which had been reviewed by the Commission. The Board granted the request for a continuance and took the request for a remand under advisement.

The Appellants claim they were prejudiced by the Permittee's use of different evidence such as hydrogeologic and noise studies that the Commission never reviewed. Since this is a *de novo* hearing, the Permittee is free to submit whatever evidence it deems appropriate, including additional evidence in response to possible evidentiary shortcomings in prior proceedings. Any potential prejudice to the Appellants was cured by providing them additional time to file rebuttal testimony.

The Appellants also claim that the Permittee made several changes to the access road, landscaping plan, and equipment used. Depending on the nature of the changes, projects that undergo changes while before the Board may have to be remanded for review by the district commission.

If the change does not create impacts to new parties or new impacts on Criteria not at issue before the Board, the Board can retain jurisdiction and decide the matter. See *Design Contempo, Inc.*, #3W0370-2-EB Findings of Fact, Conclusions of Law, and Order (Dec. 20, 2001); *Brewster River Land Co., LLC*, #5L1348-EB Findings of Fact,

Conclusions of Law, and Order (Feb. 22, 2001); *Otter Creek Development, LLC* #1R0535-3-EB Findings of Fact, Conclusions of Law, and Order (Apr. 19, 2001); *Andrew and Peggy Rogstad*, #2S1011-EB Findings of Fact, Conclusions of Law, and Order (Dec. 19, 1996). However, when a project is changed on appeal and the changes may create impacts to new parties or new impacts on Criteria not at issue before the Board, the matter should be remanded back to the district commission. *Spear Street Associates*, #4C0489-1-EB Memorandum of Decision at 4. (Apr. 4, 1984).

In the instant case, the changes to the Project do not affect new parties because there is no new land within the Project tract that is undergoing development and the surrounding neighbors are already parties. Likewise, no additional Criteria are impacted because so many Criteria are already on appeal, including most importantly, Criteria 4, 5, and 8 which are those Criteria affected by the proposed changes. Therefore, the Appellants request for a remand is denied.

III. ISSUES

1. Whether, and to what extent the Project complies with Criterion 1.
2. Whether, and to what extent the Project complies with Criterion 2.
3. Whether, and to what extent the Project complies with Criterion 3.
4. Whether, and to what extent the Project complies with Criterion 4.
5. Whether, and to what extent the Project complies with Criterion 5.
6. Whether, and to what extent the Project complies with Criterion 8.
7. Whether, and to what extent the Project complies with Criterion 8(A).
8. Whether, and to what extent the Project complies with Criterion 9(E).
9. Whether, and to what extent the Project complies with Criterion 9(K).
10. Whether, and to what extent the Project complies with Criterion 10.

IV. FINDINGS OF FACT

To the extent that any proposed findings of fact are included herein, they are granted; otherwise, they are denied. See *Secretary, Agency of Natural Resources v. Upper Valley Regional Landfill Corp.*, 167 Vt. 228, 241-242 (1997); *Petition of Village of Hardwick Electric Department*, 143 Vt. 437, 445 (1983). Topic headings are for

organizational purposes only. Facts stated and terms defined in the procedural summary are incorporated herein.

The Tract of Land

1. Permittee seeks a permit for a mica schist² stone quarry on approximately 325 acres of land located on the north side of Scenic State Highway 131 (Route 131) in the Town of Cavendish, Vermont.
2. Title to the subject property is vested in the Permittee by deed dated January 31, 2001, recorded at Book 52, Page 67, of the Cavendish Land Records. The Permittee owns all rights and interests necessary to construct the Project improvements and to carry on the Project operations.
3. The Project site is located between the village centers of Cavendish and Proctorsville.
4. The Project site is bounded on the south by Route 131, bounded on the north by Davis Road, bounded on the east by several property owners including Mr. Mills, and bounded on the west by several property owners including Ms. Stubelek.
5. The Green Mountain Railroad runs through the valley on the south side of the Black River. Trains pass through a couple of times a day.
6. The site is rugged, hilly, and predominantly wooded with mature and young mixed deciduous and coniferous vegetation. The steep hillside where the access road is proposed has many prominent rock ledges.

Project Overview

7. The Project includes two officially designated quarry extraction sites for the production of 10,000 cubic yards of finished product per year over a period of 50 years. These extraction areas are referred to herein as the "North Quarry" and the "South Quarry." The North Quarry area is 6.5 acres and the Permittee anticipates a rock removal rate of 300,000 cubic yards. The South Quarry is 4 acres and the Permittee anticipates a rock removal rate of 200,000 cubic yards.
8. The Permittee also plans to quarry 40,000 cubic yards of marketable stone from the hillside during construction of the access road. This stone would be

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To the extent that evidence in the record refers to the stone as granite, the Board notes that the stone is mica schist.

transported to New Hampshire for processing and sale on a regular basis as it is quarried.

9. The Project involves construction of a 2,280 square foot mill/office/retail shop and related parking and staging areas, construction of a wastewater disposal and water supply system, establishment of a crushing site and related sumps, septic areas and other utilities, and fixtures improvements.
10. The Project involves construction of a new, one mile long access road off Route 131. The access road is planned to climb a steep hillside from Route 131 up a portion of the Project site shaped as a distinct "panhandle."
11. The access road would traverse the width of the narrow panhandle in a series of switchbacks that nearly abut Mr. Mills' and Ms. Stubelek's properties.

Access Road Construction

12. Access road construction would begin by creating a staging area adjacent to Route 131. The Permittee would then blast and remove stone, moving up the panhandle as the road is built.
13. Building the access road without quarrying the stone would take one construction season and a few months of a second construction season. Because quarrying the stone requires additional work due to handling the stone, access road construction with quarrying would likely take 2-4 construction seasons. The access road construction would require removal of 54,000 cubic yards of material. The Permittee estimates that 40,000 cubic yards would be marketable stone. The access road would essentially be a short term quarry (hillside quarry).
14. Access road construction would occur on weekdays during business hours. It would involve four pieces of equipment: 1 large excavator, 1 medium excavator, 1 rock truck (which would not be used during the first season), and 1 bucket loader or bulldozer. A drill would operate intermittently.
15. There would be 20 off-site truck loads of rock removed per day during road construction (2 per hour).
16. Blasting in connection with access road construction would consist of charges detonated 2-3 times per day. The size of the charge would vary depending upon the distance of the blast from nearby structures. The vibration frequencies of the blasts would be regulated by the blaster to eliminate lower frequencies which are destructive. This would be done by altering the length of time between blasts, known as delays. During blasting in connection with access road construction,

traffic would be stopped for a few minutes by flag men, as approved by Vermont Agency of Transportation (VTRANS).

Project Operations Schedule

17. The South Quarry would operate year round. The North Quarry would not operate from December 15 to April 14 by agreement with the Department of Fish and Wildlife in order to protect the adjacent deer wintering areas.
18. Outside quarrying operations would occur from 7 am. to 5 p.m. Monday through Friday. The mill, office, and retail shop would operate from 7 a.m. to 5 p.m. Monday through Saturday. No quarrying or mill operations would take place on Sundays or federal holidays.
19. The Project would employ approximately 20 full-time employees, including retail shop, mill and quarry workers.

Process of Extracting Stone

20. Quarrying would proceed by a traditional process for extracting dimension stone. This involves stripping soil and rocky overburden, drilling holes into the rock mass, loading and stemming light explosives and detonating those explosives in a series of controlled delays to prevent excess block breakage.
21. The blasts are designed to loosen slabs as opposed to more massive blocks typical of granite quarries. The blasts are also designed not to pulverize the stone.
22. The large slabs dislodged in this manner would then be split into smaller pieces by hand and by mechanical means. These pieces would either be palletized for sale or transported to the mill for processing into finished products. These products would then be shipped by truck for sale elsewhere or sold in the on-site retail shop.

Permits

23. The Project mill has received a Water Supply Waste Water Disposal Permit from ANR.
24. ANR has concluded that the Project is eligible for coverage under the National Pollutant Discharge Elimination System General Permit 3-9001 (NPDES Permit) for construction activities relating to the rock quarries and access road. It is not

clear from the NPDES Permit that ANR reviewed the Permittee's plans to place 1,200 to 1,600 cubic yards of topsoil on the hillside where the access road and hillside quarry are planned.

25. The Project has received a VTRANS Access Permit (VTRANS Permit) for construction of the access road.
26. The Water Quality Division of ANR has determined that the Project does not require a Stormwater Discharge Permit. Nevertheless, a Stormwater Management and Erosion Control Plan has been prepared for the Project.

Project Equipment

27. Equipment to be kept and used on-site includes: 2 excavators with a bucket; 1 excavator with a hammer; 2 skid steer loaders; 2 standard loaders; 1 haul truck to transport rock to the mill; a pneumatic drill with mobile compressor; 5 saws located inside the mill; and various compressors. A small capacity portable crusher (less than 150 tons/hour) would be brought onto the site once or twice per year for a month-long crushing period and would be located in the crushing area depicted on the Site Plan.

Criterion 1 (Air Pollution)

28. The Project involves the processing of stone products at the quarry faces, the crusher, and in the mill.
29. Isolation distances between the North and South Quarry extraction sites and adjoining residences are a minimum of 800 feet.
30. The South Quarry is only about 50 feet from the Mills' property boundary.
31. Thirty percent of the rock removed from the quarry would be unsuitable for processing as structural product and would be crushed. A crushing area on the site would be located a minimum of 1,200 feet from the closest occupied house with extensive intervening vegetation. The crusher would be portable and have a maximum capacity of less than 150 tons per hour. It would operate at the Project site only twice per year for approximately one month at a time. The crusher site would be level with a berm on the east and south sides as shown on the site plans. No visible air-borne dust from blasting or crushing would occur off the Project site.

32. The pollutants which would be generated by diesel engines, blasting, drilling, crushing and fugitive dust from quarry operations, access road, haul roads and uncovered or partially covered trucks are as follows:
 - Particulate matter less than 10 micrometers diameter (PM 10)
 - Particulate matter less than 2.5 micrometers diameter (PM 2.5)
 - Carbon monoxide (CO)
 - Nitrogen Oxides (NO_x)
 - Sulfur dioxide(SO₂)
 - Crystalline Silica
33. Diesel motors produce more exhaust than gasoline engines. This exhaust consists of minute particulates called diesel particulate matter. Inhaling particulates can have acute and chronic health effects, especially among the elderly, children, and those with emphysema or respiratory system conditions.
34. All equipment at the Project, including diesel engines, will be equipped with factory installed pollution and emission control devices.
35. The Project does not require any state or federal air quality permits. General dust on the access road and on other quarry areas would be controlled using water and calcium chloride applications, as needed.
36. Nevertheless, the Permittee performed a comprehensive air quality impact study of the Project's operations to determine the concentration of off-site air pollutants.
37. The Permittee used the EPA Industrial Source Complex Model, ISC Prime to analyze potential air pollutants from the North and South Quarries for which there are National Ambient Air Quality Standards and Vermont Ambient Air Quality Standards. This model is the method preferred by the State of Vermont. The Permittee used the same assumptions, methods, and provisions which would be used if air dispersion modeling were required by the ANR, Air Quality Division.
38. The air impact study assumed that the equipment and production were being operated at maximum capacity and that no vegetation existed on the site to intercept air pollutants.
39. The air quality analysis demonstrated that the Permittee's annual extraction of 10,000 cubic yards of material would meet all Vermont and federal ambient air quality standards, as measured at the Project property line. The Project operating at that level of extraction satisfies the National Ambient Air Quality Standards, which is intended to protect the health of individuals.

40. The Permittee's air analysis fails to include the air pollution resulting from the multi-year construction of the access road and quarrying of the hillside. The amount of material to be removed per year during construction of the access road and hillside quarry exceeds the annual extraction rate for the North and South Quarries. There is no evidence concerning the diesel emissions, particulate matter, and fugitive particulate matter, etc. from the construction of the access road and hillside quarry.
41. Some of the neighboring residences are much closer to the access road and hillside quarry than any other residence is to the North or South quarries. These residents include elderly people and children with respiratory ailments who are more vulnerable to air pollution than the average person.
42. Noise levels from the Project may be annoying but will not be high enough to cause hearing loss, hearing damage or other physical harm to residents in the neighborhood.
43. Quarry workers would wear noise and dust protection gear as required by the Federal Mine Safety and Health Administration which would adequately protect them from these impacts.

Criterion 1 (water)

44. The Project is within the Black River watershed. Most of the proposed North Quarry site, and approximately 60% of the South Quarry site, as well as a majority of the lands that would be affected by road construction and other earth disturbance, are within this watershed. A small portion of the North Quarry site would drain towards Twenty Mile Stream. The remainder of the South Quarry site would drain either to the river setback (also referred to as Stubelek Pond) and then into the Black River, or to the culvert under Route 131 and then into the Black River, a short distance away.
45. The following water bodies and wetlands could potentially be impacted by the proposed project: an unnamed perennial stream which flows through the Project site over the Mills property and into the Black River, the Stubelek Pond, the Black River itself, the existing Class II and III wetlands on the site, and the Mills' Spring. The potential for impacts to Twenty Mile Stream also exists, due to the section of the North Quarry which drains toward this water body.
46. The hillside where the access road is planned is permeated with fractures in the bedrock through which water is released to flow down the hillside.

47. The toe of the slope of the hillside is immediately adjacent to Route 131. There are culverts on the Permittee's side of Route 131 which carry runoff directly into the Stubelek Pond. There is also a small channel between the Stubelek Pond and the Black River which at times conveys flow to the Black River.
48. The shop/office/retail building would include an onsite sewage disposal system for up to 20 employees. The Permittee obtained a Water Supply/Wastewater Disposal Permit for this sewage disposal system.
49. The Project does not require an Industrial Discharge Permit from the ANR.
50. Stormwater would be treated and discharged from the North Quarry by way of a so-called "leaky berm" disposal system. Stormwater would accumulate in a sump in the North Quarry to allow some sediment to settle out. Water would then be pumped up to a fore-bay where additional pretreatment would occur. It would then be discharged into a sedimentation basin with the leaky berm at one end.
51. The leaky berm would be constructed of sand, geo-textile fabric, and rock. Water would filter out through the leaky berm and discharge by overland sheet flow. Perforated pipes would pass through the berm as an over-flow device.
52. Leaky berms can clog due to sediment in the water settling in the retention basin and coating the bottom of the basin. Clogging would lead to diminished performance and potentially system failure. The ability of the leaky berm disposal system to function properly depends on the amount of stormwater and groundwater it is designed to handle. The Permittee projects that a "couple of hundred gallons" would have to be dewatered each day.
53. The Appellants project that the North Quarry groundwater inflow rates would be between 7,435 and 12,635 gallons per day and the South Quarry inflow rates between 5,460 gallons and 7,390 gallons per day.
54. While the Board does not necessarily adopt the Appellant's figures, the Board finds that the amount of quarry dewatering would likely be substantially greater than the "couple of hundred gallons" the Permittee anticipates.
55. On the west side of the proposed North Quarry there is a significant water-bearing fracture that is the source of an intermittent stream which feeds the wetlands southeast of the quarry. Blasting in this area would likely cause the water from this fracture to increase.

56. Regular maintenance of the leaky berm disposal system could address the potential clogging due to sediment settling in the retention basin. Permittee did not submit a maintenance plan for the leaky berm disposal system.
57. Permittee did not submit a water quality monitoring plan.
58. There is a potential for the release of harmful or toxic materials into ground water or the environment from fuel or other chemical spillage during refueling of quarry equipment and leaks from quarry equipment.
59. Fractured mica schist bedrock is more susceptible to contamination due to general lack of filtering relative to that found in unconsolidated sediments.
60. The Permittee has specified that fueling of all mobile quarry vehicles would occur at a designated refueling station depicted on the Site Plan. This area includes berming and leakage control measures, including an impervious floor.
61. However, not all equipment would be refueled at the refueling station. Some refueling would occur while equipment that is not mobile is located in the quarries. In addition, the area between the fuel pump and the equipment to be refueled would not have an impervious floor.
62. The Permittee has prepared a spill response protocol for any fuel or hydraulic leaks or similar spillage of chemicals outside of the refueling area. The protocol generally calls for immediate cessation of activity in the vicinity of the spill, evacuation of the area by non-essential personnel and containment and cleanup of spills using spill control kits which are to be kept on-site and in quarry vehicles at all times.
63. The employees would be briefed on the Spill Control Plan.

Criterion 2

64. The Permittee plans to drill a bedrock well to establish a potable water supply system for its mill/office/retail shop, for which it has acquired a Water Supply and Wastewater Disposal Permit from the Department of Environmental Conservation of ANR. This would provide the approximately 300 gallons per day of domestic water supply required by the mill, office, and retail shop.
65. In addition to the 300 gallons of water, a supply of less than 50 gallons of water would be needed per day for cooling the saws used during stone processing. This water would be re-circulated through a treatment basin. In total, the Project would require 350 gallons of water per day.

66. There are substantial quantities of groundwater present within the bedrock aquifer at the site. There is sufficient water available for all of the Project's requirements.

Criterion 3

67. The current water supply and quality at the homes surrounding the Project is excellent. The residents have strong water pressure and an ample supply of water. No Appellants testified that they ever had a shortage of water.
68. The Permittee constructed two bedrock boreholes on the Project site to determine the groundwater flow direction and groundwater transmissivity. One borehole was located in the North Quarry, the other in the South Quarry.
69. Testing on the boreholes over a one week period in August of 2003 indicated that the depth to the groundwater within the bedrock is 17 feet in the North Quarry and 4 feet in the South Quarry.
70. The maximum depth of excavation in the North Quarry would be approximately 90 feet and approximately 70 feet in the South Quarry.
71. The drawdown/recovery tests indicated that groundwater moves slowly through the fractures in the bedrock on the Project site.
72. All of the local water supply wells are located below the elevation of the quarry floors, and beyond the distance of potential groundwater lowering.
73. The closest water supply to the North Quarry is a drilled bedrock well serving the O'Brien/Harrison residence on Tierney Road, located 1,200 feet away from the North Quarry to the northeast. The ground elevation at this well is about 1,055 feet, which is 85 feet lower than the floor of the North Quarry.
74. There is a well serving the Merritt Camper on the Stubelek property, located about 500 feet southwest of the South Quarry. The ground elevation at this well is about 925 feet, which is about 83 feet lower than the floor of the South Quarry. Other properties near the South Quarry which are served by wells include: Kelly/Fitzpatrick, primary Stubelek residence, Jenkins, Mills/Aloan, Cooney, Stoneway.
75. The Permittee proposes that any groundwater intercepted by the quarry holes would infiltrate back into the surrounding soil and bedrock by use of a leaky berm disposal system. The leaky berm basins are located hydro-geologically upstream

from the neighboring wells. Thus, the water would eventually be returned through seepage to the same aquifer.

76. The bedrock formations at the Project site are fractured, with many fractures interconnecting to form a bedrock aquifer. Groundwater movement within a fractured bedrock aquifer depends upon fracture orientation and the interconnectedness of the fractures.
77. Blasting during quarry operations could potentially affect the fracture network of the bedrock by physically changing fracture characteristics, such as the interconnectedness of fractures and fracture dimensions. Altering the fracture network could change the rate of groundwater movement within the aquifer to existing water supply wells. However, even with an altered fracture network, the water would remain in the same aquifer.
78. The recharge area for a home in the Project area is a relatively small area. Permittee testified that the recharge area is approximately 1 ½ acres for a three bedroom house. There was no evidence contradicting this testimony.

Criterion 4

79. The total earth disturbance on site would be approximately 22 acres.
80. The hillside where the access road is proposed has very steep slopes with the average slope greater than 25%.
81. The hillside is permeated with fractures in the bedrock which release water that flows down the hillside. The toe of the slope of the hillside is immediately adjacent to Route 131.
82. The Permittee submitted a Stormwater Management and Erosion Control Plan (Erosion Control Plan). The Erosion Control Plan includes a grading plan for the entire Project. Grading would be performed only in the summer months.
83. Clearing activities would be completed in one continuous operation. Stumps would be removed with an excavator and hauled to either an upland area on-site or offsite.
84. Permanent stormwater management structures, such as culverts, check dams, culvert inlet and outlet protections, and energy dissipaters would be incorporated into the road construction at the earliest opportunity during the cut and fill operation.

85. No winter construction would be allowed for the Project. Any areas disturbed after September 15 would have the soil erosion control measures in place prior to October 15.
86. In order to address problematic areas on the hillside where the access road is planned, the Erosion Control Plan amongst other things proposes; constructing a temporary diversion to direct surface runoff from disturbed areas, applying mulch on unfinished slopes as a temporary soil erosion control measure even if slopes are not completed and ready for seed, placing hay bale dikes in areas where sediment needs to be trapped, and using silt fencing.
87. The Permittee plans to remove 54,000 cubic yards of stone and earth from the hillside quarry. The Permittee's Landscaping Plan proposes stockpiling then reusing 1,200 to 1,600 cubic yards of soil. The Permittee would also supplement the existing soil with 400 cubic yards of top soil to create a soil depth of three feet.
88. The soil would be placed on the exposed bedrock after the access road has been excavated. The soil would then be graded, seeded, fertilized and mulched in accordance with the Erosion Control Plan. The trees would be planted after the ground cover has become established.
89. The topsoil may not stay in place due to the combination of the steep slopes, the slickness of the exposed bedrock, the fractures in the bedrock which release water, and seasonal precipitation. The soil would likely remain on the hillside in those patches where groundcover and naturally regenerating scrubby vegetation and planted trees became established.

Criterion 5

90. Route 131 is a well-traveled state highway that runs between Interstate 91 and Route 103. Route 131 has an average weekday volume of approximately 3,000 vehicles per day. Approximately 11% of these vehicles are trucks and 3% are tractor trailers.
91. Route 131 is a standard state highway road width. Near the Project access road it is winding, with double yellow lines denoting no passing, and there are no shoulders on either side of the road except for a small scenic and fishing pull-off on the Black River side of the road.
92. The proposed temporary access road would have only marginally safe site distances.

93. The posted speed limit for the section of Route 131 near the access road is 40 miles per hour. Vehicles frequently drive at faster speeds on that section of Route 131.
94. The VTRANS Permit requires that the access road intersection meet VTRANS B-71 standards.
95. The VTRANS Permit for the access road was issued on May 1, 2003. The VTRANS Permit requires the work to be completed by December 1, 2003. Although Permittee has informed the Board that construction of the access road would take at least two construction seasons, the VTRANS Permit requires the construction be completed in one season.
96. The access road intersects Route 131 in an area that is essentially a series of curves. Sight distances in both directions from the access road meet or exceed 560 feet which is greater than the VTRANS B-71 standard of 440 feet.
97. There was no evidence presented that demonstrated that trucks making right turns onto or from the access road would be able to make the turn without temporarily using both lanes of Route 131. The use of both lanes would impede traffic and possibly result in a dangerous situation.
98. Without taking into account the potential problems from turning trucks, the Level of Service (LOS) at the intersection of the access road and Route 131 would be a LOS B.
99. There was no evidence presented that there are any existing high accident locations in the vicinity of the Project.
100. The maximum grade of the access road is 10%. The width and construction of the access road are adequate to accommodate the Project's anticipated traffic.

Truck Trips for Access Road Construction and Hillside Quarry

101. Removing 54,000 cubic yards of stone from the access road hillside would require approximately 6,250 round trips using a 10-wheel dump truck. If the access road was completed in two construction seasons, the number of truck trips necessary to haul the stone from the access road would be approximately five trips each hour from 7 a.m. to 5 p.m. each weekday of each construction season.

Truck Trips Not Including Road Construction

102. Offsite truck trips would occur Monday through Saturday from 7 a.m. to 5 p.m., except for federal holidays. During the maximum operating period when both quarries are functioning, between April 15th to December 14th, an average of 15 off-site truck round trips per day would occur. A truck is anything larger than a standard UPS residential delivery truck.

Crushed Product - 2 round trips per day (average) - dump truck

Processed Product - 9 round trips per day (average) - light truck

- 3 round trips per day (average) - dump truck

- 1 round trip per day (average)- tractor trailer

103. During the period when only the South Quarry is operating, between December 15th to April 14th an average of 8 off-site truck round trips per day would occur as follows:

Crushed Product - 1 round trip per day (average) - dump truck

Processed Product - 5 round trips per day (average) - light truck

- 1 round trip per day (average) - dump truck

- 1 round trip per day (average) - tractor trailer

104. These figures do not account for the number of trips taken by customers driving their own trucks to the facility to purchase product.
105. It is estimated that the maximum daily loaded trips for crushed and processed product could be far more than average.
106. Trucks turning to and from the access road would cause some congestion on Route 131 and may occasionally cause traffic to stop.
107. A truck loaded with stone leaving the access road would take approximately 15 seconds to exit the access road and get onto Route 131 and another 30 to accelerate up to 40 miles per hour. During this period the trucks would also cause some congestion.
108. Relative to the existing traffic on Route 131, the Project would result in a modest increase in truck traffic. The increase may result in cars forming a "platoon" behind a slow moving truck until there is a safe opportunity to pass. While platoons of cars behind a truck can be annoying to someone in a rush, it is not

an unsafe condition. Platooning also creates gaps in the flow of traffic that allow other vehicles to turn onto or off a road in a safe manner.

Criterion 8

Context of Project

Visual Aesthetics

109. The Project site is surrounded by woodland and scattered rural residences on the north, east and west sides. The character of the area to the south of the Project is largely determined by the villages of Cavendish and Proctorsville, the scenic corridor of the Black River, Route 131, and flat open meadows along the Black River.
110. Route 131 is one of only three highways in Vermont which have been given the designation of Scenic Highway by the Transportation Board of the Vermont Agency of Transportation on the recommendation of the Scenery Preservation Council. The Town of Cavendish worked for over five years with the region and state to document Route 131's scenic value and to request that it be given the status of designated State Scenic Highway.
111. The character along the 7.65 miles of Route 131 is one of natural scenic beauty of the Black River Valley combined with the historic Vermont village character of Cavendish and Proctorsville.
112. The North and South Quarries would not be visible from Route 131. Some residences would have distant views of the North Quarry from their homes. The southeast corner of the South Quarry is about 50 feet from the Mill's property boundary. From the Black River and Proctor Piper State Forest one may have a filtered view through vegetation of the southern edge of the South Quarry depending on the seasonal variations in foliage cover.
113. The access road and hillside quarry would be highly visible in an area of outstanding scenic quality. At the time of the site visit, the Permittee had cut and removed most of the mature trees on the hillside. Therefore, the Board never saw the hillside with the trees and ground cover in place. Through viewing pictures taken before the cutting, the Board was able to determine that the hillside previously had mature trees growing on it and variable ground cover.
114. The access road would be built into very steep slopes ranging from 25% to 50%. The access road would intersect Route 131 and would be located up-slope 150 to 200 feet from the shoreline of the Black River. The access road is not adjacent

to, but would be located between, two historic stone structures which are listed on the State Register of Historic Places.

115. The access road and hillside quarry would be visible to various degrees from Route 131, the Black River corridor and the Proctor Piper State Forest. The views from the Black River and the Proctor Piper Forest are primarily mid-ground views of the access road area and hillside quarry.
116. The most visible part of the Project is the access road and hillside quarry as seen from the Route 131 corridor. These views are direct, unbroken foreground views traveling in both the eastbound and westbound directions. The access road will be carved from the steep hillside and will result in a series of high rock ledges cutting across the hill.

Planting Plan

117. The Permittee proposed a landscape/tree planting plan (Planting Plan) in an effort to mitigate the aesthetic impacts of the Project access road from Route 131.
118. After the access road is completed, soil would be placed in the planting area to establish a ground cover. In addition to the 1,200 to 1,600 cubic yards of soil located on the hillside, 400 cubic yards of top soil would be transported to the site to landscape the area adjacent to Route 131. This top soil would be brought to the site in a total of 40 ten-wheel dump truck loads over a period of 20 weeks (2 trucks per week during the time period in which landscaping is being established). The depth of the soil would need to be at least 36 inches.
119. After the soil has been stabilized by a groundcover, trees would be planted.
120. The Planting Plan was designed based on the species found in the existing forest cover adjacent to the planned access road.
121. The Planting Plan proposes planting 118 trees mostly between Route 131 and the first switchback, including 79 conifers and 39 deciduous trees (34 white spruce; 33 white pine; 12 colorado spruce; 16 sugar maples; 13 red oaks; 10 white ash).
122. The Planting Plan proposes using coniferous trees with a minimum height of 5 feet and no taller than 6 feet. The Planting Plan proposes using deciduous trees with a diameter no less than 1.5 inches and not more than 2 inches at 6 inches above the soil line of the root ball.

123. The planting of the trees would not begin until after the access road construction and hillside quarry are completed, the topsoil brought in and ground cover established. The construction of the access road and quarrying of the hillside quarry would likely require 2 to 4 construction seasons.
124. The following year the topsoil would be brought in and the ground cover established. Therefore, the trees would not likely be planted for 3-5 years. Apart from the minor benefits from ground cover and naturally regenerated scrub, the Planting Plan would provide no mitigative benefit before the trees are planted.
125. It would take several years for the trees to mature to the point of providing any significant visual buffer and natural look to the hillside. As a result, the visual impacts of the access road and quarry activity may not be significantly mitigated for close to 10 years from the beginning of the construction.
126. Since the Planting Plan proposes planting trees mostly on the lower slopes of the hillside, there is no screening created by the trees of the upper parts of the hill for viewers at a distance, such as further west along Route 131.
127. The Planting Plan does not call for any tree planting east or west of the access road. The access road traverses the entire width of a narrow panhandle extending from the main portion of the Project tract to Route 131. Any substantial existing vegetation to the east or the west of the access road and hillside quarry is not on the Project tract and outside of Permittee's control. The only trees that would block the view of the access road from the approach from the east or west on Route 131 are on the Mills or Stubelek properties.
128. There is no vegetation on the Project tract that provides visual screening of the access road or hillside quarry from either the Mill's property or the Merritt camper. Parts of the access road are less than 20 feet from Mill's property boundary. From the Merritt camper and the Mill's property boundary, there would be a direct and immediate view of the access road and hillside quarry.
129. Additional trees would need to be removed between Route 131 and the first curve in the proposed access road in order to begin construction. The trees behind them are vulnerable to being toppled. These trees, as well as trees that line the edge of the rest of the hillside would be stressed in the future by wind and other factors associated with the road construction.

Noise Context

Units of Measurement

130. Sound is measured in units called decibels (dB). The range of audible sounds are compressed into a logarithmic scale.
131. Logarithmic scales are not additive. That is, the combination of two 70 dB noise sources does not result in 140 dB; rather, the result is approximately 73 dB. Sound level meters are often equipped to give weight (A, B, and C) to sounds of differing frequencies. Noise generated by traffic on highways is measured with "A" weighted decibels (dBA). The human ear can only perceive a difference in a minimum of 3 dBA.
132. Lmax is the maximum instantaneous sound level measured.
133. The Equivalent Sound Level (Leq) is a logarithmic average of noise levels due to all sources of noise in a given area over a stated period of time (e.g. 24 hours, one year, etc.) as opposed to an instantaneous maximum level of noise at any one given point in time. Since the Leq is based on the logarithmic average sound pressure, it gives more weight to the higher decibel levels.
134. The L10, L50, and L90 are the 10th, 50th, and 90th percentile sound level. The L10 represents the sound level exceeded 10 percent of the time, the L50 is the median level, and the L90 is the level exceeded 90% of the time.
135. Since the L90 represents the quieter portion of a measurement period (90% of the observations exceed it), it is often considered the "background" level.
136. The Ldn is the day-night sound level. To calculate this using the EPA methodology, the sound level is averaged over a year with nighttime sound (10:00 PM to 7:00 AM) weighted with an extra 10 dB.

Existing Background Noise

137. The area surrounding the Project is a rural residential community. There are no commercial or industrial activities nearby. There are no sustained sharp or intermittent loud sounds such as would occur from blasting, hammering, drilling, dropping or loading of rock, or the revving of motors for large equipment.
138. The residents near the access road and hillside quarry hear the regular hum of traffic on Route 131. While the noise from car traffic is generally moderate, trucks passing regularly generate over 60 dBA as measured near homes adjacent to

Route 131. The loudest trucks generate decibel readings in the mid 70's at homes adjacent to Route 131. The existing traffic level on Route 131 of trucks larger than a UPS household truck is 89 trucks each weekday between the hours of 7 a.m. and 5 p.m. The noise at a distance of 60 feet from the center of Route 131 is at or above 60 dBA for 15-18 minutes an hour between the hours of 7 a.m. and 5 p.m. on weekdays.

139. The South Quarry is located up the hill from Route 131. Residents who live near the South Quarry but who are more insulated from the noise from Route 131, live in a quieter residential setting. Trains are audible when passing. The L90 background noise was measured in the range of 30-38 dBA.
140. The area surrounding the North Quarry is an extremely quiet residential area. There is minimal traffic and virtually no commercial or industrial noise is apparent. The only exception is that in a few locations the snow guns from Okemo Mountain were barely perceptible in the distance. The L90 background noise was measured in the range of 26 to 30 dBA.
141. The Permittee measured the existing Lmax (without the Project) at the following locations; Project boundary nearest O'Brien 73 dBA, 60 feet from Route 131 82 dBA, Proctor Piper State Forest 61 dBA. These measurements were taken over a 4 day period and represent the loudest noise measured during that time period. There was no detailed information surrounding the Permittee's data collection for the Board to make any meaningful conclusion from the above measurements. For example, a neighbor mowing the lawn during that 4 day time period could have been a single loud event in an otherwise quiet period. The Permittee's Leq (1 minute) measurement at the O'Brien property line demonstrates that the typical noise levels range from the high 20's dBA to the low 40's dBA.³

Projected Noise with Project

Character of the Noise

142. An operational quarry generates noise from sources such as rock crushers, rock drills, blasting, moving trucks. These sources generate loud sounds that do not blend in with any natural environment. Examples of instantaneous noises that may originate from a quarry are the noises generated by dropping, crushing, blasting, moving, and drilling rock.

³ The Board recognizes the difference between Leq and Lmax but can only make its findings and conclusions based on the data in evidence.

143. The expected noise from the Project is markedly different than the existing rural context of this area. The sounds that would be generated by the Project would be impulsive and more like industrial sounds than anything now part of the background of the area. The noises would be harsh and intermittent, unlike the usual sounds experienced in a rural setting and not merely louder versions of the same noises already present.

Access Road Construction and Hillside Quarry

144. This Project's noise issue is compounded by two factors. First, the access road is a steep winding road which will require the trucks to go up and down in low gears and also use engine brakes (colloquially referred to as "jake brakes") to control speed on the descent.
145. Second, some of the neighbors live very close to the access road. The access road switchbacks are as close as 20 feet from the Permittee's property boundary.
146. Mr. Merritt lives in a trailer behind the presently uninhabitable Leonard Parker House on property owned by Ms. Stubelek. His trailer is served by connected utilities including a drilled well. He is also in the process of renovating the Leonard Parker House. As a result of his work on the Leonard Parker House he would be frequently working immediately adjacent to the access road and hillside quarry.
147. The Permittee did not provide a noise analysis for the noise that would be generated during the multi-year access road construction and hillside quarry. This area is in close proximity to several Appellants, especially Mr. Merritt whose home is approximately 100 feet from the construction area. Other Appellants homes are also nearby including Fitzpatrick/Kelly (less than 200 feet away), Mr. Mills and Ms. Tyrrell (800 and 750 feet away), and Ms. Stubelek (approximately 550 feet). All of these homes would be closer to the hillside quarry than they would be to the South Quarry, yet no noise analysis has been completed on the impacts the residents would experience at and around their homes.
148. The noise generated from the access road construction and hillside quarry includes blasting two to three times a day, drilling with a compressor, an excavator with a bucket, and an excavator with a hammer. Large and small dump trucks would also be on site to move and remove materials. Approximately 54,000 cubic yards of material would need to be removed, 40,000 cubic yards of which would be saleable rock. Noise would also be generated during the time subsoil would be moved from one area of the site to the bare ledge surfaces as well as when the topsoil would need to be applied.

149. It would require approximately 6,250 round trips using a 10-wheel dump truck to remove 54,000 cubic yards of stone from the access road hillside. If the access road was completed in two construction seasons, the number of truck trips necessary to haul the stone from the access road would be approximately five trips each hour from 7 a.m. to 5 p.m. each weekday of the construction season.
150. No sound test or computer modeling was performed on this source of noise. Nonetheless, given the type of equipment that would be used and the work that would be performed, the access road construction and hillside quarry would generate substantial amounts of noise. In light of the proximity of some of the neighbors to the access road and hillside quarry, it is clear that the construction and quarrying of the hillside would generate substantially louder and more frequent noise as measured at the property boundaries, areas of frequent use, and residences than the operation of the South and North Quarry.

Access Road During Project Operations

151. On average the quarry operations would generate 15 round trips by trucks (larger than a UPS household truck) on the access road each weekday between the hours of 7 a.m. and 5 p.m. On average there would be approximately 1.5 round trips per hour between 7 a.m. and 5 p.m. on each weekday by a truck larger than a UPS home delivery truck.
152. The length of the access road from Route 131 to the top of the access road near the mill is approximately 1,500 feet. The vertical drop is approximately 150 feet, creating a grade of 10%. Loaded trucks descending this grade should not exceed a speed of 10 mph. Traveling 1500 feet at 10 mph would take about 2 minutes. An engine brake would likely be used during this descent, whether or not the truck was a "10-wheeler" or a "semi." At a distance of 50 feet, the Permittee measured the noise from a loaded truck descending the 10% grade at 71.3 dBA with the jake brakes and 73.4 dBA without.
153. Ascending the same grade, a truck would average no more than 10 mph, taking two minutes, about the same amount of time. The noise generated from trucks under these conditions would be extremely loud and out of context for the complete climb. At a distance of 50 feet, the Permittee measured the noise from an unloaded truck climbing a 10% grade at 75.5 dBA.

Quarry Operations

154. Quarrying for this type of stone involves several noise generating activities. Initially the stone must be drilled and blasted with comparatively light charges so

as to not fracture the stone extensively, but simply to dislodge it from its bedrock location. In such a procedure the resulting pieces of stone are intended to be, and are, very large. With very large pieces excessive mechanical force must be exerted from an excavator to dislodge and handle such large pieces of stone.

155. The mechanical forces exerted on the stone create loud noises of banging, pounding, scraping, and prying as well as from dropping pieces of stone to reduce their size. Stones are also reduced in size through pounding with a hoe ram. Secondary blasting on excessively large pieces may also be required.
156. The quarry operation would generally consist of blasting and stripping of overburden from the quarry face at the North and South Quarry. Holes will then be drilled into the quarry faces and light explosive charges will be inserted and detonated to split the stone into large chunks.
157. Slabs would be split at the quarry face and then transported to the mill for further processing. Processed stone will then be trucked off the site or sold from the retail shop. A certain percentage of that stone would not be removed from the site but would be crushed and then removed.

CADNA A Modeling

158. The parties offered the testimony of noise experts who used the Computer Aided Noise Abatement (CADNA A) computer model to predict noise levels. The CADNA A model predicts the dBA at receptor sites after considering the noise generating sources, topography, and other acoustical mitigating factors such as foliage and ground absorption.
159. The experts reached different conclusions regarding the peak noise level which would likely result from operation of the Project. These differences were the result of different inputs used in the modeling.
160. Given the differences in noise analysis between the two expert witnesses, the Board issued a Memorandum of Decision on May 4, 2004, which required the Permittee and the Appellants to file supplemental information based on running the CADNA A model.
161. After reviewing the parties' submissions, the Board has made the following findings in choosing the appropriate variable for the Project site for the CADNA A model.

Ground Absorption

162. The International Standards Organization (ISO) Standard (ISO 9613-2:1996) which is used for the basis of ground cover absorption calculations in the CADNA A model provides guidance for choosing an input of "hard ground", "porous ground" and "mixed ground."
163. The ISO Standard emphasizes that attenuation of ground affects is "determined primarily by the ground surfaces *near* the source and *near* the receiver... the ground attenuation does not increase with the size of the middle region, but is mostly dependent on the properties of the source and receiver regions.
164. The ISO Standard assigns a "G" value to each rating and provides guidance for choosing the appropriate numerical value.
 - a. Hard ground, which includes paving, water, ice, concrete and all other ground surfaces having a low porosity. Tamped ground, for example as occurs around industrial sites, can be considered hard. For hard ground $G=0$.
 - b. Porous ground, which includes ground covered by grass, trees or other vegetation, and all other surfaces suitable for the growth of vegetation, such as farming land. For porous ground $G=1$.
 - c. Mixed ground: if the surface consists of both hard and porous ground, then G takes on values ranging from 0 to 1, the value being the fraction of the region that is porous.
- Id. at 6.
165. The areas immediately surrounding the noise sources are composed of hard surfaces. The North Quarry would be 6.5 acres of hard surface and a 1.75-acre compacted yard area. The South Quarry itself is 4 acres surrounded by an equal amount of area of hard surfaces, including the crusher site, the processing shop and compacted yard area, a compacted roadway and various rock storage areas. This hard area is a fraction of the overall Project site which is otherwise vegetated. In light of this ratio and the extra weight that is given to the area near the noise source and receptors, the appropriate ground absorption numerical value is 0.8.

Foliage

166. Unlike the ground absorption assumption, the foliage setting in the CADNA model is not set up to take intermediate values. When there are areas which fail to meet the standard, the appropriate option is to run the model with this assumption off.
167. The foliage assumption in the CADNA A model should not be used in this case. The ISO standard (ISO 9613-2:1996) states that the "foliage of trees and shrubs provides a small amount of attenuation, but only if it is sufficiently dense to completely block the view along the propagation path, ie. When it is impossible to see a short distance through the foliage." *Id.* at 15.
168. The woods in the Project site are not uniformly dense and it is possible to see a fair distance through the woods. In addition, there are numerous places where tree cover is absent or sparse. For example, as a result of an unusual storm in the summer of 2003 called a "microburst," a large portion of the trees to the east of the proposed quarries and the access road was destroyed.

CADNA A Modeling Results

169. With the inputs set as described above, the CADNA A model predicts and the Board finds that the Project with both quarries operating would generate the following dBA Lmax at these residences; Mills 55.1 dBA, Aloan 54.9 dBA, Merritt 76.7 dBA, Stubelek 62.5 dBA, O'Brien 53.2 dBA, Behrman 50.3 dBA, Harrington 48.7 dBA, and Fitzpatrick 55.3 dBA.
170. With the same inputs, at the boundary with the Mills' property, the Project would generate over 55 dBA and less than 70 dBA, depending on location.
171. With the same inputs, at the boundary near Merritt, the Project would generate over 55 dBA and less than 80 dBA, depending on location.
172. At property boundaries closer to the North Quarry, the Project would generate up to 65 dBA.

Undue Adverse Affect

Visual Aesthetics

173. The Inventory and Management Plan (Management Plan) for the Route 131 Scenic Highway was adopted in June 1998 by the Town and the SWCRPC in part because it was supported by the goals and objectives of the Cavendish

Town Plan (Town Plan). The Town Plan provides that "[i]t is the Town's intention to maintain the scenic values along Route 131 while maintaining high standards of safety. The Route 131 Inventory and Management Plan (1998) should be referred to for specific recommendations regarding maintenance and resources along this road."

174. Objective 2 of the Management Plan is to Preserve the Scenic Nature of Route 131. Recommendations for assessing and maintaining the unique visual quality of the roadway as well as a description of the characteristic landscape as seen from the highway are as follows:

Route 131 follows the curves of the Black River as it winds through the picturesque villages of Proctorsville and Cavendish and then through the rural, wooded river valley to the east. As users of the highway make their way down the road, they are afforded views of the wooded hillsides and mountains, a rolling river with white water stretches, covered bridges and local wildlife and vegetation. The Town of Cavendish recognizes the unique scenic nature of this highway.

175. The Objective goes on to recommend that the roadside areas be maintained in a manner that protects their visual significance:

While it is recognized that regular maintenance activities will be necessary for the safety of highway users, these activities must be performed so as not to degrade the scenic character of the highway. In the case of improvement projects that go beyond regular maintenance activities, the impact of the project on the scenic character of the highway shall be a significant criterion in evaluating the project.

176. Objective 6 of the Management Plan is to develop Route 131 as a Recreation and Natural Resource Area and identifies the significance of the Black River and its relationship to the scenic values of the highway and states that: "The Town in cooperation with different state agencies, desires to improve the promotion of the scenic corridor not only for its scenic qualities, but also as a natural resource destination for recreational use."

177. The Management Plan contains a description of the 0.8 mile segment of Route 131 which includes the area where the quarries with their access road are proposed to be built. The Management Plan accurately characterizes this segment as "rural residential with scenic views of the hills to the north and the Black River to the south. Interspersed between the houses are open spaces, wetlands, and hayfields. The Black River begins to meander very close to the road." The description mentions Glimmerstone and identifies the "classic

snecked ashlar stonework of the old Wheeler farmhouse and Glimmerstone" as "noteworthy".

Noise

178. Berms may mitigate noise impacts within 100 feet of the berm. At greater distances, the berms are ineffective.

Historic Sites

179. The Glimmerstone Inn, Joshua Parker Farm, Celia Davis House, James Down House, and the Henry Wiley House are all historically significant stone homes near the Project. All of the above homes are listed on the State Register of Historic Places. The Glimmerstone Inn is also listed on the National Register of Historic Places.
180. The homes are constructed using a rare masonry technique. There are approximately 75 homes in southern Windsor County of similar construction.
181. The walls are typically constructed using thin (4-6 inch) exterior slabs of vertical stone, an interior rubble stone core, and horizontal stones tying the exterior, interior, and core together with mortar. Some of the homes have an exterior stone face and a post and beam interior frame. Each of these large stones relies heavily on bond strength between the back face of the stone and the rubble backup masonry of the interior of the walls.
182. The vertical stones were locally quarried, split along bedding planes and taken out in irregular shapes which gives the walls a random puzzle-like appearance. Some of the stones contain mica which glistens in the sunlight and gives it the name "glimmerstone."
183. The wall is capable of differential movement in response to vibration.
184. The Joshua Parker/Stubelek stone house is located 1,000 feet from the closest production blast location (not including the hillside quarry). The Glimmerstone Inn is located approximately 1,370 feet from the closest production blast location. Both of these structures are located within approximately 50 feet of Route 131.
185. The remaining stone houses identified by DHP range from 2,800 feet away to 6,885 feet away from the closest blast location not including the hillside quarry. None of these structures are located on Route 131 or any road that will be used by Project traffic.

186. No portion of the Project working areas or the access road would be substantially visible from either the Glimmerstone Inn or the Stubelek stone house. The Project would obstruct neither visibility of nor the public's access to the stone houses in any way. While sound from the Project may be perceptible at the stone houses, these structures already experience significant sound impacts from the heavy traffic on Route 131 which immediately adjoins them.
187. The Permittee prepared a comprehensive blasting and vibration control analysis and plan (Blasting Plan). This involved an analysis of the geology of the quarry site itself and its surrounding area together with preparation of a blasting design and extraction pattern intended to minimize impacts of the quarry operation off the site.
188. An explosives blast in a modern quarry is actually a series of smaller blasts separated by small gaps known as "delays". These delays spread out blasting energy so that impacts on adjoining structures and land uses will be minimized. The delay period is typically 8 milliseconds to avoid cumulative impact of blasting energy waves. Accordingly, off-site blasting impacts are dictated by the pounds per delay, not by the total volume of explosives used in a particular shot.
189. Overburden removal/quarry development and production blasting would occur only Monday through Friday between the hours of 10 a.m. and 1 p.m. except for emergencies. Overburden shots would be occasional, totaling 500 lbs. of explosive maximum per shot with a maximum of 300 lbs. of explosives per delay. Production shots would occur at most twice per month at each quarry hole with a maximum total pounds of explosives per shot of 1,500 lbs. and a maximum pounds of explosives per delay of 300 lbs. Overburden and production blasting would be preceded by a two to three day drilling, loading and preparation process.
190. Blasting in connection with construction of the access road would be as needed during construction days and hours and would be limited to 2-3 shots a day with a maximum of 500 lbs. of explosives per shot, and a maximum of 100 lbs. per delay, except as modified in the vicinity of the Merritt camper.
191. The Permittee would attempt telephonic notice to any Project neighbors who request it on or before the day of each blast, and would provide air horn notice immediately prior to each blast.
192. All explosives would be brought to the Project by the blasting contractor. No explosives would be stored on the site.

193. Impacts from blasting fall into three general categories: 1) fly rock; 2) ground vibration; and 3) air concussion. Only ground vibration and air concussion have the potential to cause damage to structures, including wells and houses. No party raised any concern regarding fly rock from the Project.
194. Audible noise from production blasting lasts approximately 1 second and its primary impact is to startle. The audible noise impact from production blasting at the quarry would thus be limited to approximately 4 seconds per month.
195. Ground vibration from blasting is measured in terms of what is referred to as "particle velocity." This refers to the energy of the wave which is propagated through the ground at the time that a blast is detonated.
196. In addition to ground vibration, a sound wave is created by blasting as the blasted rock moves away from the quarry face. This infrasonic sound wave is what is referred to as "air concussion."
197. The U.S. Bureau of Mines (USBM) has developed recommended levels for ground vibration and air concussion from blasting which are intended to protect against structural damage and undue annoyance. The USBM Standards were developed approximately 30 years ago based upon extensive testing in an effort to create a nationwide standard for the mining industry. They have been employed successfully by the blasting and mining industry for this purpose since that time.
198. The USBM Standards for Ground Vibration and Air Concussion are found at USBM Publication 8507 and 8485 respectively. These standards are applicable to the Project.
199. The USBM Standards are intended to protect against structural damage, including wells, from blasting regardless of the nature of the soil or rock medium involved and regardless of the strength or fragility of the structure. The USBM standards do not represent marginal or questionable protection, but represent extensive protection with significant built-in safety factors.
200. In connection with preparing its blasting and vibration control plan, the Permittee monitored two test blasts at the Project and plotted the results on a seismograph. The purpose of the test blasts was to confirm that the predictions regarding blasting ground vibration from the Project were accurate. The test blasts confirmed that the USBM Standards for ground vibration and air shock would easily be met by blasting at the pounds per delay proposed at the Project quarry, including the blasting required for road construction.

201. The Permittee has stipulated to a number of additional measures for insuring that no structural damage would occur to surrounding houses or wells from blasting. The Permittee offered to conduct a pre-blast structural survey of all houses and wells located within 1,500 feet of the closest blasting location, for which permission for pre-blast surveys is given. This would serve as baseline documentation in the event there is ever a claim of future damage.
202. Air horn notice would be provided immediately prior to the blast as is required under federal law. Production and overburden blasts would be monitored by seismographic equipment mounted adjacent to the closest house (where permission is granted) which will render a printout immediately indicating whether the Permittee is complying with the ground vibration and air shock USBM Standards.
203. The mica schist to be extracted at the Project is relatively fragile rock. The entire purpose of the Project is to precision "cut" large blocks from the quarry face. The Permittee thus has every incentive to keep blast energies low and localized as higher power blasts would destroy the stone the Project seeks to extract.
204. The Permittee has stipulated that it would take the following additional measures with respect to the Stubelek and Glimmerstone structures or other stone houses in the Town of Cavendish whose owners request it:

All such structures will be included in the pre-blast survey to be conducted of structures within 1,500 feet of the blast limits. The Permittee will welcome the participation of the Department of Historic Preservation in connection with these examinations. If architectural damage occurs to the stone houses which appears to contradict the Permittee's predictions regarding the effects of Project blasting on these buildings, the Permittee will submit a mitigation proposal, which may include, but need not be limited to, alteration in the approved pounds per delay of explosives, alteration in delay periods or alteration in blasting layout.

Criterion 8(A)

205. The total Project site contains approximately 103.9 acres of deeryard. No portion of the proposed Project improvements, with the exception of a short portion of the Project access road, is located in any previously mapped deer wintering area.
206. The Project would cause direct impacts to 7.3 acres and indirect impacts to 12.7 acres of deer wintering area. All areas of Project impact are on the very edges of the involved yard.

207. The Permittee has agreed to enter into a Conservation Easement with the Department of Fish and Wildlife with respect to deer wintering areas located on the Project property. Pursuant to that Easement, the Project would result in the permanent preservation of 59.8 acres of deer wintering habitat. This constitutes onsite mitigation in a ratio of 59.8 preserved acres to 20 acres of direct and indirectly impacted deeryard, i.e., a ratio of 3 to 1.
208. Once the Project is constructed and operational, the deer wintering areas on or adjacent to the Project site would continue to effectively serve the population of deer that currently make use of them and their functionality would not be significantly diminished in any way.
209. The Permittee owns no acceptable alternative site for the Project.
210. The Permittee conducted an analysis of the economic impact of the Project on Cavendish and the Windsor County Region by analyzing the direct employment and payroll from the Project relative to the total employment and payroll in the region and further analyzing what tax revenue both the State of Vermont and the Town of Cavendish would likely receive from the Project over its expected lifetime. The Permittee used the Regional Input - Output Modeling System that was developed by the Bureau of Economic Analysis within the U.S. Department of Commerce.
211. The Project would have an annual payroll of \$550,000.00 for twenty (20) new full-time jobs. Taking into account the likely benefits that would be provided to the employees of the Project, the total compensation to employees of the Project is estimated to be approximately \$715,000.00 per year.
212. Over the 50 years of the Project's life, it is estimated that the State of Vermont and the Town of Cavendish would jointly receive \$28,402,432.00 in taxes and related revenue from the Project, with \$163,200.00 being paid to the Town of Cavendish in the form of Municipal Property Taxes.
213. The Project would not cause any significant growth in the Town of Cavendish or the region or concomitant adverse economic losses. Population growth and housing growth will all be essentially unchanged by the Project. There is no quantifiable economic loss from the limited impact that will occur from the Project on deer wintering areas. The Project would produce substantial economic benefits relative to new jobs, related payroll and tax and related revenue to the Town and the State.

Criterion 9(E)

214. The Permittee submitted a Reclamation Plan for when quarrying activities cease. For the North Quarry, amongst other things the Reclamation Plan proposes spreading 12 inches of stockpiled soil sloping towards the north east corner, fertilizing the soil, applying lime if necessary, and seeding the soil with a water tolerant and soil erosion resistant mixture.
215. For the South Quarry, the Reclamation Plan recognizes that the floor of the South Quarry would be too low to drain by gravity. Instead, the Reclamation Plan proposes creating a flattened terrace around the South Quarry floor if the completed site ponds water. The flattened terrace would have a minimum width of 30 feet between the rock face and the highest water level. The terrace would be covered with soil and be seeded similar to the plans for the North Quarry area.
216. The Reclamation Plan also includes the planting of tree seedlings in the areas which have been reclaimed with grass. The trees would be planted in April or May of the first complete growing season after the grass has been planted. The Reclamation Plan does not provide any details on the species except to state various native species would be planted at recommended spacing according to planting guides.
217. The Reclamation Plan does not include any details on what would happen to the Project's roads, infiltration basin, refueling area, and assorted buildings.
218. The Permittee estimates that the cost to implement the Reclamation Plan would be \$90,600. The Permittee proposes funding reclamation by contributing \$4,000 per year into an escrow account starting on the first anniversary of the extraction of rock until the necessary sum is accumulated.

Criterion 9(K)

219. The public investments near the South Quarry, access road and hillside quarry are Route 131, the Black River, and Proctor Piper State Forest.
220. The public investment near the North Quarry is Davis Road.
221. Route 131 is a busy road adjacent to the access road and near the South Quarry. The Project would increase daily truck traffic on Route 131 by 30 truck trips which is only a moderate increase over the existing truck traffic.

222. There was insufficient information presented on the ability of the trucks to turn on to or off the access road without jeopardizing the safe use of Route 131.
223. Given the current usage and noise level of Route 131, apart from the construction of the access road and hillside quarrying, the Project will have little impact on the noise level for Route 131.
224. The Black River is located on the south side of Route 131, across a field and immediately downhill from the access road and hillside quarry.
225. Proctor Piper State Forest is located approximately 1,700 feet from the Project on the opposite side of the Black River and the Green Mountain Railroad line.
226. Davis Road is designated in the Town Plan as a scenic road. It is located near the North Quarry. Davis Road is used by the local community for recreational purposes such as biking and walking. The current background noise level is very low. The Project would increase the noise experienced on Davis Road but the noise would not be over 45 dBA.

Criterion 10

227. The Town Plan contains the following relevant provisions:

Goal 1: To encourage development so as to maintain the rural atmosphere of the community and historic settlement pattern of compact village centers separated by rural countryside.

Objectives:

3. Development should be discouraged on slopes greater than 15%.

6. Business and industrial growth should occur in areas adjacent to where business and industry now exist and where Town water and sewer are available.

Goal 5: To identify and protect important natural and historic features of the Vermont landscape, including woodland, wetlands, scenic sites, significant architecture, villages, wildlife habitats and agricultural land.

Objective:

3. Develop policies and plans for the long-term protection of significant scenic roads, waterways, and views; cultural and historic resources; and important resource and recreation lands.

Goal 6: To maintain or improve the quality of air, water, wildlife, and land resources.

Objectives:

3. Establish development standards or conservation measures for areas designated as critical habitat for wildlife.

5. Develop policies for the extraction of earth minerals to ensure that land and water resources are minimally impacted or are restored to their original condition after extraction.

NATURAL, CULTURAL, AND HISTORIC RESOURCES

Water Resources

Policies

3. Development should be discouraged on slopes of 15 percent or more.

Wildlife Habitat

Policies

1. Wildlife habitat, particularly areas designated as deer wintering areas and Natural Heritage Inventory sites, should be protected and maintained.

Recommendations

2. Preserve the value of the many wild habitat areas and deer yards found in large tracts of forested, undeveloped land, and in wetland areas. The Town will seek to conserve its deer yards and insure that development pressures do not diminish the value of these areas.

Earth Resources

In addition, mining can cause noise pollution and dust. These negative effects of mining should be mitigated if such industries are going to operate in the town.

Policies

2. Development on lands with high potential for the extraction of mineral and earth resources should be done so as not to interfere with the subsequent extraction or processing of the resource.
3. The extraction of resources must not result in a nuisance to neighboring property owners through noise or dust, nor be a burden on public services.

PUBLIC TRANSPORTATION, RAIL, AND AIR

Policies

7. The Route 131 Inventory and Management Plan (1998) should be referred to for specific recommendations regarding maintenance and resources along this road.
8. Maintain overhead canopies of trees on scenic roads wherever possible.

Timing of Development

Policies

2. Preserve the historical development pattern of mixed-use urban and village areas surrounded by open land, agriculture, forest, and low-density residential use.
 11. Development should not detract from the historic character and aesthetic qualities of the village centers.
228. There is presently no power or sewage serving the Project site. Power serving the Project would be underground.
 229. The Southern Windsor County Regional Plan (Regional Plan) contains the following provisions that are relevant to the Project:

Goals, Policies, and Recommendations Defined

The goals and policies listed below are general overriding statements of the desired principles that should guide the growth and development of the Region and protect the natural and built environment. The goal and policy statements

should be taken within the context of the information and analysis contained in the chapters which follow.

Goals - Broad statements of what the Region ultimately wants to achieve. Goals reflect realistic intentions regarding a particular resource. They are not placed within a specific time frame. Specific goals are developed for each section of this Plan.

Policies - Agreed upon courses of action to be followed to achieve the goals. Policies contain the principles or standards that guide the choices of implementation measures used to reach the Plan's goals.

Recommendations - Suggestions for specific actions to be carried out to each the stated goals and policies.

Future Land Use Map

The land use category definitions that follow are descriptions of the areas shown on the Future Land Use Map. They are meant to serve as a guide to the types and intensities of uses appropriate for each area by describing the values, or "functions," that it provides for the Region. The definitions do not prescribe or prohibit a specific use or set of uses for any category; the actual uses of land will have significant overlap between categories.

The Future Land Use Map is general in nature, and the boundaries of different areas were drawn with this in mind. They are not meant to be detailed representations of present conditions, nor are they intended to be precisely bounded areas of completely segregated land uses for the future.

Forest

Forest resources provide many benefits to the Region. They are valued for their ability to provide wildlife habitat; protect air and water quality; support the regional forestry, forest products, and tourism economies; and provide opportunities for outdoor recreation. They are aesthetically pleasing to residents and visitors alike. The ability of forestland to provide these benefits on a regional level should not be significantly impaired. Development in these areas should be undertaken in ways that protect their value and ensure the continued presence of healthy forest ecosystems in the Region.

Industrial

Industrial areas are important employment centers, which may be incompatible with other uses because of increased traffic, noise, and conflicts with downtown character, etc. They also represent land best suited for industries such as mining, which have inherent limitations on where they can function. These areas should be determined according to existing conditions such as infrastructure and major transportation routes and managed to minimize traffic, environmental, noise, and aesthetic impacts on surrounding areas.

Land Use Policies

8. Local efforts to encourage compatible development adjacent to significant natural resources (waterways, large forested areas, wildlife habitat, etc.) by requiring buffer strips, visual screening, and other mitigation devices should be supported.

Wildlife Goals

1. Preserve the diversity of indigenous animal and plant species for their continued existence and proliferation.

Wildlife Policies

1. The incremental degradation and fragmentation of habitat for wildlife and threatened and endangered species areas should be discouraged.

3. Wildlife habitat should be considered when determining the location and boundaries of development.

Mineral Resource Goals

3. Ensure that methods used for the extraction and utilization of mineral resources consider the surrounding development and minimize any significant negative effects on the environment.

Mineral Resource Policies

6. Mineral extraction and processing facilities should be planned, constructed, and managed:

(a) to provide direct access to Class III or better highways;

(b) to not unduly interfere with the function and safety of existing road systems serving the project site. Factors to be considered in determining impacts are: (i) extent of increase in heavy vehicular traffic, (ii) effects of weight loads on roadbeds and bridges, (iii) conflicts with pedestrians or bike users, and (iv) numbers and frequency of heavy vehicles traveling through dense residential areas.

Cultural/Historic Resource Policies

2. Proposed development adjacent to or within significant historic or cultural sites should be compatible with the resources, and should enhance their historic value and appreciation where possible.

Scenic Lands and Open Space Goals

2. Maintain or enhance the diversity of ecosystems throughout the Region and promote connectivity between conserved lands wherever possible.

3. Protect the environmental character and integrity of significant natural and scenic resources as identified by local communities.

V. CONCLUSIONS OF LAW

Criterion 1(Air)

In order to issue a permit, the Board must find that the Project will not result in undue air or water pollution. 10 V.S.A. § 6086(a)(1). The Board must determine whether the operational activities at the North and South Quarries, the access road construction and hillside quarry, and the noise generated by the Project comply with Criterion 1 (air). The burden of proof for Criterion 1 is on the applicant. 10 V.S.A. § 6088(a).

Nothing in Act 250 specifically defines "undue air pollution." There are a wide range of potential substances and nuisances that may be considered air pollution. Whether a pollutant is "undue" depends on factors such as the nature and amount of the pollution, the character of the surrounding area, whether the pollutant complies with certain standards or recommended levels, and whether effective measures will be taken to reduce the pollution. "Undue" has been defined in *Brattleboro Chalet Motor Lodge, Inc.*, #4C0581-EB, Findings of Fact, Conclusions of Law, and Order (Oct. 17, 1984) to mean "that which is more than necessary - exceeding what is appropriate or normal." *Id.* at 6.

Access Road Construction and Hillside Quarry

The Appellants point out that the Permittee's modeling did not include the emissions and noise from the construction of the access road and quarrying of the hillside. The Board agrees that the Permittee did not provide any data whatsoever regarding the impacts to the air quality of the neighboring properties during the 2 to 4 construction seasons of access road construction and quarrying of the hillside. Air pollution that occurs during construction as well as during operation is subject to review. *In re: Barre Granite Quarries, LLC William and Margaret Dyott, #7C1079 (Revised)-EB Findings of Fact, Conclusions of Law, and Order at 67 (Dec. 8, 2000)*. The construction of the access road and quarrying of the hillside could have a substantial impact on neighbors, some of whom live within 100 feet of the construction zone. Other neighbors may reside several hundred feet away, but the construction would occur within 20 feet of their property boundaries.

The Permittee has the burden of proof to provide sufficient evidence for the Board to conclude that undue air pollution would not result from the access road construction activities and quarrying of the hillside. *Re: Herndon and Deborah Foster, #5R0891-8B-EB, Findings of Fact, Conclusions of Law, and Order at 11 (Jun. 2, 1997); Re: Okemo Mountain, Inc., #250351-12A-EB (revised Jul. 23, 1992; previous version Mar. 27, 1992; minor alteration Nov. 13, 1992)*(applicant always has the burden of producing evidence sufficient to enable the Board to make the requisite positive findings on all of the criteria). Based on the foregoing, the Board concludes that the Permittee has not met its burden of proof under Criterion 1 (air) with respect to air pollution generated during the construction of the access road and quarrying of the hillside.

Operational Activities at the North and South Quarry

Sources of air pollution resulting from the Project's operational activities would include: particulate matter less than 10 micrometers in diameter (PM 10); particulate matter less than 2.5 micrometers in diameter (PM 2.5); carbon monoxide (CO); nitrogen oxides (NOx); and crystalline silica. The Permittee used the EPA Industrial Source Complex Model, ISC Prime to analyze potential air pollutants from the operations at the North and South Quarries for which there are National Ambient Air Quality Standards and Vermont Ambient Air Quality Standards. The Permittee's modeling indicated that the Project would meet all applicable state and federal standards.

The Appellants argue that the modeling results demonstrate that the Project will come very close to the National Ambient Air Quality Standards and may cause an undue impact. The Board notes that this section is limited to the operational activities at the North and South Quarries because the Permittee's modeling only considered the annual extraction of 10,000 cubic yards of material.

While some of these emissions may be close to the applicable standards, the Board concludes that the operational activities at the North and South Quarries would comply with the Vermont and National Ambient Air Quality standards. Although the Board recognizes that some residents in the vicinity of the Project might be especially sensitive to dust and diesel particulates due to medical conditions, the Appellants did not provide evidence justifying requiring the Permittee to meet a higher standard than the ambient air quality standards. Notwithstanding Permittee's failure to meet the burden of proof for the access road construction and hillside quarry, the Board concludes that the air pollution generated by operating the North and South Quarry would comply with Criterion 1 (air).

Noise

Noise is considered air pollution if it rises to the level of causing adverse health affects. The test for undue air pollution caused by noise is whether the noise has "impacts rising above annoyance and aggravation to cause adverse health effect such as hearing damage." *Re: Bull's Eye Sporting Center, #5W0743-2-EB*, Findings of Fact, Conclusions of Law, and Order (Feb. 27, 1997). Adverse health effects can be psychological as well as physical. *In re: J.D. Carrera & Sons, Inc., #1R0580-3 EB* (Third Revision) Findings of Fact, Conclusions of Law, and Order (Apr. 21, 1995).

The Appellants did not present sufficient evidence to demonstrate that the noise from the Project would cause physical harm. Instead, the Board concludes that the noise level will only rise to the level of potentially annoying and aggravating. Therefore, the Board finds that the noise level generated by the Project would satisfy Criterion 1(air).

Criterion 1(Water)

Under Criterion 1, the Board must find that the development will not result in undue water pollution. For this Project, the Board must determine whether undue water pollution would result from the quarrying activities, the refueling of diesel operated equipment, and mill operations.

Quarrying Activities of the Project

There is no clear definition of "undue water pollution." *Re: Mark and Pauline Kiesel, #5W1270-EB*, Findings of Fact, Conclusions of Law, and Order (Altered)(Aug. 7, 1998). The Board must make its determination based on the specific facts and circumstances of the case considering: "the elevation of the land above sea level; and in relation to the flood plains, the nature of soils and subsoils and their ability to adequately support waste disposal; the slope of the land and its effect on effluents; the

availability of streams for disposal of effluents; and the applicable health and environmental conservation department regulations." 10 V.S.A. 6086(a)(1). The Vermont Supreme Court has held that the Board should consider the Vermont Water Quality Standards (VWQS) as the health and environmental conservation regulations. *In re: Hawk Mountain Corp.*, 149 Vt. 179 (1988).

Sources of water pollution which could result from the quarrying activities of the Project include sediment contaminated stormwater and sediment contaminated water from the quarry dewatering process. The Permittee has received a NPDES Permit for stormwater discharge from its construction site. In addition, ANR determined that the Project does not require a stormwater discharge permit.

However, the Board is not bound by the approval or permits granted by other agencies. *Re: Sherman Hollow*, #4C0422-5-EB (Revised), Findings of Fact, Conclusions of Law, and Order at 8 (Feb. 17, 1989) citing *In Re: Hawk Mountain Corp.*, 149 Vt. 179, 185 (1988). In addition, the Board is still charged with determining whether any component of the Project could result in the release of undue water pollution into the environment. In the instant case, the Board is concerned about possible fuel spills and the Permittee's leaky berm system.

The Permittee has proposed the use of a leaky berm system to dispose of stormwater and groundwater intercepted by quarrying operations in the North Quarry. The leaky berm is proposed to function as follows: 1) stormwater would accumulate in a sump in the North Quarry floor where particulates would settle out; 2) the water would then be pumped up to a fore-bay for additional pretreatment; 3) the water would then be discharged into a sedimentation basin with the leaky berm on one end; 4) the water would filter through the leaky berm and percolate into the ground.

The Board questions whether the leaky berm would function properly if the amount of stormwater and groundwater from quarry dewatering is greater than estimated by the Permittee. The Permittee only calculated the amount of groundwater it would encounter based on one borehole at each quarry. Given the amount of water bearing fractures visible in the North Quarry, it is likely that substantially more water would be intercepted than the Permittee anticipates. In addition, the Permittee did not consider peak stormwater levels in its design and analysis.

The Permittee's hydrogeologic analysis is based upon the leaky berm filtering a certain volume of water. If the leaky berm receives substantially more groundwater or stormwater than expected, sediment may clog the leaky berm and potentially cause unfiltered water to flow from the clogged basin. Given the steep slopes of the landscape on which the Project would be located, the contaminated water could enter the ground and drain towards the Twenty Mile Stream or the Black River.

In *Barre Granite*, the Board noted that the quarry project will not result in undue water pollution, in part, because the Permittee will continuously monitor water quality. *Barre Granite* at 69 . In the instant case the Permittee did not propose any water quality monitoring despite the fact that not all equipment would be refueled at the refueling station which creates the potential of a diesel spill into the ground.

Therefore, before the Board could issue a permit, it would require a regular maintenance program for the leaky berm, a hydrogeologic monitoring plan for the Project, more extensive groundwater testing to determine the amount of groundwater intercepted, and an analysis that includes peak stormwater.

Refueling Station and Spill Prevention Plan

The Board is also concerned that diesel fuel could leak during refueling. The Permittee has proposed that all diesel fuel for the quarry equipment would be located in a designated refueling station or in the contained equipment. The catch basin located below the diesel fuel storage tank would have a concrete, impervious floor. Thus, any spills from the tank itself would be caught before penetrating into the ground. However, the refueling area between the fuel pump and the quarry equipment to be refueled would not have an impervious floor. Moreover, not all equipment would be refueled at the refueling station, increasing the potential of a diesel spill into the ground.

Based on the information presented by the Permittee, the Board is not convinced that the proposed Spill Prevention Plan (Spill Plan) would be adequate to prevent hydrocarbon releases from leaks during refueling, as the Spill Plan lacks specificity. Given the amount of refueling required by the scope of the Project, it is essential that this Project has an effective spill pollution control plan.

Mill Operations

Sewage is a potential water pollutant that could result from the mill operations of the Project. However, the Permittee obtained a Water Supply and Waste Water Disposal Permit for the mill water and sewage disposal facilities and is entitled to an Environmental Board Rule (EBR) 19 presumption that the mill operations would not result in undue water pollution. EBR 19 (E)(1)(a); *In Re: Herbert and Patricia Clark, #1 R0785-EB*, Findings of Fact, Conclusions of Law, and Order (Apr. 3, 1997)(permits issued by DEC and entered into record create rebuttable presumption of compliance with the applicable criteria). As the Appellants did not present rebuttal evidence, the Board concludes that the mill operations would not result in undue water pollution.

In light of the above, the Board holds that the Project does not comply with Criterion 1 (water). However, the Board notes that the Permittee may be able to cure the above deficiencies.

Criterion 2 (Sufficient Water Supply)

Before issuing a permit, the Board must find that the project has "sufficient water available for the reasonably foreseeable needs of the subdivision or development." 10 V.S.A. § 6086(a)(2). The burden of proof is on the applicant under Criterion 2. 10 V.S.A. § 6088(a).

The mill, office, and retail shop of the Project would require a new drilled bedrock well for its operations. The Permittee has obtained a Water Supply and Waste Water Disposal Permit from ANR's Department of Environmental Conservation to establish this well for domestic water and is entitled to an EBR 19 presumption that sufficient water is available for the Project. Environmental Board Rule 19(E)(1)(a); *In Re: Herbert and Patricia Clark, Id.* As no party presented rebuttal evidence to challenge the presumption, the Board concludes that the bedrock aquifer at the Project site contains an adequate water supply for the Project's needs and the Project complies with Criterion 2.

Criterion 3 (Burden on Existing Water Supply)

Before issuing a permit, the Board must find that the Project "[w]ill not cause an unreasonable burden on an existing water supply, if one is to be utilized." 10 V.S.A. § 6086(a)(3). Criterion 3 addresses the "impacts on the ability to meet the demand of neighboring wells or water sources if those other wells or water sources share the same basic source of water such as an aquifer or common spring." *Re: MBL Associates, #4C0948-EB, Findings of Fact, Conclusions of Law, and Order (Altered) at 28 (May 2, 1995).* The burden of proof is on the applicant under Criterion 3. 10 V.S.A. § 6088(a).

There is no dispute that the surrounding homes currently have an abundant water supply and there was no evidence of any nearby home experiencing prior water shortages. The Project would share the same aquifer with the Appellants and other neighbors. While the Project's water needs are minimal and would not burden the existing supply, the question is to what extent would the Project burden the neighbors' water supply by intercepting the groundwater through quarrying or altering the fracture network in the bedrock by blasting.

The Board recognizes that the blasting may alter the fracture network within the bedrock which could alter the movement of the groundwater. The Permittee and Appellants have drastically different predictions concerning how much water the

quarrying would intercept. The Board does not need to determine the exact amount because the Permittee plans to return the water to the same aquifer. Therefore, even if the Appellants predictions are correct, the aquifer would be regularly recharged when the water is pumped out of the quarry into the infiltration basins.

In addition, the Permittee testified that a residential well in the area of the Project only required about 1 ½ acres of land to recharge. There was no evidence submitted to the contrary. While the Board does not rely on this testimony to reach its conclusion, it does suggest that the Project would not cause a burden on the existing water supply. In light of the above, the Board concludes that the Project complies with Criterion 3.

Criterion 4

Before issuing a permit, the Board must find that the Project, "[w]ill not cause unreasonable soil erosion or a reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may result." 10 V.S.A. § 6086(a)(4). The burden of proof is on the Permittee under Criterion 4. 10 V.S.A. § 6088(a).

Erosion control plans used to satisfy Criterion 4 must be site-specific. *Re: Sherman Hollow, Inc., #4C0422-5-EB (Revised)*, Findings of Fact, Conclusions of Law, and Order at 37 (Feb. 17, 1989). The Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites (1982) (Handbook) is often used to demonstrate compliance with Criterion 4. In discussing factors influencing erosion, the Handbook states that "[t]he size and steepness of slopes within a watershed influence the amount and rate of runoff. As the length and gradient (steepness) of a slope increase, the amount and rate of runoff increase and the potential for erosion is magnified. By limiting the length and gradient of slopes created or modified during development, one can reduce the volume and velocity of runoff and minimize erosion." Handbook at 6. See *Re: Mark and Pauline Kiesel, #5W1270-EB*, Findings of Fact, Conclusions of Law, & Order at 12-13 (Altered) (Aug. 7, 1998).

The Appellants assert that the Permittee's Erosion Control Plan inadequately addresses the erosion potential from the site construction and operation. In particular, the Appellants predict that water, loose soil, and rock would flow down the unstable steep slopes of the hillside where the access road is planned.

The Permittee responds that the only significant potential for erosion at the Project is from storm water traversing disturbed soil during construction of the quarry working areas and the access road. The Permittee contends that such erosion potential is routinely addressed through seeding and mulching exposed areas and providing appropriate flow interruption and diversion devices adjacent to access roads, slopes and other significant impervious areas.

The Permittee submitted an Erosion Control Plan which includes a schedule for inspection, maintenance and record keeping for all erosion control measures. The plan calls for the use of silt fencing, hay bales, water diversions, and mulch to be employed as temporary measures to control soil erosion. Permanent soil erosion control measures include seeding and mulching then planting trees once the turf is established. A professional engineer specializing in civil engineering would oversee the work to insure compliance with the plan.

The Board agrees with the Permittee that if the erosion control measures in the Erosion Control Plan are followed, there would not be significant erosion in the operational areas of the North and South Quarry. However, the hillside where the access road is planned poses a more challenging environment in which to control erosion. As the Permittee's engineer on the Project acknowledged, the hillside is a difficult place to put a road.

The difficulties are largely due to the extremely steep slope of the hillside coupled with the water-bearing fractures in the bedrock. Given those challenges, it is questionable that the 1,200 to 1,600 cubic yards of topsoil placed 3 feet high on exposed bedrock would stay in place, even with Permittee's proposed erosion control measures. The Board is concerned that until such time that sufficient groundcover is established, the soil may wash down the hillside toward Route 131 and ultimately the Black River. While the Permittee's Erosion Control Plan would likely work in most environments, the Board concludes it would likely fail on this hillside.

The Board is also concerned that the Erosion Control Plan did not address the potential of peak storm water flows during a significant rain storm or snowmelt, particularly during construction. In light of the fact that it is unclear how long the access road construction would take, the Erosion Control Plan does not provide sufficient detail on the phasing of construction and erosion control measures.

The Board concludes that given the proposed construction of the access road on very steep slopes, the presence of the water-bearing fractures in the rock, and storm water and snow melt, there is a high potential for severe erosion on the hillside. Therefore, the Project does not comply with Criterion 4.

Criterion 5

Before issuing a permit, the Board must find that the Project "[w]ill not cause unreasonable congestion or unsafe conditions with respect to the use of highways. . . "10 V.S.A. § 6086(a)(5). A permit may not be denied solely on the basis of Criterion 5, but the Board may attach reasonable conditions and requirements to the permit to alleviate the burden created. 10 V.S.A. § 6087(b). The burden of proof is on the

opponents under Criterion 5, but Permittee must provide sufficient information for the Board to make affirmative findings. 10 V.S.A. § 6088(b).

Criterion 5 does not require that proposed development be the principal cause or the original source of traffic problems. Several causes may contribute to a particular effect or result.

In re Pilgrim Partnership, 153 Vt. 594, 596-97 (1990) (citations omitted) (affirming Board decision that proposed project did not satisfy Criterion 5).

The Appellants acknowledge that the Project would not generate a significant amount of new traffic. The Board agrees and concludes that although the additional number of trucks using Route 131 may cause some platooning and pose an inconvenience to some drivers, the increase by itself is not a safety issue.

The Board notes that although the permanent access road would intersect Route 131 in the middle of a series of curves, the sight distances are adequate according to VTRANS' standards. The Board also notes that there are no existing high accident locations or unsafe conditions, and that the Level of Service will continue to be at least a B. However, the Board also notes that the temporary access road may not have adequate site distances.

According to Appellants, the safety issue is the potential for accidents resulting from trucks entering and exiting the access road. In particular, the Appellants argue that the loaded trucks would take up to 45 seconds to turn onto Route 131 from the access road and accelerate up to 40 miles per hour. Given the number of vehicles on Route 131, the trucks would cause several vehicles to slow down. The Board concludes that there may be ways such as signs to warn drivers on Route 131 that they may need to slow down near the Project, especially given the winding nature of the road.

The Appellants also argue that the turning radius of the trucks is not tight enough and may cause a safety hazard. The Board is concerned that trucks making a right turn onto Route 131 from the access road would likely significantly protrude into the lane of oncoming traffic and could pose a serious safety issue. In addition, trucks making a right turn from Route 131 onto the access road may also impede traffic in both directions. Both of these are especially a cause for concern because Route 131 near the access road does not have any shoulders. The Permittee did not present any convincing evidence that the trucks could make the right turns without interfering with traffic in both directions.

The Town of Cavendish expressed concern that heavily loaded trucks may lose traction in winter and slide down the access road to Route 131. The maximum gradient of the access road is 10% and the gradient flattens out as it approaches Route 131.

Trucks regularly navigate slopes at similar gradients, even in winter. The slope of the access road would not create an unsafe condition.

In sum, the Board concludes that the increase in truck traffic, the sight distances, and the gradient of the access road would not cause unreasonable congestion or unsafe conditions with respect to the use of highways. Were the Board to issue a permit, it would insert a permit condition requiring the Permittee to apply for permission to install a road sign with a flashing yellow light warning vehicles that trucks are entering the road ahead. A warning sign would prepare drivers for the potential need to slow down and address the Appellants' concerns over slow moving trucks causing a safety issue. The Board would also reopen the hearing and request that VTRANS testify to determine whether a turning lane or other additional measures are necessary to accommodate the turning radius of large trucks. The Board would also request that VTRANS testify on safety issues associated with the temporary access road and entrance.

Criterion 8

Under Criterion 8, before issuing a permit, the Board must find the proposed Project will not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare or irreplaceable natural areas. 10 V.S.A. §6086(a)(8). There was no evidence produced concerning rare or irreplaceable natural areas, therefore the Board will not consider that component of Criterion 8. Historic sites will be considered separately because the legal analysis is slightly different.

The burden of proof under Criterion 8 is on those who oppose the Project, 10 V.S.A. §6088(b), but the applicant for the permit must provide sufficient information for the Board to make affirmative findings. *See, Re: Southwestern Vermont Health Care Corp., #8B0537-EB*, Findings of Fact, Conclusions of Law, and Order at 28 (Feb. 22, 2001).

The Board relies upon a two-part test to determine whether a project satisfies Criterion 8. First, it determines whether the project will have an adverse affect under Criterion 8. *Re: James E. Hand and John R. Hand, d/b/a Hand Motors and East Dorset Partnership, #8B0444-6-EB* (Revised), Findings of Fact, Conclusions of Law, and Order at 24-25 (Aug. 19, 1996), *citing Re: Quechee Lakes Corp., #3W041 1-EB* and *#3W0439-EB*, Findings of Fact, Conclusions of Law, and Order at 17 -19 (Nov. 4, 1985).

The Board looks to whether a proposed project will be in harmony with its surroundings or, in other words, whether it will 'fit' the context within which it will be located. In making this evaluation, the Board examines a number of specific factors, including the nature of the project's surroundings, the compatibility of the

project's design with those surroundings, the suitability for the project's context of the colors and materials selected for the project, the locations from which the project can be viewed, and the potential impact of the project on open space.

Hand, supra, at 25, *citing, Quechee, supra*, at 18.

In other words, if a project 'fits' its context, it will not have an adverse affect. *Re: Talon Hill Gun Club and John Swinington, #9A0192-2-EB*, Findings of Fact, Conclusions of Law, and Order at 9 (Jun. 7, 1995). If the Board concludes that the Project has an adverse effect under Criterion 8, the Board moves to the second part of the test and evaluates whether the adverse effect is 'undue'.

Board precedent notes that application of Criterion 8 does not guarantee that views of the landscape will not change:

Criterion 8 was not intended to prevent all change to the landscape of Vermont or to guarantee that the view a person sees from his or her property will remain the same forever. Change must and will come, and Criterion 8 will not be an impediment. Criterion 8 was intended to insure that as development does occur, reasonable consideration will be given to the visual impacts on neighboring landowners, the local community, and on the specific scenic resources of Vermont.

Re: Okemo Mountain Inc., #2W5051-8-EB, Findings of Fact, Conclusions of Law and Order at 9 (Dec.18, 1986); *and see Main Street Landing Company and City of Burlington, #401068-EB*, Findings of Fact, Conclusions of Law, and Order at 17-18 (Nov. 20, 2001).

While a built environment is not always adverse, projects that result in the loss of open space and the alteration of vistas can have an adverse effect on aesthetics and scenic beauty. *Re: Thomas W Bryant and John P. Skinner, #4C0795-EB*, Findings of Fact, Conclusions of Law, and Order at 21 (Jun. 26, 1991). *See also Re: Maple Tree Place Associates, #400775-EB*, Findings of Fact, Conclusions of Law and Order at 48-49 (Jun. 25, 1998); *Re: George, Mary and Rene Boissoneault, #6F0499-EB*, Findings of Fact, Conclusions of Law, and Order at 19 (Jan. 29, 1998).

Adverse Affect

Visual Aesthetics

Visual Context of the Project

The Project is located near the Black River in a distinctive winding valley that includes the villages of Proctorsville and Cavendish. Heavily forested hillsides, including the hillside containing the Project site, rise sharply up from the valley floor. Route 131 closely follows the river's bends and curves and is often lined by mature trees that arch over the road creating a tree canopy.

The access road would traverse its way up the steep hillside that was forested until the Permittee cut down most of the trees. At the time of the site visit, the hillside looked like a construction site. Through pictures taken prior to or during the cutting, however, the Board was able to determine its prior condition. This distinction is important because arguably any change to the current condition would be an aesthetic improvement. However, for the purposes of this appeal, the Board examines the impacts of the Project to the area as it existed before the Permittee began construction. *Luce Hill Partnership #5L1055-EB, Findings of Fact, Conclusions of Law, and Order at 8 (Jul. 7, 1992).*

The North and South Quarries would be located up the hillside from Route 131 in a forested area. There are residences near the North and South Quarries although none immediately adjacent to any operational area of the quarries. A "blowdown" which completely flattened hundreds of trees occurred a few years ago near the North Quarry. The blowdown opened up a once forested area.

Visual Impact of the Project on its Context

Although most of the operational areas of the North and South Quarries would not be visible except to a few property owners, the access road and quarrying of the hillside are in full view from Route 131 with little to no visual buffer. The access road and the quarrying of the hillside would occur adjacent to one residence and near several residences. There is no visual buffer between the access road and some of those residences. There can be little question that between the loss of undeveloped land, the view of the access road and hillside quarry from certain nearby property owners, and the impacts to the view from Route 131, that this Project would have an adverse affect on the aesthetics of the area. Permittee's expert witness on aesthetics conceded this point.

Noise

Noise Context of the Project

The Project is located in a rural area between the villages of Cavendish and Proctorsville. The access road connects the Project to Route 131. Route 131 is a busy two-lane thoroughfare with substantial car and truck traffic. The residences adjacent to Route 131, such as the Merritt camper, hear a regular hum from the traffic, occasionally punctuated by the roar of a loud truck.

The South Quarry is up the hill and removed from Route 131. Residents such as Mr. Mills, who live near the South Quarry, are sufficiently protected from the noise from Route 131 and live in a quiet residential setting. However, these residents can hear an occasional train pass on the tracks located on the other side of the Black River.

The North Quarry is an extremely quiet, rural area far removed from any commercial, industrial or traffic noise. The residences near the North Quarry have a L90 dBA of around 26 to 30 dBA. At one point during the site visit which occurred in winter, an extremely faint hum from snow guns on Okemo Mountain was just audible. Okemo Mountain is located approximately 6 miles from the Project.

Noise Impact of the Project on its Context

The next question is whether the noise produced by the Project is out of character with the setting. *Re: Barre Granite Id.* at 79-80; *Charles and Barbara Bickford*, #5W1186-EB, Findings of Fact, Conclusions of Law, and Order at 33 (May 22, 1995); *John and Marion Gross*, #5W1198-EB, Findings of Fact, Conclusions of Law and Order at 10 (Apr. 27, 1995); *R.J. Colton Company, Inc.*, #9A0082-1R-2-EB, Findings of Fact, Conclusions of Law, and Order at 11 (Jan. 14, 1982). This is a qualitative and quantitative determination involving an examination of the type and level of noise that the Project will generate and the neighboring land uses.

Board precedent has long considered that different types of noises must be treated differently. Sharp, intermittent or high frequency noises must be judged differently from low frequency continuous noises. In *Re: Bull's Eye Sporting Center et al.*, #5W0743-2-EB, Findings of Fact, Conclusions of Law, and Order at 17 (Feb. 27, 1997), the Board wrote:

The impact or quality of noise is not entirely reflected by decibel rating. The degree of noise annoyance must also consider the duration and intermittency of noise. Impulse noises, such as gunshots, are often judged to be "noisier" or more unwanted than non-impulsive noises that have the same total integrated energy.

And see, Re: Black River Valley Rod & Gun Club, Inc. #2S1019-EB Findings of Fact, Conclusions of Law, and Order at 19 (Mar. 27, 1997); Re: Talon Hill Gun Club, Inc. and John Swinington, #9A0192-2-EB, Findings of Fact, Conclusions of Law, and Order at 9 (Jun. 7, 1995).

The Board has applied this same analysis to situations involving traffic noise. In *Re: OMYA, Inc. and Foster Brothers Farm, Inc., #9A0107-2-EB, Findings of Fact, Conclusions of Law and Order at 32 (May 25, 1999)*, the Board rejected a sound measurement scheme that averaged truck traffic sound levels over 24 hours and found that such sounds would have no significant effect on background sound levels averaged over that same time.

In the instant case, for the residents near the access road and hillside quarry, the industrial noise from the machinery moving and loading stone, blasting, trucks moving up and down the access road, etc, would be noticeably different than the regular hum of traffic from Route 131. The prolonged construction activities as well as the quarrying would produce a quality and quantity of noise that is out of character with the area.

For the residents near the North Quarry and South Quarry that are insulated from the noise from Route 131, the industrial noise would be qualitatively out of character with the setting. For both quarries the quantity of noise would also be out of character with the setting. Therefore, there can be little doubt that the Project would impose an adverse noise impact with respect to both the access road and hillside quarry, and the North and South Quarries.

Undue Adverse Affect

If the Board concludes that the Project has an adverse affect under Criterion 8, the Board must evaluate whether the adverse effect is "undue." The Board will conclude that adverse effect is "undue" if it reaches a positive finding with respect to any one of the following factors:

Does the Project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?

Does the Project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area?

Has the applicant failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the Project with its surroundings?

Quechee Lakes Corporation, #3W0411-A-EB, Findings of Fact, Conclusions of Law, and Order at 19-20 (Nov. 4, 1985). *And see, Black River, supra*, at 19-20.

Does the Project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?

Under this first factor, the Board must determine whether the Project violates a clear, written community standard intended to preserve the aesthetics or scenic beauty applicable to the area in which the Project would be located.

In evaluating whether a project violates a clear written community standard, the Board routinely looks to town plans, open land studies, and other municipal documents to discern whether a clear, written community standard exists and should be applied in the review of the aesthetic impacts of a project. *See Raymond and Centry Duff*, #5W0952-2-EB, Findings of Fact, Conclusions of Law, and Order at 9 (Jan. 29, 1998); *Re: Herbert and Patricia Clark*, Application #1 R0785-EB, Findings of Fact, Conclusions of Law, and Order at 35 - 37 (Apr. 3, 1997); *Re: Thomas W. Bryant and John P. Skinner* at 22; *and see Nile and Julie Duppsstadt & John and Deborah Alden*, #4C1013-B, Findings of Fact, Conclusions of Law, and Order at 34 (Apr. 30, 1999) (town plan can be an authoritative source of clear community aesthetic standards, and it is therefore appropriate for the Board to rely upon such a Plan "in determining whether [a] Project violates the community standard.")

The Board explained the intent of the clear, written community standard in the *Re: Town of Barre*, #5W1167-EB, Findings of Fact, Conclusions of Law, and Order (Jun. 2, 1994):

In adopting the first standard in the Quechee analysis, the Board intended to encourage towns to identify scenic resources that the community considered to be of special importance: a wooded shoreline, a high ridge, or a scenic back road, for example. These designations would assist the district commissions and the board in determining the scenic value of specific resources to a town, and would guide applicants as they design their projects.

Id. at 21.

In *Town of Barre*, the Board ruled that a clear, written community standard cannot "apply generally to the community at large rather than to specific scenic resources in the project area." *Id.* at 21.

In contrast to the *Town of Barre* was the town plan provision at issue in *Re: Taft Corners Associates*, #4C0696-11-EB (Remand), Findings of Fact, Conclusions of Law, and Order (Revised) (May 5, 1995). The Board found that the town plan identified as

"significant" the views of the mountains to the east and west and foreground views from Interstate 89 of "the high ground at the water tower and other open spaces... ". *Id.* at 19. The Board found a clear, written community standard "which contains provisions regarding aesthetics" that applied to the project. *Id.* at 42; *accord, Re: Herbert and Patricia Clark, supra* (Brandon Town Plan constituted clear, written community standard where it established and defined three categories of scenic resources, contained an inventory that described 30 scenic areas, and provided recommended policies and implementation measures for protecting the scenic value and resources of the listed areas and where the proposed project was located in one of the scenic areas listed in the inventory); *Re: The Mirkwood Group and Barry Randall, #1R0780-EB, Findings of Fact, Conclusions of Law, and Order* at 22-23 (Aug. 19,1996) (Pittsford zoning ordinance constituted clear, written community standard where a proposed radio tower was located within a conservation district and the ordinance contained a clear statement of the community policy against use of conservation district lands for anything other than dwellings, forestry, and agriculture).

The Board must, therefore, examine whether there are community aesthetic standards that are applicable to the Project. The Board notes that, although the analysis for both Criterion 8 and Criterion 10 may rely upon language in a town plan, the requirements are different. As discussed later, under Criterion 10 the Board has historically required that in order to give regulatory effect to language in the town plan, the language must be sufficiently clear to prohibit a project. The Board also may refer to zoning ordinances to clarify an ambiguity in the town plan. However, under Criterion 8 the Board has not historically required the same degree of mandatory language.

Under Criterion 8, the Board has stated that a clear, written community standard requires more specific language than "consideration should be made ... " *Barre Granite* at 81. However, in *Lemieux*, the Board found that the language in the Chelsea Town Plan was a sufficiently clear, written community standard because protecting the "aesthetic heritage and scenic vistas is a dominant policy of the Town Plan." *Leonard R. Lemieux, Rose T. Lemieux d/b/a Chelsea Ledge Pit, #3R0717-EB, Findings of Fact, Conclusions of Law, and Order* at 9 (Mar. 1,1995).

Scenic and Visual Beauty

Policy #11 of the Cavendish Town Plan states: "Development should not detract from the historic character and aesthetic qualities of the village centers." Town Plan at 34. This provision is applicable because it is intended to preserve the aesthetics of the village centers. The Permittee argues the language sets no standard and does not prohibit landscaped access roads or development along Route 131.

The Board concludes that the language preserving the character of the villages is a dominant policy of the Town Plan. However, the Project is sufficiently far removed

from the village centers and the Board concludes that the Project would not detract from the historic character and aesthetic qualities of the village centers.

ANR cites provisions of the Cavendish Town Plan that protect steep slopes. Objective # 3 under Goal #1 states: "Development should be discouraged on slopes greater than 15%." Town Plan at 4. The Land Use Section under Special Considerations states that: ". . . steep slopes (greater than 15%) should be protected from any development which could reasonably be expected to cause soil erosion. Town Plan at 33. However, these provisions protect against soil erosion and are not a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area.

CPC and ANR assert that in 1998 Route 131 was designated as a State Scenic Highway by the Vermont Transportation Board pursuant to Title 19, Chapter 25 Section 2501 (Scenic Road Law). They argue that the Town Plan and Management Plan contain provisions which protect the scenic qualities of the road.

The Town Plan states:

It is the Town's intention to maintain the scenic values along Route 131 while maintaining high standards of safety. The Route 131 Inventory and Management Plan (1998) should be referred to for specific recommendations regarding maintenance and resources along the road.

Town Plan at 22.

Although the first sentence could be interpreted as creating a clear standard for preserving scenic values on scenic roads, the second sentence references the Management Plan and demonstrates that the intention is to balance safety concerns with highway maintenance, not limit development that might impact the scenic qualities of the road. Thus, the above language in the Town Plan addresses activities within the highway right of way, not development along adjacent lands. This conclusion is supported by the fact that the purpose of the Management Plan was to provide recommendations for maintenance and construction on Route 131, as well as to give the Town a greater role in any work projects.

ANR and CPC also argue that the Management Plan is a clear, written community standard. The Management Plan contains a section entitled "Roadside Vegetation and Maintenance" which contains the following relevant principles: "Maintain or re-establish the native landscape along the corridor; and improve the views of the immediate and the regional landscape." Management Plan at 7. ANR also suggests that the Management Plan provides techniques related to protecting roadside vegetation

when it describes the importance of the tree canopy along Route 131 and how it should be protected.

The Permittee responds that the Management Plan only applies to the highway right of way and is not intended to prevent development along scenic highways. Permittee is correct that the 10 V.S.A. 2505 of the Scenic Road Law states that "nothing in this chapter shall preclude the rights of a landowner from developing property adjacent to a designated scenic road, so long as the development is in accordance with the existing law or ordinance." The Board also notes that the Management Plan which was written to protect a road designated under the Scenic Road Law is consistent with section 2505 because it only addresses construction and maintenance issues within the Route 131 right-of-way. Therefore, language in the Management Plan cannot be used to create a standard outside of the Route 131 right-of-way.⁴

Noise

The Appellants assert that a provision in the Town Plan that addresses earth resources creates a clear, written community standard intended to preserve the aesthetics or scenic beauty in the area. Specifically, the provision states:

The extraction of earth resources must not result in a nuisance to neighboring property owners through noise or dust, nor be a burden on public services.

Town Plan at 13.

The above provision applies to a particular area (earth resources extraction sites) and is intended to preserve the aesthetics of the area, including the area's characteristic quiet. Therefore it is a clear, written community standard and is applicable under Criterion 8. Appellants argue that unless the noise from the Project is restricted to 50 dBA Lmax at residences and outdoor areas of frequent human use, the Project would be a nuisance to the neighbors. The Appellants rely upon *Dominic A. Cersosimo and Dominic A. Cersosimo Trustee and Cersosimo Industries Inc #2W0813-3* (Revised) -EB Findings of Fact, Conclusions of Law, and Order (Apr. 19, 2001) where the Board applied a 50 dBA Lmax standard rather than a 55 dBA Lmax standard due to language in the town plan that stated that the extraction of earth resources should not cause an inconvenience to neighbors.

⁴

However, as discussed under Criterion 9(K), the process that the citizens of the Town of Cavendish went through to designate Route 131 as a scenic road is nevertheless still evidence of its scenic beauty and unique resources that are worthy of protection.

As will be discussed in more detail under Criterion 10, the Board concludes that the language of the Town Plan is similar if not stronger than *Cersosimo*. Therefore, in order to satisfy the clear, written community standard in the Town Plan, the Board will apply a 50 dBA Lmax standard in this matter to prevent any extraction of earth resources it permits from becoming a nuisance to neighboring property owners. As discussed in detail in Criterion 10, the Project would generate more than 50 dBA at several residences and does not comply with the clear, written community standard in the Town Plan.

Does the Project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area?

Under this second aesthetic factor, the Board must determine whether the Project offends the sensibilities of the average person. This includes whether the Project would be so out of character with its surroundings or so significantly diminish the scenic qualities of the area as to be offensive or shocking to the average person. *Re: Pike Industries, Inc. and William E. Dailey, Inc., #1R0807-EB, Findings of Fact, Conclusions of Law, and Order at 18 -19 (Jun. 25, 1998); Dupstadt, supra, at 35; and see, Re: Robert B. & Deborah J. McShinsky, #3W0530-EB, Findings of Fact, Conclusions of Law, and Order at 9 (Apr. 21, 1988), aff'd, In re Robert and Deborah McShinsky, 153 Vt. 586 (1990).*

Scenic and Visual Beauty

ANR argues that a quarry would be offensive and shocking in an area of steep forest hillsides, a scenic highway, and picturesque villages. ANR states that an industrial and commercial activity is not compatible in such a setting.

The Permittee responds that only the access road would be visible and the area near the intersection of the access road and Route 131 would be landscaped. The Board agrees that the only views of the North and South Quarries would be distant and that the views are not shocking and offensive. Moreover, there are other quarries in the area which are visible in the distance from a few vantage points near Cavendish. Therefore, the only remaining question is whether the access road and hillside quarry are shocking and offensive.

Currently, the proposed site of the access road and hillside quarry appears shocking and offensive due to the fact that the hillside is denuded of trees. However, the question is what would the site look like if the Project is built compared to the way it appeared before the Permittee cut down the trees. The Permittee provided a series of exhibits depicting projected growth of the trees it proposes to plant pursuant to its Planting Plan over various time periods. As discussed under Criterion 4, due to the

steep slopes involved, the Board questions the viability and effectiveness of Permittee's Planting Plan. Regardless of whether the planted trees screen the views of the access road, while some may consider the switchbacks and tall rock faces out of character with their surroundings, they are not so out of character as to be shocking and offensive to the average person as viewed from Route 131.

The access road traverses the hillside and comes within a few hundred feet of some residences and within a few feet of the property lines to both the east and west. The access road would be clearly visible from the Merritt residence and other adjoining property boundaries. The fact that the Permittee plans a temporary quarry on the hillside in addition to the road compounds the impacts. If there were an adequate buffer between the road and the residences or property boundaries that would diminish some of these impacts, the Board would view this Project differently. For example, in *J.P. Carrara and Sons, Inc. #1R0589-EB* Findings of Fact, Conclusions of Law, and Order at 6 and 11 (Feb. 17, 1988), the Board based its decision that the project complied with Criterion 8 on the fact that there was a 200 foot wide vegetated strip that extended around the perimeter of the property. While a 200 foot buffer is not an absolute requirement for a quarry, without an adequate buffer to screen the Project, the Board concludes that the access road and hillside quarry would be shocking and offensive to neighboring landowners.

Noise

Under this second factor, the Board must determine whether the noise which would be generated by the Project would be so out of character with its surroundings or so significantly diminish the scenic qualities of the area as to be offensive or shocking to the average person. *In Re: Pike Industries, Inc. and William E. Dailey, Inc., #1R0807-EB*, Findings of Fact, Conclusions of Law, and Order at 18 -19 (Jun. 25, 1998); *OMYA, Inc. And Foster Brothers Farm, Inc. #9A0107-2-EB*, Findings of Fact, Conclusions of Law, and Order at 37 (May 25, 1999), *aff'd*, *OMYA Inc. v. Town of Middlebury*, No. 99-282 (Jul. 26, 2000).

There is no question that the noise from the Project would add to the noise presently experienced by Appellants near the proposed North Quarry, South Quarry and access road. As discussed before, the intermittent nature of the noise would be out of character for the above areas and the volume of the noise would be especially out of character for Appellants near the North Quarry and those near the South Quarry who are removed from Route 131. The question, however, is not merely whether the noise from the Project is out of character with the surrounding area but whether it is *so out of character* as to be aesthetically shocking or offensive to the ordinary person.

In *OMYA* the Board found the impacts and noise levels from 170 additional trucks would be shocking and offensive because it would disrupt the tranquility of the

area and make eating, talking, shopping, sleeping etc. less pleasant. *OMYA* at 38. On the other hand in *Talon Hill* the Board held:

Some traffic noise is generated on the nearby roads. Farm machinery is frequently in use. A train regularly travels through the area. The Gun Club does not dramatically interrupt this setting. The noise from the Gun Club will remain annoying. Nothing more. It is not shocking. It does not offend the Board's sensibilities.

Talon Hill at 10.

The noise from the operations of the North and South Quarries does not rise to the level of noise that was possible in the *OMYA* case. Rather, the Board concludes that this case falls closer to the disturbances found not to be offensive or shocking in *Talon Hill* because, while the noise may be annoying, it would not disrupt day to day living to the level that is shocking and offensive.

While the Permittee provided detailed evidence concerning the noise generated from the operations of the North and South Quarries, there was no evidence produced concerning the noise from the access road construction and hillside quarry. Since this noise could last for up to 4 construction seasons, the Board requires evidence in order to consider the impacts. The Permittee did not produce any evidence on the noise impacts from these activities and therefore, did not meet its burden of production and fails this test.

Has the applicant failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the Project with its surroundings?

In judging whether there should be mitigation, the Board looks to the steps that the applicant has taken or may take to reduce the aesthetic impacts of a project on the character of the area where it is proposed; the Board asks whether there are generally available mitigating steps that have or should be taken to improve the harmony of the project with its surroundings. *See Re: Thomas W. Bryant and John P. Skinner* at 22 (height and exterior color restrictions on homes, plantings to screen the development, covenants to govern future activities on the site, and retained open space all comprised generally available mitigating steps to alleviate adverse effects of subdivision on the surrounding area).

Pursuant to 10 V.S.A. §6086(c), the Board has the authority to impose conditions necessary to alleviate adverse impacts with respect to the ten Act 250 criteria. As long as a condition constitutes a proper exercise of the police power and alleviates adverse

affects that would otherwise be caused by a project, the Board may impose the condition.

A permit may be granted if appropriate permit conditions can alleviate the undue adverse effect of a project as presented. Generally, the Board has issued permits with conditions and stated that it is up to the permittee to choose how to meet the conditions. *Hannaford Brothers Co. and Southland Enterprises, Inc., #4C0238-5-EB Findings of Fact, Conclusions of Law, and Order at 23 (Nov. 27, 2002).*

On the other hand, the Board will deny a permit if permit conditions cannot be drafted to alleviate the undue adverse impact. However, it is contrary to common sense and could result in irreparable environmental harm to grant a permit authorizing a project with permit conditions which alleviate the undue adverse impacts, if the evidence indicates the Permittee cannot comply with the conditions. This holds especially true for a quarry operation where construction would result in environmental impacts which could not be easily reversed.

Scenic and Visual Beauty

The North Quarry would be confined to an internal location within the Project tract. Therefore, any neighbors' views of the North Quarry would be distant views. Since the operational areas of the North Quarry would not be substantially visible except from a distance, the North Quarry requires no additional screening. Although the location of the South Quarry would be close to Mills' property line, the Board concludes that the existing vegetation on the Project site provides adequate screening and that no further mitigation would be required.

The mitigation for the access road and hillside quarry is more complicated because of the visibility of the location, the steepness of the hillside, and the proximity to the neighbors. The Permittee acknowledged as much when it conceded that it was a very difficult place to put a road.

The Board notes that the access road and quarrying of the hillside would be extremely visible because it is adjacent to Route 131 to the south and neighbors to the east and west. The Permittee plans to plant trees primarily in the area near Route 131 which when mature, would partially screen the first switchback of the access road. The remaining switchbacks and tall rock ledges would be visible from Route 131 and the neighboring properties, one of which is located within 100 feet of a switchback of the access road.

There is no screening at all to the east or west of the access road. Instead, the Permittee either relies on the vegetation on its neighbors' property or believes that no screening is necessary. The Board disagrees with both approaches. Under the

mitigation requirement, an applicant who wishes to develop property near the boundary of their neighbor must undertake reasonable mitigative measures on its own property such as screening, or reach some agreement with its neighbors that permanently preserves the necessary screening.

The Board is also concerned that the planting that the Permittee plans to do will not be effective for many years. Road construction, which could take as short as one construction season and a few months if the hillside is not quarried, would likely take 2 to 4 construction seasons because the Permittee plans to quarry the hillside as it builds the road. Given that the planting may not occur for up to 4 years and that it may take 5 to 10 years before the small trees provide significant screening, the planting may not mitigate the view for over 10 years.

As a result, the neighbors to the east and west of the access road as well as travelers on Route 131 would have front row seats to prolonged road construction and a movable quarry working its way up the hillside. The Board concludes that the Permittee has not attempted reasonable mitigation to alleviate those impacts.

Noise

In *Barre Granite*, the Board set a maximum allowable noise level for when noise is unduly adverse at 55 dBA Lmax at any residence or outdoor area of frequent use and 70 dBA Lmax at the property boundary. Since *Barre Granite*, the Board has continued to utilize the dBA Lmax as a standard, although on occasion it has made minor modifications to the allowable Lmax level based on the particular facts and circumstances of a case.

For example in *Cersosimo*, the Board set a standard of 50 dBA Lmax at any residence or outdoor area of frequent human use because of specific language in the town plan that stated noise from quarries should not be an inconvenience or burden to neighbors. In *Re: Alpine Stone Corporation, ADA Chester Corporation, and Ugo Quazzo*, #2S1103-EB, Findings of Fact, Conclusions of Law, and Order at 33 (Feb. 4, 2002), the Board set a standard of 55 dBA Lmax at any residence or area of frequent use. In *Re: Hannaford Bros. Co. and Southland Ent., Inc.*, the Board ultimately adopted noise maximums based on a stipulation of 55 or 60 dBA Lmax depending on location for Lowe's daytime operations and 45 or 50 dBA Lmax for Lowe's nighttime operations. *Id.*

Thus, the Board has historically used permit conditions, when possible, to set maximum sound levels to alleviate a project's undue adverse impact. In addition, the Board regularly imposes permit conditions limiting the hours of operation.

The Board recognizes the advantages and limitations of using a set Lmax noise level, and modifying it if necessary to fit the circumstances of the case. The current standard is easy to understand, predictable, and enforceable because it sets a bright line. The standard has worked for the most part because the setting of the proposed projects in the majority of the Board's prior cases was either rural (*Barre Granite*) or urban (*Hannaford*). The instant case presents additional challenges that highlight the limitations of the current approach because the Project generates noise in both quiet rural areas (North Quarry) and noisy areas (access road/Route 131 intersection).

Through these proceedings the Board has recognized the limitations of the Lmax standard and has come to appreciate that the "bright line" may not always be the best line. For example, the current standard only regulates the maximum permissible noise level, not the frequency that permissible maximum may be reached. Constant noise at or slightly below the maximum permissible level may also be unduly adverse in certain circumstances.

Second, by its very nature, an absolute maximum noise standard sets one level regardless of the location of the project. On the other hand a relative standard may be more appropriate because it accounts for the existing background noise level in setting the appropriate noise level. Not surprisingly, the current absolute standard may result in a noise standard that is too strict, and may be even unobtainable in areas where the existing background noise is high. For quiet areas with low background noise levels, the current standard may not be protective enough.

Specifically in the instant case, the Appellants who live nearest to the North Quarry reside in a quiet rural residential area with background noises under 30 dBA L90. A permit condition of 50 dBA Lmax would allow a several fold increase in noise levels that would result in a dramatic change and impact to the character of the area. Thus, for quiet areas such as the North Quarry, 50 dBA Lmax may allow an undue adverse impact and may not be sufficiently protective.

Of equal concern, a 50 dBA Lmax standard may not make sense in noisy areas such as the intersection of the access road and Route 131. It may be of questionable logic and practically impossible to enforce a 50 dBA Lmax when trucks passing by on Route 131 already register 78 dBA at an adjacent residence.

As a result, the Board recognizes the need to consider a relative approach that would adjust the standard upward in areas with loud existing background noise yet preserve the quiet in rural residential areas removed from busy highways.

The Appellants argue that the Board should continue to apply the Lmax standard articulated in *Barre Granite* and its progeny. However, the Appellants point out as discussed *supra*, as a result of the language in the Town Plan concerning earth

extraction activities, the Board should require the Project to meet the 50 dBA Lmax standard that the Board applied in *Cersosimo*.

Alternatively, the Appellants argue that a relative standard based on the background noise level as measured in L90 dBA would be more protective of the quiet found in rural areas. The Appellants suggest a new standard that would allow an Lmax of 10 to 15 dBA above the existing L90. The Board questions the feasibility of this approach given the uncertainties and variability in measuring L90. The Appellants' expert witness acknowledged that in areas such as the instant case where there is greater than a 15 dBA difference between the loudest times and the quietest times, the use of L90 is not appropriate. The Board also notes that the allowable noise level should be set to alleviate undue noise levels. Appellants' suggestion would deny permits to any development which produces almost any noise in a quiet area, even if the noise was not unduly adverse.

The Permittee argued that the Board should use a Leq standard which considers all noise and takes a logarithmic average that gives greater weight to louder noises. Specifically, the Permittee suggests that the Board impose a permit condition for 55 dBA Leq 1 sec as measured at nearby homes for operational noises exclusive of blasting and off-site truck trips. The Board notes that the time period of 1 second for an Leq theoretically would result in readings similar to a Lmax. Regardless, the Board has historically used Lmax.

The Permittee's suggested condition ignores prior Board precedent that regulates noise at property boundaries as well as outdoor areas of frequent human use. The Permittee's suggestion also ignores the Board's holding in *Cersosimo* and the fact that the Board regularly regulates noise from trucks.

Alternatively, the Permittee suggests that the Board impose a permit condition that sets a standard of 50 dBA Leq 1 hour and an Lmax of 70 dBA. These levels would be adjusted upwards if the existing noise levels in the area exceed the specified level. In addition, Permittee's proposed condition would exempt several activities including motor vehicles traveling within 100 meters of a highway.

The Permittee's alternative proposal is not protective enough because it would permit regular loud noises over 50 dBA as long as the noise does not occur frequently enough to violate the 50 dBA Leq 1 hour level or so loud that it was over 70 dBA. In *Hannaford*, the Board rejected the use of Leq 1 hour because a project with a mix of loud and quiet periods would still comply even if the loud periods were unduly adverse. ("For the loud, intermittent noises that are generated by granite or gravel pits, or by the proposed Lowe's store, the Board does not believe that an average noise limitation (Leq) is of much value.") *Id.* at 23 fn 2. For the same reasons discussed in *Hannaford*, the Board concludes that noise at that level would be unduly adverse in the instant

case. The Board is also troubled by the complete lack of noise levels for trucks traveling within 100 meters of a highway.

While the Board recognizes the shortcomings of the existing standard, the parties' proposed alternatives are not without their own, often obvious shortcomings. The Board also recognizes that the evidence produced in an adversarial process is designed to advocate a particular position, not strike a reasonable balance. While the parties' evidence has offered the Board substantial guidance, it has not provided a secure foundation from which to build a new noise standard. Given the complex and technical field of environmental acoustics, the Board will defer a major overhaul of its noise rulings until it has the opportunity to address it through rulemaking after hearing from a panel of experts and other interested parties.

Thus, the Board will follow the *Barre Granite* line of cases as modified in these facts and circumstances by *Cersosimo*. The Board recognizes that Permittee's most compelling argument is that the trucks on the access road require a different standard because while they generate 78 dBA as measured at the Merritt camper, the noise may blend in with the noise from Route 131. The Board notes that even were it to adopt this exemption, the Project would still not comply with the other noise levels such as the 50 dBA Lmax at residences and outdoor areas of frequent human use 101 meters from Route 131. Therefore, although the Board will consider the proposed exemption during rulemaking, it declines to adopt it today.⁵

While the Permittee may have made some efforts to mitigate the noise from the Project, the modeled noise levels even with Permittee's mitigative efforts fail to comply with the noise levels of 50 dBA Lmax at residences and outdoor areas of frequent human use and 70 dBA Lmax at property boundaries. This is due to the fact that the Project generates significant amounts of noise yet has little to no buffer between it and the surrounding neighbors. While the Permittee has suggested berms to block the noise from traveling off site, the Board found that the berms would only be effective for very short distances and would not alleviate the undue adverse impacts on residences greater than 100 feet from the berm.

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Had the Board been presented with more data including background noise, it could have considered modifying the noise standard in areas with high levels of existing noise such as the intersection of the access road and Route 131. The Board recognizes that projects located adjacent to noisy highways present difficult challenges in fashioning a noise standard. In the future, should the Board undertake this challenge, it would need to review data on the existing Lmax at various distances from the state highway, the Lmax with the project at various distances from the state highway, as well as some indication of the frequency of the noise such as an L10 or L90 measurement.

The Permittee chose not to conduct a sound test where exact sound measurements could be measured. After the Appellants objected, the Board ruled that it was up to the Permittee to determine how it was going to meet its burden of production. *McLean Enterprises, Corp., #2S1147-1-EB Memorandum of Decision at 42 (Sep. 19, 2003)*. Instead, the Permittee chose to conduct comprehensive sound modeling with the CADNA A acoustical computer model (CADNA A) to predict sound levels in the vicinity once the Project is in operation.

The Appellants' expert also utilized the CADNA A model to predict sound levels. Essentially, the programmer uses a model that places the quarry equipment on a topographical map and then chooses amongst several variables that determine the level of noise attenuation such as the level of foliage, the intervening terrain, weather conditions, and any manmade barriers.

Not surprisingly, both experts used different equipment, placed the equipment differently, used different inputs, even different topographical maps and came out with contradictory predictions. The Board requested the Permittee and the Appellants' expert to rerun the CADNA A model with fixed inputs that the Board set in order to be able to compare the results.

The Board concludes that the inputs that are appropriate for the Project are equipment operating 1.5 meters off the ground, foliage off, ground attenuation 0.8 G, and both North and South Quarries operating on the surface. The Board chose these inputs for the following reasons.

The foliage setting is a qualitative setting that can only be turned on or off. The Board concluded that foliage off was the appropriate setting because pursuant to the International Standards Organization (ISO), the foliage setting should be turned off unless one cannot see a short distance through the foliage. ISO 9613-2. The Board found that while the Project site was forested, it was not so densely forested that one could not see a considerable distance through the woods.

Ground absorption is set based on whether the ground is "porous ground," "hard ground," or somewhere between the two. Hard ground uses a setting of 0. Porous ground uses a setting of 1. If no particular input is used, the model uses an automatic default setting of 0.5. According to the ISO, porous ground includes ground covered by vegetation. ISO 9613 at 6. Since most of the site is covered by vegetation, the Board used a ground absorption setting of 0.8.

Finally, the Board assumed the equipment would be operating 1.5 meters above the ground. The Board chose this level because it is commonly used in the industry and because the Board was searching for realistic predictions, not best case scenarios.

As discussed in the Findings of Fact, with the above inputs even the Permittee's modeling predicts that the sound levels produced by the Project would be above 50 dBA Lmax at 7 of the 8 residences the Permittee used as receptors. (Mills 55.1 dBA, Aloan 54.9 dBA, Merritt 76.7 dBA, Stubelek 62.5 dBA, O'Brien 53.2 dBA, Behrman 50.3 dBA, Harrington 48.7 dBA, and Fitzpatrick 55.3 dBA). Thus, it is clear that the Project as proposed would not meet the noise levels the Board has set following *Cersosimo*. The inability of the Project to comply with the standards results from the steep access road winding its way up the hill within several feet of the Project site's boundary and the location of the South Quarry in a corner of the Project tract not far from several residences.

Whether Permittee's decision to design and locate the Project was based on economics or geology, it is not the Board's role to attempt to redesign the Project to reduce the noise impacts to the neighbors. *In re McShinsky*, 153 Vt. 586, 591 (1990); *Bernard and Suzanne Carrier*, #7R0639-EB (Reconsideration) Findings of Fact, Conclusions of Law, and Order (Aug. 14, 1997) (Board does not design projects for applicants nor does it provide advisory opinions on what hypothetical elements of design would receive the Board's approval.); *Herndon and Deborah Foster*, #5R0891-8B-EB, Findings of Fact, Conclusions of Law, and Order at 13 (Jun. 2, 1997) (Board does not design projects; it reviews and responds to submissions by applicants). Therefore, the Project fails to comply with Criterion 8 (aesthetics) because of the noise it would generate.

In sum, the Project fails Criterion 8 because the noise violates a clear, written community standard and the Permittee failed to adequately mitigate the noise to meet Board standards. The Permittee also failed to meet its burden of proof concerning noise generated from the access road construction and hillside quarry. The access road and hillside quarry are also shocking and offensive to neighbors and the Permittee failed to adequately mitigate the adverse impacts associated with the access road and hillside quarry.

Criterion 8 Historic Sites

The Board uses a three-part test to determine whether a project satisfies Criterion 8 (historic sites). First, it determines whether the project is or contains an historic site. Second, it determines whether the project will have an adverse affect on the historic site. Third, it determines whether the adverse affect, if any, is undue. *Re: Manchester Commons Associates*, #8B0500-EB, Findings of Fact, Conclusions of Law, and Order at 18 (Sep. 29, 1995).

Historic Site

"Historic site" is defined as "any site, structure, district or archeological landmark which has been officially included in the National Register of Historic Places and/or the state register of historic places or which is established by testimony of the Vermont Advisory Council on Historic Preservation as being historically significant." 10 V.S.A. § 6001(9).

Listing on the national and state registers is a question of fact. *Manchester Commons, supra*, at 19. DHP asserted that there are 5 buildings in the area of the Project (Glimmerstone, Joshua Parker/Stubelek, Celia Davis House, James Down House, and Henry Wiley House) listed on the state register as historic sites. If a structure is listed on the state register as an historic site, the Board has no discretion to declare such structure not to be historic. *Re: Stonybrook Condominium Owners Association, DR #385, Findings of Fact, Conclusions of Law, and Order* at 9 (Sep. 18, 2001).

According to DHP, these five houses are constructed by an unusual building technique called "snecked ashlar." The Permittee does not dispute the historic significance of the stone houses or that they should be considered historic sites. Instead, the Permittee responds that only the Glimmerstone and Joshua Parker/Stubelek homes are at issue because the other homes are located farther away and will not be impacted. The Permittee also questions the existence of snecked ashlar as a form of construction and asks whether it is simply a phrase coined by DHP. However, since all parties agree the homes are historic, the Board need not arbitrate a dispute over nomenclature. Instead, the Board will focus on whether, because of the nature of the construction of the historic stone homes, the Project would have an adverse affect on the homes.

While the Board has determined that the five homes meet the test for historic sites, the Board will first focus on the Glimmerstone and Joshua Parker/Stubelek because the other 3 homes are from 1/2 mile to over 1 mile away from the closest blasting location. If the Glimmerstone and Joshua Parker/Stubelek homes would not be adversely impacted, the other 3 homes of similar construction that are farther away would not be adversely impacted. However, if the Board determines that the Glimmerstone and Joshua Parker/Stubelek homes would be adversely impacted, the Board will also consider the three additional homes.

Adverse Affect

In determining "adverse effect," the Board must determine whether the project is in harmony with, or fits within the context of the site. *Manchester Commons, supra* at

21; *Re: Middlebury College, #9A0177-EB*, Findings of Fact, Conclusions of Law, and Order at 10 (Jan. 26, 1990). Two guidelines for evaluating this fit are:

- i. whether there will be physical destruction, damage, or alteration of those qualities which make the site historic, such as an existing structure, landscape, or setting; and
- ii. whether the proposed project will have other affects on the historic structure, landscape, or setting which are incongruous or incompatible with the site's historic qualities, including, but not limited to, such affects as the isolation of the historic structure from its historic setting, new property uses, or new visual, audible, or atmospheric elements.

Manchester Commons, supra at 21; *Middlebury College, supra* at 10.

Physical Destruction, Damage, or Alteration

All parties agree that the homes are constructed utilizing a masonry technique in which the outer walls are constructed using thin exterior slabs of vertical stones. The parties differ on the role of the outer stone wall and how and to what extent the outer stone wall is connected to the inner wall and the core of the wall.

The Permittee argues that the historic homes are a form of veneered rubble construction with large pieces of glimmerstone on the outside serving as a protective coat or "rain shield" for the inner wall of rubble. According to the Permittee, apart from keeping rain from the inner structural wall, the purpose of the glimmerstone is cosmetic.

The DHP and Appellants assert that the walls are constructed of the outer vertical stones, an interior rubble stone core, and horizontal stones at periodic intervals bridging the gap and tying the exterior, interior, and core together. DHP and the Appellants add that some of these homes have two stone wall faces with rubble between and some have an exterior stone wall with a post and beam interior frame. The DHP and Appellants add that the joints are bonded with soft lime mortar and that the inner and outer walls form one structural unit.

Regardless of the function of each component of the walls of the stone homes, the Board concludes that the homes are sensitive to damage from blasting due to the nature of their construction. Nevertheless, due to the nature of the Project and the ability of the walls to absorb some vibration, the Board concludes that the Project would not result in an adverse impact to the historic sites. Glimmerstone or mica schist is a fragile rock which requires great care in quarrying. The Permittee intends to harvest large blocks from the quarry. The fragility of the rock requires the Permittee to keep

blast energies low and localized because higher power blasts would destroy the stone the Permittee seeks to extract.

In general, the Permittee would begin the Project by blasting and stripping of overburden from the quarry face. Holes will then be drilled into the quarry faces and light explosive charges would be inserted and detonated to split the stone into large chunks. Boulders would be split at the quarry face and transported to the mill for further processing.

In order to successfully quarry the mica schist and minimize any impacts to historic sites and other neighbors, the Permittee has proposed a Blasting Plan. The Permittee proposes using a series of smaller blasts separated by short gaps known as delays. Delays spread out blasting energy and reduce the impacts to adjoining structures. The Permittee proposes using an 8 millisecond delay to avoid accumulation of blasting energy waves. It is the pounds per delay, not the total volume of explosives used in a particular shot that determines the off-site impacts.

The USBM has developed recommended levels for ground vibration and air concussion from blasting which are intended to protect against structural damage and undue annoyance. The USBM standards were developed after extensive testing in order to develop a nationwide standard for the mining industry. The Permittee contends that the USBM standards were designed to protect even historic structures. However, DHP and the Appellants assert that the USBM standards may protect some historic structures, but would not protect the historic stone homes near the Project because the stone walls are essentially dry laid and are extra sensitive to damage from vibration.

The Appellants and DHP argue that there are no safe standards for vibration from blasting that would protect the stone homes at issue. Instead, the Appellants and DHP suggest that the Permittee has not conducted sufficient test blasting and monitoring to determine an acceptable level of vibration that would not adversely impact the homes.

Although there are no specific standards for the kind of construction at issue here, the Permittee has demonstrated that it would easily meet the existing USBM standards which are intended to protect historic structures. The Permittee intends to conduct a pre-blast structural survey of all houses and wells within 1500 feet of the closest blasting location. The Permittee also intends to monitor the production and overburden blasts with seismic equipment mounted near the closest homes who grant permission.

The frequencies and size of the blast charges can be changed by altering the length of delay between explosions in milliseconds and by changing the number of pounds per delay. If either the monitoring demonstrates the potential for physical harm

to the structures or should there be any warning signs of structural damage, the Permittee can modify the blasting to eliminate any adverse impacts. Had the Board granted a permit in this instance, it would have required the Permittee to meet USBM standards and to be in regular communication with the owners of the Glimmerstone and Joshua Parker/Stubelek homes to ensure no adverse impacts occur. The Board would have also ordered the Commission to retain continuing jurisdiction over this issue should there have been a need to modify the blasts because of signs of adverse impacts to the historic homes.

Thus, even given the sensitivity of the historic stone homes, the Board concludes that the Project would not cause an adverse impact to the Glimmerstone and Joshua Parker/Stubelek homes. As a result, the Board does not need to consider physical damage to the other historic homes which are located further away from the blasting locations.

Incompatible Effects

The Board concludes that there will be little to no visual impacts because the access road is not readily visible from any of the historic sites. The Board also concludes that the aural context will not be substantially disturbed, given that the sites are located next to Route 131 which already produces a significant amount of noise. Therefore, since the Project would not cause any physical destruction or damage nor will it result in any incompatible or incongruous impacts, the Project will not cause an adverse impact to the historic sites. The Project complies with Criterion 8 historic sites.

Criterion 8(A)

The Board will not grant a permit if it is demonstrated by any party opposing the applicant that the development or subdivision will destroy or significantly imperil necessary wildlife habitat or any endangered species, and

- (i) the economic, social, cultural, recreational, or other benefit to the public from the development or subdivision will not outweigh the economic, environmental, or recreational loss to the public from the destruction or imperilment of the habitat or species, or
- (ii) all feasible and reasonable means of preventing or lessening the destruction, diminution, or imperilment of the habitat or species have not been or will not continue to be applied, or
- (iii) a reasonable acceptable alternative site is owned or controlled by the applicant which would allow the development or subdivision to fulfill its intended purpose.

10 V.S.A. § 6086(a)(8)(A)(i)-(iii). The burden of proof is on the opponents under Criterion 8(A). *Id.* § 6088(b).

"Necessary wildlife habitat' means concentrated habitat which is identifiable and is demonstrated as being decisive to the survival of a species of wildlife at any period in its life including breeding and migratory periods." 10 V.S.A. § 6001(12). See *Re: Bernard and Suzanne Carrier, #7R0639-EB*, Findings of Fact, Conclusions of Law and Order at 18 (Oct. 5, 1990); *Re. Southview Associates, #2W0634-EB*, Findings of Fact and Conclusions of Law at 7-9 (Jun. 30, 1987) *aff'd In re Southview Associates*, 153 Vt. 171 (1989);

Criterion 8(A) involves a three-stage inquiry: (a) whether the alleged habitat constitutes "necessary wildlife habitat;" (b) if so, whether the project will destroy or significantly imperil such habitat; and (c) if so, whether one or more of subcriteria (i) through (iii) is satisfied. *Re: Mark and Pauline Kiesel, #5W1270-EB*, Findings of Fact, Conclusions of Law, & Order (Altered) at 37 (Aug. 7, 1998).

Appellants assert and Permittee concedes that 20 acres of deer wintering area that meets the test for "necessary wildlife habitat" would be severely impaired. There is no other necessary wildlife habitat that would be impacted by the Project. Therefore, since the first 2 inquiries were answered in the affirmative for the 20 acres of deer wintering area, the Board must determine whether the Project fails one or more of sub-criteria (i) through (iii).

Sub-criterion (i) requires the Board to determine whether the economic, social, cultural, recreational, or other benefit to the public from the Project will not outweigh the economic, environmental, or recreational loss to the public from the destruction or imperilment of the habitat or species. The Permittee claims that the State, region, and Town of Cavendish would receive \$28,402,432 of tax and other economic benefit from the Project over the term of the Permit (i.e. 50 years). The Appellants point out the important benefits provided by wildlife habitat such as hunting and other recreational activities. Although the Permittee's estimate of the economic benefit may be optimistic, the Board concludes that the economic benefits of the Project outweigh the losses from the destruction of habitat, hunting and other recreational activities. Therefore, the Project does not fail under sub-criterion (i).

Sub-criterion (ii) requires the Board to determine whether all feasible and reasonable means of preventing or lessening the destruction, diminution, or imperilment of the habitat or species have been or will continue to be applied. The Permittee asserts that it has entered into a Conservation Easement with the Division of Fish and Wildlife to protect 59.8 acres of deer wintering area on the Project site. The Permittee points out that the Conservation Easement protects land in a 3:1 ratio which exceeds the Division of Fish and Wildlife's guidelines of a 2:1 ratio.

The Permittee has also stipulated to permit conditions prohibiting winter activity in the North Quarry and the road between the North and South Quarries. The Permittee is also willing to plant a row of evergreen trees on the east and west sides of the South Quarry to facilitate deer migration. The Permittee argues that between the Conservation Easement and other mitigation measures, it has taken all reasonable steps to prevent or minimize damage to the deer wintering area.

The Board notes that in *J.P. Carrara & Sons, Inc. #1R0589-EB*, Findings of Fact, Conclusions of Law, and Order (Feb. 17, 1988), it specifically approved of conservation easements to supplement other mitigation measures for projects that impact deer wintering areas.

A positive finding would be made under subcriterion (ii), were it not for the Applicant's mitigation proposal. Since it would take approximately 40 years to reestablish a softwood forest of sufficient size and quality to constitute a deer wintering area, any attempt to mitigate the loss of the deeryard on the same site is not feasible or reasonable. The Board believes that the Applicant's proposal to purchase development and timber rights on 300 acres within the same watershed and deer management units, to be conveyed to the Department of Fish and Wildlife for deeryard management, would be a reasonable means of mitigating the destruction of the site. The mitigation lands will contain excellent winter cover, and are likely to be used by the same deer that wintered on the Applicant's land. The Board believes if the Agreement is fulfilled as intended, with 300 acres of contiguous land protected and enhanced for use as a deeryard, that all feasible and reasonable means of lessening the destruction, diminution, or imperilment of the habitat will be applied, and the Applicant has complied with Criterion 8(a).

Carrara at 13.

In light of the Conservation Easement and other mitigation measures, the Board concludes that Permittees have utilized all feasible and reasonable means of lessening the destruction, diminution, or imperilment of the deer wintering habitat. Therefore, the Project does not fail under sub-criterion (ii).

Subcriterion (iii) requires the Board to determine whether a reasonable, acceptable alternative site is owned or controlled by the Permittee which would allow the Project to fulfill its intended purpose. There was no evidence that the Permittee owns or controls a reasonably acceptable alternative site that would allow the intended development. The Board also notes that given that the Project is a quarry, the Permittee is limited in choosing an alternative site based on where the resource exists. Therefore, there is no alternative site, and the Project does not fail under subcriterion (iii).

Although the Project would destroy deer wintering areas, a necessary wildlife habitat, Permittees have sufficiently mitigated this loss, and because the Project does not fail under the subcriteria of Criterion 8(A), the Board concludes that the Project complies with Criterion 8 (A).

Criterion 9 (E)

Criterion 9(E) requires the Permittee to demonstrate that "the extraction of processing operation and the disposal of waste will not have an unduly harmful impact upon the environment on surrounding land uses and development, In *Barre Granite* the Board stated:

Criterion 9(E) embodies two key provisions. First, earth extraction and processing Projects may not cause undue harm to the environment or neighboring land uses. The Board considers Criterion 9(E) to include and go beyond aesthetic impacts, to encompass interference with enjoyment of the land and to seek to prevent such interference from becoming undue. *Re: John and Marion Gross d/b/a John Gross Sand and Gravel, #5W1198-EB Findings of Fact, Conclusions of Law, and Order at 16 (April 27, 1995)* Therefore, any specific effects demonstrated under other criteria (i.e. air, noise, or water pollution) may also be raised under 9(E) if the Project involves earth resources. Second, extraction Projects must have a "site rehabilitation plan" for restoring the disturbed land after extraction. This plan should include reclaiming the land and also preparing it for another use.

Barre Granite at 88.

The Board notes that this appeal involves other Criteria that protect against undue impacts to air, noise, water etc., and that the Board has already made determinations related to the Project's undue impacts on those media. In light of the fact these are the same media that Criterion 9(E) addresses in its protection against undue interference to the enjoyment of land, it would be redundant to repeat the same impacts that the Board has already found to be undue. Other than those grounds already discussed in this opinion, the Board finds no additional independent grounds to deny a permit in the first part of Criterion 9(E).

However, as discussed above, Criterion 9(E) also requires extraction projects to have a site rehabilitation or reclamation plan. The Permittee proposed a Reclamation Plan that it claims would restore the terrain of the quarry holes while leaving any remaining reserves in the ground available for future extraction. Beginning on the one year anniversary of extraction, the Permittee proposes contributing \$4,000 a year into an escrow account until the estimated \$90,600 needed to implement the Reclamation Plan is reached.

The Board has several concerns about the Permittee's Reclamation Plan. First, since the funding mechanism does not require a significant contribution up front, there would be little to no money available to implement the Reclamation Plan should the Permittee abandon the Project after only a few years of extraction.

Second, the Reclamation Plan only generally proposes covering the North Quarry hole with soil and creating a flat terrace around the perimeter of the South Quarry which will be full of water. The North Quarry hole and South Quarry terraced area would then be seeded and trees would be planted. The Reclamation Plan provides little to no detail on how the area would be graded, what would become of the infiltration basin and stormwater controls, the access road area and hillside quarry, refueling area and the buildings. Therefore, because the Reclamation Plan contains insufficient detail and the Project would cause undue impacts to the enjoyment of land, the Board concludes that the Project does not comply with Criterion 9(E).

Criterion 9(K)

Criterion 9(K) 10 V.S.A. § 6086(a)(9)(K) provides that:

A permit will be granted for the development or subdivision of lands adjacent to governmental and public utility facilities, services, and lands, including, but not limited to, highways, airports, waste disposal facilities, office and maintenance buildings, fire and police stations, universities, schools, hospitals, prisons, jails, electric generating and transmission facilities, oil and gas pipe lines, parks, hiking trails and forest and game lands, when it is demonstrated that, in addition to all other applicable criteria, the development or subdivision will not unnecessarily or unreasonably endanger the public or quasi-public investment in the facility, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of or access to the facility, service, or lands.

The burden of proof to show that the proposed development will satisfy Criterion 9(K) is on the Permittee. 10 V.S.A. § 6088(a). A failure to meet that burden may result in a denial of an Act 250 application. 10 V.S.A. § 6087.

The Board conducts two separate inquiries under Criterion 9(K) with respect to governmental and public facilities. First, the Board examines whether a proposed project will unnecessarily or unreasonably endanger the public investment in such facilities. Second, the Board examines whether a proposed project will materially jeopardize or interfere with (a) the function, efficiency or safety of such facilities, or (b) the public's use or enjoyment of or access to such facilities. *Swain Development Corp.*, #3W0445-2-EB, Findings of Fact, Conclusions of Law, and Order at 33 (Aug. 10, 1990).

Only the second inquiry of Criterion 9(K) is applicable to this case. The public facilities or land at issue are the Black River, Proctor Piper State Forest, Route 131, and Davis Road.

Black River and Proctor Piper State Forest

The Appellants claim that noise from the Project would diminish the public's use and enjoyment of the Black River and Proctor Piper State Forest. The Appellants rely upon *H.A. Manosh*, #5L0918-EB Findings of Fact and Conclusions of Law and Order (Aug. 8, 1988), where the Board held that the noise from sand and gravel extraction would diminish the peace and quiet in the lands along the Lamoille River used by the public for swimming.

However, in *Manosh* the gravel pit was only 200 feet from the Lamoille River. In the instant case, the Black River and Proctor Piper State Forest are sufficiently far removed from the Project that the noise impacts would be insignificant. In addition, Route 131, which produces a substantial amount of noise, is located between the Project and these resources. The Green Mountain Railroad also has tracks near the Black River and between the Project and Proctor Piper State Forest. Therefore, the Board concludes that noise from the Project would not interfere with the public's ability to use and enjoy the Black River and Proctor Piper State Forest.

With respect to Criterion 4, the Board has concluded that the Project's Erosion Control Plan lacks specificity concerning amongst other things the phasing of construction activities and erosion control measures for the access road and hillside quarry. This part of the construction may result in significant erosion which would impact the public's use and enjoyment of the Black River. As a result of the lack of details in the Erosion Control Plan, the Board holds that the Permittee did not meet its burden of proof concerning whether the Project may materially jeopardize or interfere with the public's use and enjoyment of the Black River.

Route 131

The Appellants also argue that the Project would interfere with the public's ability to use and enjoy Route 131. There is no question that the access road and hillside quarry would impact the special scenic qualities that led to Route 131's designation as a Scenic Highway. Although the designation of Route 131 as a Scenic Highway does not specifically limit development outside of the right-of-way, common sense demands that the Board look beyond the shoulder of the road to the scenic hillsides surrounding the road. Route 131 was designated a Scenic Highway because of the beautiful landscape that surrounds it, not because of any special attributes of its shoulder. Therefore, although the designation of Route 131 does not specifically limit development outside of

the right-of-way, the Board views the designation as evidence of Route 131's special scenic qualities that are worthy of extra protection.

Under Criterion 9(K), the question is whether the Project "materially jeopardizes or interferes ... with the public's use and enjoyment..." of the resource. There is no question that the Project would detrimentally impact the scenic qualities of Route 131. In fact, the Board has already ruled under Criterion 8 that the Project would have an undue adverse impact because of the visual impact to viewers, including those from the vantage point of Route 131. Given the scenic qualities of Route 131 that have received a special designation from the State, the Board holds that, at a minimum, the Permittee must satisfy the aesthetic protections in Criterion 8 in order to comply with Criterion 9(K). Since the Permittee did not satisfy Criterion 8, the Board concludes that the Project would materially interfere with the public's use and enjoyment of Route 131.

The Appellants also argue that the Project would also interfere with the safety of Route 131. Under Criterion 5, the Board has already determined that the increase in truck traffic is relatively insignificant compared to the already substantial truck traffic that uses Route 131. However, the Board also held that the Permittee did not produce sufficient evidence for the Board to determine whether trucks turning on to or from the access road would interfere with the safety of Route 131. In light of the same evidentiary shortcomings, the Board concludes that the Permittee's did not meet their burden of proof that the Project complies with Criterion 9(K).

Davis Road

No Project vehicles would be using Davis Road. The only question is whether noise from the Project would materially interfere or jeopardize the public's use and enjoyment. Davis Road is a quiet gravel road that is recognized in the Town Plan as a scenic road. While the Project would increase the noise experienced on Davis Road, the noise from the Project would be under 45 dBA. The Board concludes that while the Project's noise would be distinctly audible and may annoy some people, it would not materially interfere or jeopardize the public's use and enjoyment of Davis Road.

Criterion 10

Before granting a permit, the Board must find that the project "is in conformance with any duly adopted local or regional plan or capital program of Title 24." 10 V.S.A. §6086(a)(10). The burden of proof is on the Permittee. 10 V.S.A. §6088(a).

The Board has held that when town and regional plans do not conflict, a project will be reviewed for its conformance with both plans. *Green Peak Estates*, #8B0314-2-EB, Findings of Fact, Conclusions of Law, and Order (Jul. 22, 1986), *aff'd*, *In re Green Peak Estates*, 154 Vt. 363 (1990); *Heritage Group, Inc.*, #4C0730-EB, Findings of Fact,

Conclusions of Law, and Order (Mar. 27, 1989); *George & Barbara Musbek*, #2W0600-EB, Findings of Fact, Conclusions of Law, and Order (Jan. 13, 1986). If there is a conflict between the town and regional plan, the regional plan applies if project has substantial regional impacts; if the project does not have substantial regional impacts, then the town plan, not the regional plan, applies. *Richard Provencher*, #8B0389-EB, Findings of Fact, Conclusions of Law, and Order (Jan. 19, 1988).

Specific versus Ambiguous Language

If the town plan or regional plan provisions are specific, they are applied to the proposed project without any reference to the zoning regulations. A provision of a town plan evinces a specific policy if the provision: (a) pertains to the area or district in which the project is located; (b) is intended to guide or proscribe conduct or land use within the area or district in which the project is located; and (c) is sufficiently clear to guide the conduct of an average person, using common sense and understanding. (*Mirkwood test*). *The Mirkwood Group and Barry Randall*, #1R0780-EB, Findings of Fact, Conclusions of Law, and Order at 29 (Aug. 19, 1996); *The Van Sicklen Limited Partnership*, #4C1013R-EB, Findings of Facts, Conclusions of Law, and Order at 52 (Mar. 8, 2002).

If the provisions are ambiguous, however, the Board examines the relevant zoning regulations for provisions which resolve the ambiguity. *Molgano* 163 Vt. 25 (1994) at 29-31. This does not mean that the Board conducts a general review of a project for its compliance with the zoning regulations, but rather it sees if there are provisions in the zoning regulations that address the same subject matter that is at issue under the town plan. *Re: Fair Haven Housing Limited Partnership and McDonald's Corporation*, #1 R0639-2-EB, Findings of Fact, Conclusions of Law, and Order at 19 (Apr. 16, 1996), *aff'd*, *In re Fair Haven Housing Limited Partnership and McDonald's Corporation*, Docket No. 96-228 (Vt. Apr. 23, 1997) (unpublished). In the instant case, the Town of Cavendish does not have zoning regulations which means that the Board is left to do its best to interpret the Town Plan.⁶

6

Towns can, and should, control their own futures through comprehensive planning, zoning and subdivision regulations. Reliance on Act 250 alone to address development places decisions on a town's future beyond its control. This decision once again highlights the importance of local planning in the review and approval of developments and subdivisions. As the Board twice noted less than a year ago:

A strong town plan, accompanied by clear zoning regulations and the enforcement thereof, offer communities very effective tools for controlling

Mandatory versus Advisory Language

Most town plans and regional plans are not written like zoning bylaws. They frequently do not contain words such as "prohibited" or phrases such as "shall not be allowed." But this does not mean that they are legally meaningless. Town and regional plans by their very nature, as the Board has recognized, are aspirational. They indicate the direction that a town or region wants to take in terms of its development; they often do not set absolute restrictions or prohibitions on development. See *John A. Russell Corporation and Crushed Rock, Inc.*, Land Use Permit Application #1 R0489-6, Findings of Fact, Conclusions of Law, and Order (Aug. 19, 1999), citing, *Kalakowski v. John A. Russell Corp.*, 137 Vt. 219, 225 (1979); *Casella Waste Management Inc.*, #8B0301-7-WFP, Findings of Fact, Conclusions of Law, and Order at 41 (May 16, 2000).

But despite the recognition that town and regional plans are "abstract and advisory," *id.*, Act 250 requires that projects comply with a "local or regional plan," if one exists. 10 V.S.A. §6086(a)(10). The Board is therefore obliged by the language of the law itself to give regulatory effect to a document which is often not written in regulatory language.

This does not mean that, where a plan uses non-mandatory language, the Board will nevertheless read that language to prohibit a project. See, *Re: The Van Sicklen Limited Partnership*, #4C1013R-EB, Findings of Fact, Conclusions of Law, and Order at 55 (Mar. 8, 2002) (phrases such as "strongly encourages" and "should focus its efforts to encourage" indicate nonmandatory elements of a town plan); *Re: Green Meadows Center, LLC, The Community Alliance and Southeastern Vermont Community Action*, #2W0694-1-EB, Findings of Fact, Conclusions of Law, and Order at 42 (Dec. 21, 2000) (while words such as "direct," "encourage", "promote," and "review" in town or regional plans may provide guidance in the interpretation of such plans and may be used to

growth. The Town of Jamaica has not adopted zoning, and, as discussed below, the applicable town and regional plans do not clearly prohibit utility line extensions in the area of the Project site. Act 250 was never intended to enforce comprehensive land use planning goals that are not clearly stated in the town or regional plans.

Re: Central Vermont Public Service Corp. and Verizon New England (Jamaica) #2W1146-EB, Findings of Fact, Conclusions of Law, and Order (Altered) at 15 (Dec. 19, 2003); accord, *Re: Central Vermont Public Service Corporation, and Verizon New England*, #2W1154-1-EB, Findings of Fact, Conclusions of Law, and Order (Altered) at 15 (Dec. 19, 2003).

bolster more specific policies in such plans, they do not, by themselves, constitute a mandate). *And see, The Mirkwood Group and Barry Randall, supra, at 29; Ronald Carpenter, #8B0124-6-EB, Findings of Fact, Conclusions of Law, and Order at 16 (Oct. 17, 1995); Horizon Development Corp., #4C0841-EB, Findings of Fact, Conclusions of Law, and Order at 28 (Aug. 21, 1992). Compare, Re: Southwestern Vermont Health Care Corp., #8B0537-EB, Findings of Fact, Conclusions of Law, and Order at 54 (Feb. 22, 2001) (use of the phrase "shall be protected" in town plan is mandatory).*

In the instant case, the Town Plan uses mandatory language in some provisions (eg. "must"), language that is clearly not mandatory in other provisions ("maintain wherever possible"), and some language such as "should" where the Board needs to examine the context of the language to determine whether it is mandatory.⁷

In *Re. MBL Associates, #4C0948-EB, Findings of Fact, Conclusions of Law, and Order (Altered) (Jan. 30, 1996), aff'd, In re MBL Associates, 166 Vt. 606, 606 (1997)*, the Board interpreted the word "should" as advisory. In *MBL*, the Board's decision was supported by the definition section of the town plan which explicitly defined the word "should" as a "key word identifying that a requirement is encouraged but not mandated."

In *Re. Peter S. Tsimortos #2W1 I 27-EB Findings of Fact, Conclusions of Law, and Order at 16 (Aug. 29, 2003)*, there was no dispute the word "shall" was mandatory, especially because the town plan specifically defined it as mandatory. However, the town plan also contained Land Use Recommendations which used the word "should." The Board held that "regarding the *Recommendations* as only suggestions would be improper in this instance, as the phrase 'shall follow the guidelines' causes the *Recommendations* to be mandatory provisions." *Id.*

Thus, a provision in a plan is mandatory if it contains specific mandatory language such as "must" or "shall" or other unambiguous words that convey the mandatory nature of the requirement. In addition, as in *Tsimortos*, a provision that does not use mandatory language itself can still be mandatory if the definition section defines that class of provisions as mandatory in unambiguous language.

Cavendish Town Plan

7

Although the Board has in the past interpreted the word "should" to be mandatory, (Re: *Waterbury Shopping Village, #5W1068-EB, Findings of Fact, Conclusions of Law, and Order (Jul. 19, 1991)*; Re: *Swain Development Corporation #3W0445-2-EB, Findings of Fact, Conclusions of Law, and Order (Aug. 10, 1990)*), more recently the Board has recognized that "should" is not mandatory unless there is language in the town plan supporting a mandatory interpretation.

In the instant case, the Town Plan lists a series of "Objectives" under its "Goals." In the introduction section of the Town Plan, it states that "[t]he following goals and objectives provide a general overview of the direction in which the residents of Cavendish would like to see development occur in the town. Each chapter of the Plan provides specific objectives and recommendations, or action steps, to achieve these objectives." Town Plan at 16. Unlike *Tsimortos*, there is no mandatory language that the objectives or goals shall be followed. Therefore, in the absence of specific mandatory language in any Goal or Objective, the Board will interpret words such as "should" as not mandatory.

The Town Plan contains several provisions that are relevant to the Project. These provisions protect resources such as scenic areas, village centers, and wildlife, and address impacts from extraction of earth resources.

Mandatory Provisions of the Cavendish Town Plan

The earth resources section of the Town Plan states that mining can cause noise pollution and dust. The Town Plan requires that the extraction of earth resources not result in a nuisance to neighboring properties. The Appellants, John Mills, CPC, and the Town of Cavendish rely upon Policy #3 of the Earth Resources section of the Town Plan which reads as follows:

3. The extraction of resources must not result in a nuisance to neighboring property owners through noise or dust, nor be a burden on public services.

Town Plan at 13.

The above language is clearly mandatory because it uses the word "must." The Board notes that the language is also similar to, if not more prohibitive than, language in the Vernon Town Plan which the Board found to be mandatory in *Cersosimo*: "[t]he extraction of earth resources should not have an adverse environmental impact resulting in inconvenience to or burden on neighboring property owners nor represent a burden on municipal facilities." *Cersosimo* at 8.

In *Cersosimo*, applying the *Mirkwood* test to the Vernon Town Plan the Board found "while these provisions pertain to quarry operations and therefore pertain to the area or district in which the Bemis quarry is located, and they are intended to guide or proscribe quarrying operations, they are not sufficiently clear to guide the conduct of an average person, using common sense and understanding." In *Cersosimo*, as in the instant case, there were no zoning bylaws to aid in interpretation of the Town Plan. As a result, the Board construed "the Town Plan provisions at issue by further consideration of the Town Plan", *Cersosimo*, *supra* citing *Re: Bull's Eye Sporting Center and David*

and *Wendell Brooks, et al.*, #5W0743-2-EB, Findings of Fact, Conclusions of Law and Order (Feb. 27, 1997).

In *Cersosimo* the Board then went back to the town plan and focused on what is meant by the words "inconvenience" and "burden" in the Vernon Town Plan and established an objective test for their usage. The Board reasoned that if under the standard set in *Barre Granite* for Criteria 8 (Aesthetics) that noise levels above 55 dBA Lmax at "any residence or area of frequent human use" are "offensive and shocking" then "restrictions on noise must be established at a level *lower* than 55 dBA Lmax in order to meet the more stringent requirements mandated by an 'inconvenience' or 'burden test.'" The Board concluded that the Vernon Town Plan requires that noise levels at any residence or areas of frequent human use not exceed *50 dBA Lmax*.

Under the precedent set forth in *Cersosimo*, the Board will impose a 50 dBA Lmax standard at residences because of Policy #3 of the Earth Resources section of the Town Plan. The Board has already determined that the Project operations would not meet the 50 dBA Lmax standard at the Merritt, Stubelek, Mills, O'Brien, Fitzpatrick/Kelly residences and outdoor areas of frequent human use. Therefore, the Project operations does not comply with this provision of the Town Plan.

In addition, the Permittee did not provide evidence concerning the noise generated from the access road construction and hillside quarry. Given the scale of the work proposed, the equipment that would be utilized, and the immediate proximity of some of the neighbors, it is likely that the noise level from the access road construction and hillside quarry would be significantly louder at nearby homes than the operational noise from the North and South quarries. However, the Board does not have sufficient evidence to make a ruling because the Permittee did not meet its burden of proof by providing evidence of the level of noise from the access road construction and hillside quarry.

Policy #3 also states that the dust from the extraction of resources "must not cause a nuisance." The Board has already held that the Permittee did not meet its burden of proof concerning dust and other air pollutants generated from the construction of the access road and hillside quarry because the Permittee did not provide any data or a plan to control the dust. The Board found that the access road construction and hillside quarry could result in a significant amount of dust. Therefore, for the same reasons discussed in Criterion 1 (Air), the Board holds that the Permittee did not meet its burden of proof on this issue. It may be possible for the Permittee to use dust control measures to eliminate any potential nuisance, but no such plan is in evidence.

Non-Mandatory Provisions of the Town Plan

Scenic Roads

Although the Town Plan addresses Route 131, it does not contain any specific mandatory provisions that protect the scenic values adjacent to the scenic road. For example, as discussed under Criterion 8, Policy #7 of the Transportation section references the Route 131 Inventory and Management Plan for specific recommendations regarding maintenance along the road.

The Transportation section includes a sub-section on scenic roads which contains the following sentence. "It is the Town's intention to maintain the scenic values along Route 131 while maintaining high standards of safety." Town Plan at 21. This provision does not contain any mandatory language.

In addition, this language fails the second and third parts of the *Mirkwood* test because it is not intended to guide or proscribe conduct or land use within the area or district in which the project is located nor is it sufficiently clear to guide the conduct of an average person, using common sense and understanding. The language only states the Town of Cavendish's intention, but does not prohibit any land use or development adjacent to the road.

Goal #5 of the Town Plan is to "identify and protect important natural and historic features of the Vermont landscape, including ... scenic sites." Objective #3 of Goal #5 is to "develop policies and plans for the long-term protection of significant scenic roads..." Both of the above provisions do not contain mandatory language. Moreover, they fail the *Mirkwood* test because they state what needs to be done in the future but fail to proscribe conduct or set clear land use standards.

Public transportation, Rail, and Air Policy #8 only states that the tree canopy be maintained wherever possible. Similar to many of the above Policies, this Policy is not mandatory.

Compact Village Centers

Appellants also raise Objective #6 from the Town Plan which reads:

Business and industrial growth should occur in areas adjacent to where business and industry now exist and where Town water and sewer are available.

As discussed above, the use of the word "should" is not mandatory because the Objectives of the Town Plan only provide a general overview of where the residents would like to see development occur.

Other provisions of the Town Plan concerning compact village centers fail because the language is clearly not mandatory. For example, Goal #1 only encourages development to maintain the historic settlement pattern of compact village centers separated by rural countryside, but does not require such patterns.

Other Miscellaneous Provisions of the Town Plan Raised by Parties

Several other provisions that the above parties argue are applicable to the Project fail for the same reason. These include Objective #3 of the Town Plan which states that development should be discouraged on slopes greater than 15%; Wildlife Policy #1 which states that wildlife habitat should be protected; Earth Resources Policy #2 which states that development should not interfere with the subsequent extraction of earth resources; Policy #11 which states that development should not detract from the aesthetics of the village centers.

In sum, the only mandatory provision of the Town Plan that is applicable to the Project and passes the *Mirkwood* test is Policy #3 of the Earth Resources section. The Project does not comply with that Policy and therefore, fails Criterion 10.

Regional Plan

The Permittee argues that conformity with the Regional Plan is not an issue because the Regional Plan had not been formally adopted at the time of the filing of the original application. The town or regional plan that applies is the plan that was in effect as of the time that the application was filed. *Raymond F. and Lois K. Ross and Rochelle Levy, #2W0716-EB* (Nov. 2, 1987), *aff'd, In re Raymond F. Ross*, 151 Vt. 54 (1989) (town plan in effect on date a complete application is filed applies). However, in *In re: John A. Russell Corp.*, 2003 VT 93 (2003), the Supreme Court gave effect to pending plans in Act 250 proceedings.

The parties agree that although the prior regional plan expired in July of 2002, the new plan was adopted on September 17, 2002 and became effective October 22, 2002. The Regional Plan was pending at the time the Permittee submitted the application on September 14, 2002. Therefore, pursuant to *John A. Russell*, the Regional Plan applies to the Project. However, since the Project would not result in substantial regional impacts, should there be a conflict between the Town Plan and the Regional Plan, the Town Plan applies.

The Regional Plan contains goals, policies, and recommendations for Southern Windsor County. The Regional Plan states that the "goals and policies listed below are general overriding statements of the desired principles that should guide the growth and development of the Region and protect the natural and built environment." Regional Plan at 6. It states further that Goals are "broad statements of what the Region

ultimately wants to achieve." Policies are "agreed-upon courses of action to be followed to achieve the goals." Recommendations are "suggestions for specific actions to be carried out to reach the stated goals and policies."

Thus since the Goals are only broad statements and the Recommendations are only suggestions, absent any specific mandatory language within those provisions, the Board will interpret those provisions as advisory, not mandatory. The Board requires unambiguous language to interpret a provision or a class of provisions as mandatory. Therefore, the Board will also interpret the word "should" within a Policy as advisory.

The Project is located in the "Forest" Future Land Use category. This category indicates that "[f]orest resources provide many benefits for the region. They are valued for their ability to provide wildlife habitat; protect air and water quality; support the regional forestry, forest products, and tourism economies; and provide opportunities for outdoor recreation." Regional Plan at 18. Mining is not mentioned and in fact the Regional Plan later defines the industrial land use category as "the land best suited for industries such as mining." *Id.* at 19. However, the Future Land Use Map section states that the land use categories are meant to serve as a guide to the types and intensities of development and do not prohibit specific uses. *Id.* at 17. Thus, the above provision is not mandatory nor would it pass *Mirkwood's* requirement that it is intended to guide or proscribe conduct or land use.

The Appellants also cite to Land Use Policy #8 which states: "Local efforts to encourage compatible development next to significant natural resource (waterways, large forested areas, wildlife habitat, etc.) by requiring buffer strips visual screening and other mitigation devices should be supported." *Id.* at 21. As discussed above, in light of the Board's ruling that absent any mandatory language in a specific Policy itself, the Policies are not mandatory, this provision is not mandatory. In addition, the Policy fails the *Mirkwood* test because it is not intended to guide or proscribe conduct or land use within the area and is not sufficiently clear to guide the conduct of an average person.

The Appellants also assert that the Wildlife Resources section of the Regional Plan contains applicable Goals and Policies. Goal #1 is to preserve the diversity of indigenous animal and plant species. Policies #1 and 3 address incremental degradation and fragmentation of wildlife habitat and require consideration of wildlife habitat when locating development. Regional Plan at 65.

These Goals and Policies are only advisory because they do not contain the necessary mandatory language. Policies #1 and #3 only require that degradation and fragmentation of wildlife habitat should be discouraged. *Id.* at 65. Similar to the above provisions, they also fail the *Mirkwood* test because they do not proscribe any conduct or land use.

Appellants also assert that Goal #3 for Mineral Resources is applicable. Goal #3 reads as follows:

Ensure that methods used for extraction and utilization of minerals consider the surrounding development and minimize any significant negative effects on the environment.

Regional Plan at 83.

Although Goals in the Regional Plan are typically broad statements, the Board interprets Goal #3 as mandatory because of the use of the mandatory word "ensure." Although this Goal applies to the Project tract, it does not pass the *Mirkwood* test because it only requires consideration of the surrounding development and that does not proscribe conduct or land use. Nor is the requirement to minimize significant negative effects sufficiently clear to guide the conduct of an average person.

Policy #6 of the Mineral Resource section of the Regional Plan requires that mineral extraction and processing facilities should be planned, constructed, and managed, to not unduly interfere with the function and safety of the existing road systems serving the Project. Although this Policy passes the *Mirkwood* test because it is applicable to the Project tract, proscribes conduct, and is sufficiently clear to guide the conduct of the average person, it does not contain mandatory language.

The Appellants also assert that Policy #2 of the Cultural and Historic resources section of the Regional Plan applies to the Project. Policy #2 reads as follows:

Proposed development adjacent to or within significant historic or cultural sites should be compatible with the resources, and should enhance their historic value and appreciation where possible.

Regional Plan at 95.

The Policy applies to the Project because the Project is adjacent to the historic Joshua Parker house. The Policy also proscribes conduct and is sufficiently clear to guide the conduct of an average person. However, the Policy does not contain mandatory language.

The Appellants point out the Regional Plan's Scenic Lands and Open Space Goals # 2 and 3 which are to maintain or enhance the diversity of ecosystems throughout the Region, promote connectivity between conserved lands wherever possible, and protect the environmental character and integrity of significant natural and scenic resources as identified by local communities. Regional Plan at 100. Given that

the above Goals are only broad statements and do not contain specific mandatory language, the Board concludes that they are not mandatory.

In sum, the Project would comply with the Regional Plan.

VI. ORDER

1. The Appellants' motion for a remand is denied.
2. The Project does not satisfy 10 V.S.A. §6086(a)1(air) and (water), 4, 5, 8(aesthetics), 9(E), 9(K), and 10.
3. Land Use Permit Application #42S1147-1-EB is denied.
4. Jurisdiction is returned to the District 8 Environmental Commission.

Dated at Montpelier, Vermont this 24th day of November, 2004

ENVIRONMENTAL BOARD

/s/ Patricia Moulton Powden
Patricia Moulton Powden, Chair
Samuel Lloyd
Patricia Nowak
Alice Olenick
Richard C. Pembroke, Sr.
Jean Richardson
Christopher D. Roy

GLOSSARY OF ACRONYM DEFINITIONS

Act250.....	10 V.S.A. §§ 6001-6092
ANR.....	State of Vermont Agency of Natural Resources
Appellants'.....	A group opposing the Permit
Board.....	Vermont Environmental Board
CPC.....	Town of Cavendish Planning Commission
CSB.....	Town of Cavendish Select Board
Commission.....	District #8 Environmental Commission
DB(A).....	“A” weighted decibels
Decision.....	Commission’s February 19, 2003 Findings of Fact, Conclusions of Law, and Order
DFW.....	Department of Fish and Wildlife
EBR.....	Environmental Board Rule
EPA.....	Environmental Protection Agency
gpm.....	Gallons per minute
Handbook.....	Vermont Handbook for Soil Erosion and Sediment Control on Construction Sites
Hunter.....	Mr. William A. Hunter, Appellant
Leq.....	Equivalent sound Level over a period of time
Lmax.....	Instantaneous maximum sound level
Mills.....	Mr. John Mills, Appellant
NPDES.....	National Pollutant Discharge Elimination System

Permit.....	Land Use Permit #2S1147-1-EB
Permittee.....	McLean Enterprises, Inc.
SWCRPC.....	Southern Windsor County Regional Planning Commission
PHCRO.....	Prehearing Conference Report and Order
Regional Plan.....	Regional Plan for the Southern Windsor County including Cavendish, Vermont
VTRANS.....	Vermont Agency of Transportation
VWR.....	Vermont Water Regulations