

STATE OF VERMONT
VERMONT ENVIRONMENTAL COURT

Route 103 Quarry	}	
(Appeal of J.P. Carrara & Sons, Inc.)	}	Docket No. 205-10-05 Vtec
	}	(Act 250 Permit No. 1R0589-8)
	}	

Decision on the Merits

J.P. Carrara & Sons, Inc. (hereinafter “Carrara”) has long operated a dolomite quarry on a portion of the 59± acre tract of land it owns along the northern boundary of Vermont Route 103, in Clarendon, across from the Rutland Airport. Carrara originally extracted dolomite rock from outcroppings above ground level. Beginning sometime in 1996, Carrara began extracting rock from below ground level, including through the use of explosive charges.

Carrara first sought an Act 250 permit for its Route 103 quarry (the “Carrara Quarry”) in 1986. It subsequently sought several amendments to its Act 250 permit. Its most recent Act 250 amendment request is the subject of this appeal. Carrara’s current application requests that it be allowed to:

- (1) lower the Quarry floor by an additional 105 feet, to a depth of 517 feet above sea level;**
- (2) increase the maximum limits of allowed explosives;**
- (3) increase the number of truck trips to and from the Quarry; and**
- (4) extend the life of the Carrara Quarry permit for 15 years.¹**

Carrara filed the initial appeal in this proceeding on September 30, 2005. The Neighbors identified below, some of whom have lived in this neighborhood since before Carrara began its quarry operations, filed a cross-appeal on November 1, 2005. This Court issued its initial Scheduling Order on December 1, 2005. After addressing a number of pre-trial motions, the Court conducted a site visit and completed a bench trial over the course of six calendar days. The parties were permitted an opportunity to file pre- and post-trial memoranda, proposed findings of fact and conclusions of law.

¹ Carrara initially requested that its Permit be extended for an additional term of 30 years from the date of this Decision, but then subsequently reduced its request to 15 years, as noted in its proposed Findings and proposed Permit.

Based upon the evidence admitted at trial, including evidence put in context by the site visit, the Court makes the following findings and determinations:

I. Procedural History and Determinations.

When this Court addresses an appeal from an Act 250 district environmental commission determination, it is important to first reference the procedural history of the case, the parties who have standing in the pending appeal, and the Act 250 criteria that have been preserved for review in the appeal. Both the district commissions and the former Environmental Board established this procedure for drafting decisions, and their procedure often provided a clear announcement of decisions involving multiple issues, some of which were very technical. Such will be the case in this appeal. We therefore believe it appropriate to follow a similar format in this Decision, to the extent our court Rules and legal precedent permit.

A. Applicable Permit provisions:

Carrara first obtained an Act 250 permit to operate its quarry in 1988, when the Vermont Environmental Board issued permit #1R0589-EB, along with its Findings of Fact and Conclusions of Law, on February 17, 1988. That permit was issued after Carrara appealed the denial of its permit application by the District Environmental Commission #1, per the Commission's decision of December 22, 1986. From this first Act 250 permit issued by the former Environmental Board in 1988, Carrara was authorized to use explosives in the Quarry to retrieve rock.

The Carrara Quarry was the subject of several other Act 250 applications and revocation proceedings. In connection with its application for a third amendment to its Act 250 permit (see Amended Land Use Permit, Findings of Fact and Conclusions of Law #1R0589-3-EB (3rd Revision),² all dated April 21, 1994 and hereinafter collectively referred to as the "1994 Amended Permit"), the former Environmental Board established specific standards for notification and monitoring of the blasting and other commercial activities at the Carrara Quarry. While there have been several other permit amendments since then, as summarized below, the 1994 Amended Permit serves as the primary reference point from which Carrara made

² This third amendment to the Carrara Quarry Permit, Findings and Conclusions went through three revisions as a consequence of various motions to alter filed by the parties who appeared before the former Environmental Board. The first version of this amended Permit, Findings and Conclusions was issued on February 2, 1994. Where the amended Permit is hereinafter referenced in this Decision, such reference is to the third revision to the third amendment to the Carrara Permit, Findings and Conclusions, dated April 21, 1994.

application for amendment in the proceedings that are now subject to de novo review in this Court.

Since the 1994 Amended Permit was issued, the District Environmental Commission #1 (“District Commission”) issued the following amended permits that govern the Carrara Quarry:

On March 31, 1994, Amended Land Use Permit #1R0589-4 was issued (the “-4 Permit”). It extended certain deadlines to December 31, 1994, relating to the requirement that Carrara acquire certain deer mitigation lands. This amendment also set the permit expiration date at December 31, 1994.

On April 12, 1994, Amended Land Use Permit #1R0589-5 was issued (the “-5 Permit”). It established that Carrara has satisfied Conditions 11 and 17 of the 1994 Amended Permit that established a public information program and performance plan for blasting activities at the Carrara Quarry. The District Commission incorporated into this -5 Permit the blasting program and plan proposed by Carrara, pursuant to Conditions 11 and 17.

On March 27, 1996, Amended Land Use Permit #1R0589-6³ was issued (the “-6 Permit”). Carrara’s application in this proceeding sought and received several amendments to previous permit conditions, of which the following have some materiality to the pending appeal:

- Authorization to continue to extract dolomite from the quarry to a depth of 70 feet below the previously permitted ground level;
- Installation of a new stormwater discharge system;
- Installation of new interior haul roads to serve the quarry facility;
- Requirement that Carrara conduct a draw-down and three day pump test on the water supply well that serves homes in the Whispering Pines Mobile Home Park (“WPMHP”), as well as an additional requirement to monitor the WPMHP well for MTBE concentrations and whether increases in such concentrations were caused by the planned deepening of the quarry;
- Implementation of further Bureau of Mine Standards for Carrara’s blasting operations; and
- Renewed permit expiration date of June 1, 2016.

On July 28, 2005, Amended Land Use Permit #1R0589-8⁴ was issued (the “-8 Permit”). This is the permit from which Carrara and the Neighbors identified below appealed. The provisions of this Decision that the parties preserved for our review in this appeal are detailed below.

³ The District Commission subsequently received a request from Carrara for clarification of its -6 Permit. It treated Carrara’s request as a motion to alter and denied essentially all of Carrara’s requests by its Decision of April 16, 1996.

⁴ It appears that nearly all parties to the proceedings before the District Commission filed motions to alter the Commission’s July 28, 2005 Decision. The Commission granted some requests and denied others, as noted in its Memorandum of Decision on Motions to Alter dated September 20, 2005. To the extent that this latter Decision affected the issues preserved for appeal here, we note it below.

B. Parties who have status in this proceeding:

This appeal has generated a good number of pretrial motions, many of which have included challenges to party status and the issues upon which the parties had standing to participate in this appeal. The Court's Entry Orders and Decisions on such motions are noted in the record for this docket; the consequence of such Entry Orders and Decisions is reflected in the summary below of the parties who retained status to participate in this proceeding.

This proceeding affords another opportunity for this Court to mull over the interaction of its procedural rules, including the Vermont Rules of Environmental Court Proceedings (V.R.E.C.P.), the Vermont Rules of Civil Procedure (V.R.C.P.), the Vermont Rules of Evidence (V.R.E.) and the Vermont Rules of Appellate Procedure (V.R.A.P.), with the statutory provisions and rules that govern state land use proceedings before the various district environmental commissions. As previously noted in this Court's Interim Order of February 23, 2006, V.R.E.C.P. 5(d)(2) provides that an appealing party who participated in the proceedings below is "automatically accorded [party] status when the notice of appeal [or cross-appeal] is filed." Thus, an appealing party who has a "particularized interest . . . that may be affected by an act or decision of a district commission" (see 10 V.S.A. § 6085(c)(1)(E)) need not specifically request party status in appeals before this Court, even though such was the necessary practice in appeals governed by former Environmental Board Rule 14. Once a party who participated below files their notice of appeal or enters their timely appearance in a pending Environmental Court appeal, that party is entitled to present evidence on all issues preserved in the pending appeal, unless and until this Court specifically dismisses the party on the Court's own motion or that of another party. See V.R.E.C.P. 5(d)(2).

Carrara filed the initial appeal in this matter on October 3, 2005, and defined the issues it wished the Court to address by its Statement of Questions filed October 19, 2005. Carrara is represented in this proceeding by Attorneys James P.W. Goss and Alan Philip Biederman.

Joe and Sue Alexander, David and Penelope Bride,⁵ Nancy and Carroll Buffum, Sr., Carol Callahan, Sandra Shum and Judith Webster all own homes adjacent to or nearby the Carrara Quarry. The Whispering Pines Tenants' Association (WPTA) consists of some, but not

⁵ Mrs. Bride did not join her husband in requesting party status before the District Commission, but was listed as a cross-appellant in the Notice of Appeal filed on behalf of all Neighbors on November 1, 2005. We therefore list Mrs. Bride as a cross-appellant here, although we note that Mrs. Bride did not participate in the trial and is not listed as one of the cross-appellants in the pre- and post-trial filings made on behalf of the Neighbors.

all, of the nine tenants who rent lots in the mobile home park that adjoins the Carrara Quarry to the south, along Route 103. These individuals and the WPTA are collectively referred to in this Decision as the Neighbors.⁶ They are represented in this proceeding by Attorneys Phoebe Mills and Stanley Alpert.

The Neighbors filed their cross-appeal on November 1, 2005, and defined the issues they wished to preserve for review by filing their Statement of Questions on November 14, 2005. The issues collectively preserved for appeal in this docket are itemized below.

The Town of Clarendon entered its appearance both in the District Commission proceedings below and in this appeal through its attorney, William J. Bloomer.

The Land Use Panel of the Vermont Natural Resources Board (NRB) entered its appearance in these proceedings on November 14, 2005. The NRB is represented by Attorney Melanie Kehne. The NRB is authorized under 10 V.S.A. § 8504(n)(3) to intervene in appeals of district commission determinations. The State of Vermont Agency of Natural Resources (ANR) entered its appearance in this proceeding on November 30, 2005. ANR is represented by Attorney Catherine Gjessing. ANR's status in this proceeding is as an Interested Person that was granted party status in the proceeding before the District Commission below. See 10 V.S.A. § 8504(n)(1) and V.R.E.C.P. 5(c). No other parties appeared in this proceeding.

C. Criteria and issues preserved for review in this de novo appeal:

Appeals from district commission decisions are heard de novo by this Court. 10 V.S.A. § 8504(h). The Court is directed to “apply[] the substantive standards that were applicable before” the District Commission. Id. Thus, in the course of our analysis here, we refer to both the statutory provisions of Act 250 (10 V.S.A. Chapter 151) and the substantive provisions of the former Environmental Board Rules (EBR).⁷

While such appeals are de novo, the legal issues this Court is charged with adjudicating are limited to those that the parties have preserved for appellate review in their respective Statements of Questions. See V.R.E.C.P. 5(f) and In re Garen, 174 Vt. 151, 156 (2002) (citing

⁶ Carrara filed challenges to the party status of the individual Neighbors and WPTA, but those challenges were ultimately denied by the Court. See Entry Orders dated February 23, 2006, and March 17, 2006.

⁷ Pursuant to its rulemaking authority, the NRB adopted the “Act 250 Rules” that became effective May 1, 2006. The Act 250 Rules supersede the former Environmental Board Rules. While the two sets of Rules contain nearly identical provisions, we refer throughout this Decision to the Environmental Board Rules (EBR), since those Rules were in effect when Carrara's pending amendment application was deemed complete and considered by the District Commission.

Village of Woodstock v. Bahramian, 160 Vt. 417 (1993)). We must also bear in mind that concepts of the scope or limitations on our review of a project, as well as the burdens of proof that Act 250 imposes on each party, will determine what Act 250 criteria we are authorized to consider and how we view the evidence each party submitted in regards to each applicable criteria. We discuss these concepts below.

1. Scope of review.

When an Act 250 permit applicant requests an amendment, rather than authority to develop a new project, the scope of criteria is often narrowed. That is because the pre-existing permit must be recognized as a final determination “that is not subject to attack in a subsequent application proceeding.” In re Taft Corners Assoc., 160 Vt. 583, 593 (1993). A property owner who has received a land use permit authorizing development of their property is entitled to rely upon the vested rights that the unappealed permit secures, even when that property owner later submits a request to amend the permit. Walker Construction, Inc., Docket No. 5W0816-1-EB, Findings of Fact, Conclusions of Law and Order at 8 (Vt. Env'tl Bd., Jan. 14, 1987).⁸

When an amendment application is filed, the district commission in the first instance, and this Court on appeal, must limit its review to the issues raised by the amendment application; neither the district commission nor this Court has the jurisdictional authority to reopen the original permit application. Id. To reopen the original permit application or to address criteria upon which the amendment application has no substantial impact would “severely undermine the orderly governance of development and would upset reasonable reliance on the process.” Taft Corners at 593 (quoting Levy v. Town of St. Albans Zoning Bd. Of Adjustment, 152 Vt. 139, 143 (1989)). Thus, the parties in this proceeding may not request a new review of prior determinations, but only a review under the specific criteria upon which Carrara’s amendment application proposes a substantial impact. Taft Corners at 590–593.

Thus, in light of the issues raised by Carrara’s amendment application, we will limit our review to the criteria that apply to Carrara’s specific requests to (1) lower the Quarry floor by an additional 105 feet; (2) increase the maximum limits of allowed explosives; (3) increase the number of truck trips on the local road network to and from the Quarry; and (4) extend the life of the Quarry permit for 15 years.

⁸ In one narrow instance, permit terms may be reopened: that is, during permit revocation proceedings brought under 10 V.S.A. § 6090(c). Walker Construction at 8.

The Neighbors presented substantial evidence on several collateral issues to which Carrara objected in regards to the Neighbors' rights and Carrara's responsibilities under the mobile home park lease agreements, as well as allegations of Carrara's past violations, either of Act 250 permit conditions or its obligations as landlord of the Whispering Pines Mobile Home Park. We note that this Court does not have the jurisdictional authority to adjudicate landlord/tenant disputes. To assume such jurisdiction would both exceed this Court's authority and make the adjudication of the pending appeal unduly murky. We regret that the disputes between Carrara and its mobile home park tenants have become so substantial and lingered for so long that trust between the parties appears to have evaporated. But we have been unable to discern how the disputes grounded solely in the parties' landlord/tenant relationship have a nexus to the issues we must decide in this appeal. We will therefore not consider such disputes, or allegations that landlord/tenant rights or responsibilities have been violated. We leave the parties to attempt to resolve such disputes and violation allegations through discussion and compromise or, failing such efforts, to file such claims with a Court that has the jurisdiction to hear them.

The Neighbors' evidence also included allegations of violations of Carrara's Act 250 permit conditions. We note that while the former Environmental Board had authority to both hear appeals and prosecute permit violation proceedings, only the former responsibility, and not the latter, was transferred to this Court by the so-called Permit Reform Act of 2004. See In re Crushed Rock, Inc., 150 Vt. 613 (1988) (reviewing of the former Environmental Board's dual authority). We also note that there was no evidence presented of currently pending violations or past violations of Carrara's Act 250 permits which have not been rectified. There was also no evidence presented of a pending permit revocation proceeding, which is a proceeding initiated under 10 V.S.A. § 6090. If there were some allegation that Carrara is currently not in compliance with its current permit, the District Commission in the first instance, and this Court on appeal, "may stay the issuance of a permit or amendment" if the evidence supports certain findings. 10 V.S.A. § 6083(g)(1). No such claim is made here.

No evidence of a pending violation or allegation of noncompliance was presented at trial. We therefore do not see the legal foundation for denying the permit amendment Carrara requests, solely on the basis of allegations of past violations, even those that Carrara does not dispute. Rather, to the extent that such allegations are directed to individuals who offered testimony at the de novo hearings in this appeal, we have assessed the appropriate weight to afford such

violations in our determination of those witnesses' credibility. V.R.E. 607 and 608. See also Everett v. Town of Bristol, 164 Vt. 638, 639 (1996) (“[W]eaknesses in [an] expert’s opinion brought out on cross-examination properly go to the weight the [fact finder] may accord the testimony, not its admissibility.”).

2. Burden of proof.

As both Carrara and the Neighbors have suggested in their proposed Findings and Conclusions, Act 250 establishes a specific schedule of who carries the respective burdens of proof on each of the Act 250 criteria. 10 V.S.A. § 6088. A party’s burden of proof can include two subsets: the burden of production and the burden of persuasion. The burden of production requires the obligated party to produce sufficient evidence for a district commission, or this Court on appeal, to make a factual determination; the burden of persuasion refers to the obligation of persuading the fact finder that certain facts are true. See In re Denio, 158 Vt. 230, 239 (1992).

Previous decisions of the Environmental Board suggest that 10 V.S.A. § 6088 speaks solely to the burden of persuasion and that an applicant always carries the initial burden of producing some evidence that would allow for positive findings upon each of the applicable Act 250 criteria. See Re: John J. Flynn Estate and Keystone Development Corp., Docket No. 4C0790-2-EB, Findings of Fact, Conclusions of Law and Order at 17, n. 4 (Vt. Env’tl. Bd., May 4, 2004) (citing Barre Granite Quarries, LLC and William and Margaret Doyett, Docket No. 7C1079 (Revised)-EB, Findings of Fact, Conclusions of Law and Order at 68 (Vt. Env’tl. Bd., Dec. 8, 2000)); Re: Herbert and Patricia Clark, Docket No. IR0785-EB, Findings of Fact, Conclusions of Law and Order at 31 (Vt. Env’tl. Bd., April 3, 1997).⁹ We agree that an applicant always carries the initial burden of production. Our determinations below incorporate the statutory directive of 10 V.S.A. § 6088 as to who carries the burden of persuasion on the criteria that apply to this appeal.

⁹ Pursuant to 10 V.S.A. § 8504(m), decisions of the former Environmental Board are to be given the same precedential weight and consideration as those of the Environmental Court.

3. Criteria preserved for review.

A review of the Statements of Questions filed by Carrara and the Neighbors reveals that the issues that have been preserved for the Court's review in this appeal require determinations of whether the expansion of the Carrara Quarry outlined in the pending amendment application will:

- A. generate undue water pollution, as defined in Criterion 1(B).¹⁰
- B. violate the applicable rules adopted to protect significant wetlands (Criterion 1(G));
- C. have sufficient water supplies available for the proposed Quarry expansion (Criterion 2) or cause an unreasonable burden on existing water supplies, particularly those serving the neighboring homes and properties (Criterion 3);
- D. cause unreasonable congestion or unsafe conditions on area highways (Criterion 5) or unnecessarily or unreasonably endanger the public or quasi-public investment in area highways or other public investments (Criterion 9(K)); or
- E. have an unduly harmful impact upon the environment and surrounding land uses and development (Criterion 9(E)(i)). In regard to this last criterion, Carrara further requested that the Court vacate the following rulings of the District Commission related to Carrara's proposed deepening of the Quarry and increase in authorized explosives:¹¹
 1. a presumption of Carrara liability as to future property damage claims by Neighbors or other owners of property in the vicinity of the Quarry, as noted in the -8 Permit Conditions 3, 4, 5, 6, 7, and 20;¹²
 2. the requirement that Carrara complete wholesale upgrades of the Whispering Pines Mobile Home Park water and sewer systems and infrastructure; and
 3. the requirement that Carrara install additional monitoring or measuring devices at the residence closest to the Quarry.¹³

¹⁰ Each of the Act 250 criteria listed in this section derives its authority from 10 V.S.A. § 6086(a).

¹¹ In its Questions No. A-3 and B-2, Carrara infers that it wishes to "withdraw the modifications to its blasting regime" and questions "whether blasting at the previously permitted maximum pounds of explosive per delay" should be allowed without further condition. If it was Carrara's intention to "withdraw" its request for a change in its blasting regime, it did not clearly so state in its filings or during the trial. To the extent that Carrara is inferring it has a vested right to continue blasting under its 1994 Amended Permit, we note that that permit only authorized such blasting to a level of 70 feet below ground, which we understand the Carrara Quarry has already reached. Carrara has therefore exhausted its vested rights as to blasting. Any amount of blasting below the 70 foot level is not authorized by the previous permits at any blasting levels and will therefore be the subject of our discussion below.

¹² The -8 Permit contains no Condition 20. The separate "Findings of Fact and Conclusions of Law" in the -8 proceeding contains a Finding 20.

¹³ Carrara's Question B-6 does not reference a specific permit condition in the -8 Amended Permit that it seeks to overturn, but we presume that its reference is to Condition 4 of that Permit, which requires Carrara to install measuring devices in addition to the single device located near the Buffum residence.

II. Findings and Conclusions on Criteria Subject to Review.

General Findings:

1. As noted by the District Commission and suggested by the parties here by the evidence presented and their proposed Findings, the history of the Carrara Quarry and its operational characteristics have been recounted in exhaustive detail in the multiple prior proceedings before the District Commission and former Environmental Board. Carrara's current application seeks expansion and continuation of the Quarry operations to a total depth of 175 feet below ground and for a period of up to 15 more years, using an increased amount of explosives.
2. The Carrara Quarry operates like many quarries in Vermont. It is located at an established site for a particular type of rock. In the case of the Carrara Quarry, the rock is identified as Winooski Dolomite, which is a valued earth resource. The credible evidence presented at trial showed that the demand for Winooski Dolomite, such as that found at the Carrara site, is strong. The rock is used for a variety of purposes¹⁴ and is not otherwise readily available in the Clarendon/Rutland area.
3. Dolomite's uses generally call for it to be supplied in a crushed form. A dolomite quarry is therefore unlike a soapstone or marble quarry: the stone in dolomite quarries need not be harvested in large slabs. This characteristic impacts on how dolomite is blasted and taken from the earth.
4. Dolomite at the Carrara Quarry was first extracted from an above-ground outcropping. Once that supply was exhausted, Carrara sought and received authority via the -6 Permit to extract stone from below ground, to a maximum depth of 70 feet below the original ground surface. Once completed, the depth of the Quarry was estimated to be at 622 feet above sea level.
5. The quarry currently occupies about an eight-acre portion of Carrara's 59± acre site.¹⁵ The portion of the quarry from which stone is extracted below ground is shaped in an oblong or rectangular fashion, with the longer sides running parallel to Route 103 in a north/south

¹⁴ Crushed or broken up dolomite is used in road paving and cement projects.

¹⁵ This estimate of eight acres in size relates only to the Quarry itself. The Carrara Quarry operation also includes a haul road, security fence, monitoring wells, a settlement pond, a cleared area for overburden storage and a vegetative buffer, some of which Carrara planted at the direction of one of its previous permits. None of these additional Quarry components are included in the eight-acre estimate.

direction. A reduced copy of Carrara's site map, entitled "2006 Quarry Plan, Carrara Quarry" and admitted at trial as Exhibit P-28, is attached to this Decision for reference.

6. Explosives are needed to extract the dolomite from the Carrara Quarry. The explosive blasts are planned to use the least amount of explosives necessary to break up the needed rock. Holes are drilled into the rock in parallel rows, aligned in a wide "V" fashion.¹⁶ The holes are drilled to such depths as to cause a "bench" to result from the blast. The blasters move around the interior of the Quarry, causing a bench at a similar height to be cut around its circumference.

7. The amount of explosives used in each blast is determined by the amount of stone to be extracted, its location in the Quarry, and any cracks or "mud gaps" in its surface, up to the limit set for explosives by the 1994 Amended Permit. Some quarries, including marble quarries, may use multiple explosives discharged simultaneously to dislodge a slab of stone. Carrara and other operators of crushed rock quarries use a series of smaller explosions, timed to go off in delays measured in microseconds, to break up and dislodge the stone from the quarry walls.

8. The blast event ("blast") sounds like a single explosion, even though it is actually a series of explosions, referred to as "delays." When a series of delays are used for a single blasting event, the delays are timed so closely together that they are indistinguishable by the human ear. The 1994 Amended Permit set a maximum for explosives used of up to 250 pounds per delay, with an aggregate maximum of 2,500 pounds per blast. The -6 Permit authorized Carrara to continue its blasting until the Quarry reached the depth of 70 feet below ground.

9. Carrara was authorized to conduct up to two blasts per weekday, during the hours of 10:00 AM to Noon and 2:00 PM to 4:00 PM.¹⁷

10. The blasts cause rock to fall to the Quarry floor. Carrara then uses excavation equipment to load the rock onto trucks, which then transport the rock to another Carrara facility. The rock is sorted and sometimes crushed or broken up further at this other Carrara facility. Rock that is too large to safely load onto trucks at the Quarry is stockpiled on the Quarry floor and then broken up by an hydraulic hammer attached to the excavation equipment. This use of an

¹⁶ Viewed from above, the opening of the "V" faces the center of the quarry, so that rock is first blasted into the "V" and further broken up, and then falls to the floor of the quarry.

¹⁷ The 1994 Amended Permit offered an exception to this blasting schedule. Under Permit Condition 9, Carrara "may detonate blasts at times other than those [noted in Finding 9, above] if it becomes necessary for safety reasons or in the event of unavoidable logistical problems in the drilling or blasting operations." Condition 9 continues with further reporting and filing conditions in the event of such extra ordinary blasts.

hydraulic hammer to break up rock at the Carrara Quarry occurs for a short period of time (i.e.: no more than one day) at the beginning or end of the quarrying season.

11. The trucks hauling rock from the Carrara Quarry travel from the floor of the Quarry on a haul road built into the Quarry benches, then turn onto Route 103 from an internal access road. These trucks then travel northwest on Route 103 and Route 7 the approximate 2.7 miles to another Carrara facility. They do not pass the Neighbors' homes on Route 103, all of which are located to the south of the Quarry.¹⁸

12. The Quarry operates on a seasonal basis; as the weather turns colder, Carrara closes down the Quarry for the season. Traditionally, the Quarry operations end sometime in November and resume sometime in the following March.

13. Groundwater, rain and snow melt flows into the Quarry. This water is pumped out on a regular basis, both when the Quarry is operating and when it is not. Over the course of the winter months when the Quarry is not operating, it fills with groundwater, rain and snow melt to a depth of about 10 to 15 feet.¹⁹ As Carrara prepares to open the Quarry for a new season, it must go through an extended process of pumping out the groundwater, rain and snow melt that has accumulated in the Quarry. All water that is pumped out of the Quarry is delivered to a settlement pond adjacent to and just south of the Quarry, within Carrara's 59± acre tract.

14. The 59± acre Carrara parcel runs along Route 103, a predominant state highway that runs from Rutland to Rockingham. The Rutland State Airport is located to the west of the Quarry, across Route 103. The land that abuts the Quarry to the north is undeveloped and contains a wetland. Several small, unnamed, perennial streams flow from the Carrara property and other properties to the south and into the wetland that abuts Carrara's northerly boundary.

15. The Whispering Pines Mobile Home Park ("WPMHP") adjoins the Quarry to the south. WPMHP has been in operation since before the Quarry commenced its site clearing in 1986. Carrara purchased WPMHP in 1996. The exact age of WPMHP was not made clear by the evidence admitted at trial, although Mr. Carrara offered testimony that he understood that at least one of the mobile homes in the Park has been there since 1960.

16. Of the nine mobile homes currently located in WPMHP, owners of two of the homes are parties to this proceeding: Carol Callahan and Sandra Shum. Their homes are located about

¹⁸ Not all neighbors live in the Whispering Pines Trailer Park or on Route 103. See Findings 16–20.

¹⁹ Contrary to the assumption made by the Neighbors' expert and relied upon in rendering some of her conclusions, the Quarry does not fill up to its brim with water during the non-operational winter months.

1,800 feet from the Quarry.²⁰ Ms. Callahan moved into WPMHP in 1998 and purchased a new mobile home to reside in at WPMHP in 1999. Ms. Shum moved to WPMHP in 1995.

17. Judy Webster owns the Clarendon General Store; this commercial property is located on Route 103, just south of WPMHP. Ms. Webster resides in a separate property located about a quarter mile further south on Route 103. Ms. Webster moved to the area in 1989. Although she moved to the area after Carrara received its first permit, Ms. Webster testified that she was unaware of the blasting associated with the Quarry.

18. Joe and Sue Alexander have owned and occupied property across from the Clarendon General Store, just west of the western edge of Route 103, for the past 32 years. They first lived on the property in a mobile home, well before the commencement of the Carrara Quarry. The Alexanders subsequently constructed a new home on their property, about 11 years ago. Their property is about 1,900 feet from the Quarry.

19. Nancy & Carroll Buffum, Sr., own and occupy property to the east of the Quarry, along the East Road. Their property is about 1,200 feet from the Quarry. Since the Buffum residence is the closest to the Quarry, it has served as the site for the seismograph monitoring device that Carrara was required to install under the Conditions in the 1994 Amended Permit.

20. Like Judy Webster, David Bride moved to the area in 1989, after Carrara had obtained its first permit but before it had commenced blasting operations. Mr. Bride also owns and resides at property on the East Road, north of the Buffums and farther away from the Quarry than the Buffums.

21. The well that serves WPMHP (including the homes of Ms. Callahan and Ms. Shum) became contaminated more than 16 years ago. State officials determined that there were two sources of the contamination: underground gasoline storage tanks located at the Clarendon General Store and another nearby retail facility, formerly known as the “Jorgensen’s Honda Dealership.” Both are located about 2,000 feet south/southeast of the Quarry.

22. By order of the State officials, the offending underground gasoline storage tanks and related pipes were removed. From 1992 to 1997, two remediation systems were installed and operated by the State at the common WPMH well in an effort to clean up the well contamination. Those efforts have proved to be at least partially successful, as monitoring systems in place

²⁰ The admitted testimony and other evidence is unclear as to whether the measurements from nearby residences were taken from the edge of the Quarry or the nearest Carrara boundary line. For purposes of our analysis here, we assume it to be from the edge of the Quarry.

evidenced that the MTBE levels have continued to decrease. These monitoring systems will continue to remain in place.

23. The Neighbors have separate and collective concerns about the impact of the continued operation of the Quarry below its current depth, particularly if the increased level of explosives is allowed. Our Findings and Conclusions regarding such concerns are addressed in the discussion below about specific Act 250 Criteria.

A. Will the future Quarry operation generate undue water pollution?

Criterion 1(B), as codified in 10 V.S.A. § 6086(a)(1)(B), requires us to determine whether the continued operation of the Quarry, as currently proposed by Carrara, will meet “applicable health and environmental . . . regulations . . . and will not involve the injection of waste materials or any harmful or toxic substances into groundwater or wells.” In connection with this Criterion, we make the following additional findings:

24. The manner in which Carrara operated its Quarry in the past and proposes to operate it in the future does not involve the creation, discharge or storage of hazardous materials or significant quantities of chemicals (beyond the gasoline, oil and hydraulic fluid stored in and used by its trucks and excavation equipment). Carrara’s extraction of stone from its Quarry will not produce hazardous materials or chemicals that are discharged into the groundwater or nearby wells.

25. Because the Quarry is now below ground level and is proposed to go further below ground level, it has in the past drawn significant amounts of groundwater from the nearby aquifer. Water flows into the Quarry year round. During the spring dewatering process, Carrara pumps as much as 720,000 gallons of water per day from its Quarry and into the settlement pond on the Carrara property. Once the spring dewatering process is completed and if the requested permit amendment is granted, a monthly average of up to 150,000 gallons of water per day will be pumped from the Quarry floor and into the settlement pond.

26. ANR has issued the required Discharge Permit for the proposed future operation of the Carrara Quarry. This Permit authorizes two rates of discharge of storm water and groundwater from the Quarry and into the settlement pond and its outlet structure: first, the spring dewatering of the Quarry and second, the daily discharge while the Quarry is in operation during the warmer months.

27. ANR has also issued the required Underground Injection Control Permit for the future operation of the Carrara Quarry. This Permit authorizes the expected infiltration of water from the settlement pond into the ground below.

28. Both the Discharge Permit and Underground Injection Control Permit are currently in full force and effect; neither is the subject of pending enforcement or revocation proceedings. There was no evidence presented to suggest that further permits were needed relating to groundwater, stormwater or waste disposal. There was also no evidence presented at trial that rebutted the presumption created by these Permits.

29. Some of the Neighbors' nearby water wells that serve their residences have been contaminated by past leaks from nearby gasoline tanks, including a tank that was once located on property owned and operated by Judy Webster. None of the Neighbors suggest that Carrara caused the 1990 gasoline leaks. However, since the sources of the leaks are on the opposite side of WPMHP from the Carrara Quarry, some neighbors fear that a deepening of the Quarry will draw more surrounding groundwater into the Quarry, thereby possibly drawing more contaminants towards the WPMHP common well located between the point of origin for the contamination and the Quarry.

30. The WPMHP well pipes, pumps and other components have suffered from their age, corrosion and a lack of needed maintenance. The credible evidence did not show that the Carrara Quarry or its past blasting practices contributed in a measurable or significant manner to the present or foreseeable deficiencies in the WPMHP well or other neighboring wells.

31. Water supplied to some of the WPMHP homes, including the Callahan and Shum residences, still contains measurable levels of MTBE. At times, the water also contains silt, unknown particles and other contaminants.

32. The source of the MTBE is known; it is a derivative of the gasoline plume that leaked from the two nearby underground tanks noted in Finding 21, above. The cause for the silt, unknown particles and other contaminants sometimes appearing in the WPMHP well water was not clearly shown by the evidence presented at trial.

33. The Neighbors believe that the MTBE deposits in their drinking water are caused in part by the blasting levels at the Carrara Quarry. They fear that the further deepening of the Quarry and continued use of blasting will draw additional MTBE into their wells.

34. While the neighbors' concern regarding further MTBE contamination is understandable, and the existence of the well contamination is very regrettable for all area residents, at trial there were only speculative suggestions and no direct evidence presented that the Quarry is contributing in a material way to the continued MTBE contamination of area wells. In fact, the uncontroverted evidence admitted at trial was that the MTBE levels in the WPMHP well have continued to decline in a significant manner.

35. None of the credible evidence supports the concerns about MTBE migration being increased by the continued operation, deepening of and blasting at the Carrara Quarry. In fact, routine past monitoring of the WPMHP well shows that concentrations of MTBE have decreased significantly since Carrara first began deepening the Quarry in 1996. Specifically, results from samples collected from the WPMHP well in the 12 months prior to 1996 when increased Quarry dewatering began, show that MTBE concentrations averaged approximately 257 parts per billion (ppb), which is over 6 times the Department of Health (DOH) health standard. However, samples collected during the most recent twelve month period (January 2005 to January 2006) show an average MTBE concentration of 39 ppb, just below the 40 ppb DOH health standard. Intervening samples show this decrease in MTBE concentrations to be a continuing trend. This leads us to conclude that to date, the Quarry deepening and dewatering have not increased the concentration of contaminants in this well. MTBE concentrations in this well had already been declining prior to the onset of increased dewatering in 1996. The rate of MTBE concentration decline after 1996 was consistent with the rate of decline prior to 1996. This indicates that deepening and dewatering activities did not affect the rate of decline in MTBE concentrations in the past, and will be unlikely to negatively affect MTBE levels in neighboring wells in the future.

36. Even with the decline of MTBE in the WPMHP well, ANR requested (and Carrara consented) that Carrara continue to be required to monitor the MTBE concentrations in the WPMHP well, as was established in Condition 4 of the -6 permit.

37. The Neighbors also believe that the silt and other contaminants appeared in their well water because of blasting at the Carrara Quarry. But the evidence they presented at trial on this point can only be classified as circumstantial, at best. There was general, but not specific evidence presented that the silt and other contaminants appeared around the time that blasting occurred. It is clear that the silt and other contaminants, when they appeared, made the WPMHP well water unduly offensive, from an appearance, smell and perhaps health perspective. But we

were not persuaded and therefore do not conclude that the blasting at the Carrara Quarry has been shown to be contributing to this well water contamination.

Conclusions as to Criterion 1(B).

The legal determinations to be made under Criterion 1(B) are of a threshold variety: does the proposed project “meet [all] applicable health and environmental . . . regulations . . . and will not involve the injection of waste materials or any harmful or toxic substances into groundwater or wells.” 10 V.S.A. § 6086(a)(1)(B). We conclude that the proposed deepening and continuation of the Carrara Quarry conforms with Criterion 1(B).

There has been no showing that Carrara has failed to obtain any health or environmental approval or conformance certifications in regards to wetlands. There was also no suggestion that Carrara has been or is now in material non-compliance with any applicable health and environmental regulation. In the absence of contravening evidence, we conclude that Carrara has satisfied the first requirement of § 6086(a)(1)(B).

There is also no suggestion that past or future Quarry operations have or will be the source of waste materials or harmful or toxic substances that could then make their way into groundwater or area wells. While this case presents the somewhat unique issue of whether a project will increase the flow of contaminants from a separate source, not associated with the project, we have found that the evidence presented was not sufficiently persuasive. Further, Carrara and ANR have proposed to continue the MTBE concentration monitoring of the WPMHP well, so that an unanticipated change in the MTBE levels can readily be identified. Thus, particularly with the precautions that will be afforded by the continuation of the MTBE monitoring program, we conclude that there has been a sufficient showing for this Court to render positive findings under Criterion 1(B).

B. Are applicable wetlands rules violated?

Criterion 1(G) requires us to determine whether Carrara has shown that its expanded Quarry operation will not violate applicable rules promulgated to protect “significant wetlands.” 10 V.S.A. § 6086(a)(1)(G). We make the following additional findings in regard to this Criterion:

38. Significant wetlands, consisting of about 75 acres, some of which includes forested swamp dominated by northern white cedar and eastern white pine, lies just north of the Carrara property. The nearest wetland is classified as a Class 2 wetland on the Vermont Significant

Wetlands Inventory Map; its 50-foot buffer extends to within 25 feet of Carrara's internal access road.

39. Carrara obtained a Wetlands Conditional Use Determination in 1995 from ANR which contemplated a lowering of the Quarry floor to a depth well in excess of the presently requested depth of 517 feet above sea level.

40. This Wetlands CUD is in full force and effect. Carrara's hydrogeologists determined that no amendment to the CUD is required for this Act 250 Permit Amendment. ANR officials testified that they concurred with this assessment.

41. As part of the Wetlands CUD, Carrara must continue to monitor the hydrology of the general area and must also monitor vegetation in the wetlands neighboring the Quarry. The Permittee submitted the most recent wetlands monitoring report for the period ending in 2004 and vegetation survey for the subject wetland for the period ending in 2005. Both of those reports indicate that the Quarry is having no adverse impact on the wetlands or any protected wetland functions.

42. ANR officials testified that the Agency concurs with Carrara's hydrogeologist that the Quarry has not had an adverse impact on the wetlands and is not likely to have an adverse impact in the future as the Quarry floor is lowered.

43. Both the Wetlands Monitoring Program and Vegetation Monitoring Program for the wetland complex will continue remain in place for the proposed 15 year period of extended quarrying activities. As a consequence, any future potential adverse impacts would be detected and reported to ANR so that remedial action could be taken.

Conclusions as to Criterion 1(G).

The evidence offered by Carrara and ANR as to compliance with the applicable ANR rules is undisputed. Where an applicant has presented evidence of compliance with applicable regulations and receipt of the necessary agency determinations or approvals, the applicant has met its threshold burden of production on the applicable land use criteria. 10 V.S.A. § 6086(d) and 10 V.S.A. § 8504(i). This evidentiary presumption does not end our analysis, but rather then transfers the evidentiary obligation to the party opposing the project to present some credible evidence that "fairly and reasonably indicat[es] that the real fact is not as presumed" by the agency determination and evidence of compliance with applicable regulations. In re Hawk Mountain Corporation, 149 Vt. 179, 186 (1988). In this regard, the Neighbors have failed to

present convincing evidence. We therefore conclude that Carrara's proposed expansion and deepening of its Quarry is in conformance with Criterion 1(G).

C. Is there sufficient water supply to serve the future Quarry operation and will the future Quarry operation cause a burden on existing water supplies?

Criterion 2, as codified in 10 V.S.A. § 6086(a)(2), requires us to determine whether there will be "sufficient water available for the reasonably foreseeable needs" of the Carrara Quarry. The evidence admitted at trial did not contradict Carrara's presentation that its Quarry requires little to no water for its future operation and that its foreseeable needs will be more than adequately met by the available water at the Quarry site. We thus conclude that Carrara's application for a permit amendment conforms with Criterion 2.

Criterion 2 is a companion to Criterion 3. The latter requires this Court to determine whether the Carrara Quarry will "cause an unreasonable burden on an existing water supply." In connection with Criterion 3, we make the following additional factual determinations:

44. The homes in the WPMHP are served by a common well. It was once regulated as a public water supply, but is no longer, since the number of homes served by the well has dropped below 10, which is the jurisdictional limit for wells governed by the public water supply regulations administered by ANR's Water Supply Division.

45. During the past operation of the Carrara Quarry in 1994, two wells that served David Bride's residence lost their ability to yield water for several weeks. Further, during a pumping test in 1994 that Carrara commissioned in preparation for further permit amendment applications, the WPMHP well, which was then 335 feet deep, went dry. Carrara eventually paid for replacement wells to be drilled for Mr. Bride and the WPMHP. No other wells have experienced material changes in their yield during the past operation of the Carrara Quarry. The opinion testimony offered by Carrara's hydrogeological expert as to the expected impact of future Quarry operations was not directly contradicted. While we took into consideration the Neighbor's evidence as to this expert's veracity, we did not find this evidence sufficient enough to materially discredit Carrara's expert.

46. The most credible evidence offered at trial showed that the proposed continuation and deepening of the Quarry will have a minor and not significant impact upon neighboring wells. That evidence showed that while some impact will occur to neighboring wells, in the form of a

slight decrease in the measured head of the water in such wells, that impact will be minimal and will not be sufficient to cause local water supplies to fail to meet current demands.

47. When a significant amount of ground water is drawn into a well or a large excavated area, like a quarry, the water level in the underground aquifer does not lower over a large underground area. While the level of water in a container or in an above-ground lake or pond will decrease uniformly, the nature of how underground water flows through sand, gravel and rock causes the effect on underground water to be restricted to a more immediate area surrounding the well or quarry.

48. Carrara's experts testified to a "cone of depression" being created in the vicinity of the well or quarry, such that the groundwater level immediate adjacent to the Carrara Quarry will lower towards the bottom of the Quarry, but will then rise as one measures away from the quarry. Carrara's expert estimated that the cone of depression surrounding the Carrara Quarry would be quite narrow and steep. Beyond the cone of depression area, the level of the underground aquifer would not be materially decreased by the operation of the Quarry. We find these expert estimates to provide the most reliable prediction of the impact the proposed continued operation of the Carrara Quarry will have on the underground aquifer that serves area wells.

49. Carrara has also agreed to continue its monitoring of the WPMHP well and the local bedrock aquifer, as proposed by its expert. We find that such continued monitoring will assure that unanticipated burdens on area water supplies will be brought to the parties' attention and that of the District Commission, which shall retain jurisdiction to address any future unanticipated, unnecessary burdens on area water supplies that are brought to its attention.

Conclusions as to Criteria 2 and 3.

While both Carrara and the neighbors preserved the issue of conformance with Criterion 2 in this appeal, there has been no suggestion that the Quarry's future water needs, minimal as they are, cannot be met by available water sources. While the Neighbors' remain concerned that the expansion and continuation of Quarry operations will jeopardize their water supply, the credible evidence presented showed the best estimate to be that the continued deepening of the quarry and proposed blasting will have minimal future impact on neighboring wells.

The adequate supply of usable drinking water is an essential resource to any residence. We therefore conclude that while Carrara has met its burden to receive a positive finding on

these two Criteria, we do so only with the following added protection: that the District Commission shall retain jurisdiction on Criterion 3 and shall have the continued authority to reopen its consideration of the impact of the Quarry's future operation upon neighboring wells. This continued monitoring will allow for a change in the permit conditions to occur, if the continued monitoring of the WPMHP well provides substantial evidence that the Quarry operations have contributed to an increase in MTBE concentrations, so as to cause an unreasonable burden on that existing water supply.

D. Will the future Quarry operation endanger area highways?

Determinations of a proposed project's impact upon area highways and the traffic and traffic safety upon them are governed by Criteria 5 and 9(K). The applicable statutory provisions require us to assess whether the proposed continuation, deepening and blasting at the Carrara Quarry will "cause unreasonable congestion or unsafe conditions" on area highways — 10 V.S.A. § 6086(a)(5) — or "will . . . unnecessarily or unreasonably endanger the public or quasi-public investment in [such highways or any other] public 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." 10 V.S.A. § 6086(a)(9)(K).

We make the following additional findings directed to these two specific Criteria:

50. The public roads and highways impacted by the Quarry operations or used by Carrara agents, employees or subcontractors are limited to Vermont Routes 103 and 7. No party has suggested that there is another "public facility, service, or lands" that will be impacted by the proposed future operation of the Carrara Quarry.

51. Routes 103 and 7 are two of the principal commercial highways in central Vermont. As noted above at Finding 11, trucks traveling to and from the Carrara Quarry travel a combined distance of 2.7 miles each way on these state highways.

52. The Carrara Quarry access road is on the northeastern edge of Route 103, across from the Rutland State Airport. Route 103 is posted for a maximum speed limit of 50 miles per hour in this area. Sight distances at the Carrara Quarry access intersection with Route 103 are extensive (over 1,800 feet when looking southeast and over 750 feet when looking northwest) and exceed the acceptable sight distance standard (i.e.: 550 feet) established by the Vermont Agency of Transportation ("V-Trans").

53. While the Carrara trucks are not proposed to travel in front of any of the Neighbors' homes or properties, most and perhaps all area residents will observe or interact with these trucks, as area residents pass by the Carrara Quarry on their way to work, schools and stores along the busy commercial sections of Route 7 and the surrounding towns and city.

54. The Carrara Quarry is currently authorized to generate up to 70 round truck trips per day on a weekly average, with a maximum of no more than 120 round trips on any given day. Carrara requests that it be permitted to increase its truck traffic to up to 120 round trips per day on a weekly average, with no more than 140 round trips on any given day.

55. Other traffic generated by the Carrara Quarry (i.e.: employees' personal vehicles, vehicles of contractors and vendors, and Carrara vehicles not involved in the transport of stone) was not discussed at trial. We therefore conclude that no party considered such additional traffic to be of enough consequence to consider under these Criteria.

56. The Court found the testimony of Carrara's traffic expert credible and not contradicted by specific evidence offered by other parties. While Routes 103 and 7 are busy highways, including along the 2.7 mile route to be traveled by Carrara's trucks, we are not persuaded that the additional 50 daily truck trips will materially endanger these public highways or the people who use them.

Conclusions as to Criteria 5 and 9(K).

Once an applicant has met its initial burden of production under Criterion 5, an opponent must meet the fairly high burden of persuasion that the proposed development will "cause unreasonable congestion or unsafe conditions" on area highways. 10 V.S.A. § 6086(a)(5). The Neighbors here have not met that very high burden on this Criterion. While Carrara's application, if approved, will authorize up to an additional 50 round truck trip per day over the current permitted daily average, there are not sufficient facts to conclude that such an increase will "cause unreasonable congestion or unsafe conditions." Carrara's expert offered historical evidence and opinion testimony about the lines of unobstructed sight at the access point to the Quarry, accident histories along the truck route, and estimated "level of service" changes that could be caused by the traffic increases Carrara proposes.²¹ While the Neighbors testified to the annoyance of coming upon a Carrara truck, particularly one laden with stone, their evidence did

²¹ We also noted and placed some weight upon the basis of the expert's calculations, particularly ones that assumed that all future traffic would be new traffic and did not take into consideration that some of the existing traffic upon which his calculations were based were Carrara trucks traveling from the past operations of its Quarry.

not rise to the high level of persuading the Court that unreasonable congestion or unsafe conditions would be caused by the increased truck traffic from the Carrara Quarry.

While the burden of persuasion under Criterion 9(K) shifts to Carrara, our analysis and conclusion is much the same. The burden is somewhat low under this Criterion: § 6086(a)(9)(K) directs that conformance with Criterion 9(K) should be rendered, unless the evidence shows that the proposed development will “unnecessarily or unreasonably endanger the public or quasi-public investment” or the public’s use and enjoyment of the same. This language sometimes forces the use of a double negative, but it implies a clear directive: a proposed development may only impact upon public investments and the public’s use and enjoyment of them, if such impact is not unreasonable or unnecessary and does not cause material jeopardy or interference. *Id.* We conclude that Carrara has proved the double negative. Better stated, we conclude from the evidence presented that it unlikely that traffic generated by the Carrara Quarry will cause an unreasonable or unnecessary burden, or materially jeopardize or interfere with the public’s use and enjoyment of these public investments.

For the reasons stated above, we conclude that Carrara’s proposed continuation and deepening of, and continued use of explosive blasts in its Quarry are in conformance with Criteria 5 and 9(K).

E. Will the future Quarry operation unduly impact the surrounding area?

When a proposed development that is subject to Act 250 jurisdiction involves the extraction of some mineral or earth resource, the issuance of a permit is contingent upon a determination that “the proposed extraction or processing operation and disposal of waste [generated thereby] will not have an unduly harmful impact upon the environment or surrounding land uses and development” 10 V.S.A. § 6086(a)(9)(E)(i).²² When a proposed mineral extraction operation contemplates the use of explosives, our attention to the potential harmful impact on neighboring properties is additionally focused.

We make the following additional findings upon this specific Criterion:

57. The 1994 Amended Permit authorized Carrara to use up to 250 pounds of explosives in each delay, provided that the total explosives used in a blast did not exceed 2,500 pounds.

²² Section 6068(a)(9)(E) has a second subsection that relates to the rehabilitation of a site once the extraction and processing operation is completed or the permit expires. However, since no parties’ appeal challenged Carrara’s proposed rehabilitation plan, we do not address § 6086(a)(9)(E)(ii).

58. The blast records admitted at trial show that in no previous blast did Carrara employ more than 126 lbs. of explosives per delay.²³

59. The number of delays in each blast is determined by the blaster, taking into consideration the total amount of explosives per blast that a permit allows. As noted in Finding 6, above, holes are drilled down into the rock in parallel vertical rows, aligned in a wide “V” fashion, with the “V” facing into the Quarry so that the explosions cause the rock to fall onto the Quarry floor.

60. The Quarry blasts create air concussions and ground vibrations. Air concussions refer to the sound and pressure waves that the blast causes to travel through the air above the Quarry; ground vibrations represent the shock wave that crushes the rock material around the drilled holes and travels through rock underneath and beyond the Quarry. The air concussions and ground vibrations dissipate as one travels farther away from the blast area.

61. The blast concussions and vibrations can be disturbing to anyone who experiences them, particularly someone who is not expecting the explosion. Thus, since the 1994 Amended Permit, Carrara has been required to notify all requesting neighbors of when blasts are scheduled to go off, so as to lessen the surprise and disturbance a blast can cause someone. Carrara proposes to continue its current notification program.

62. How disturbing a blast can be may also depend on several subjective standards, such as someone’s health, age and activity at the time of the blast.

63. Quarry blasts can also produce a third, unintended effect: fly rock. This is crushed rock particles that the blast sends up into the air as projectiles. While prior permits speak to some concern about fly rock, there was no evidence presented here that the future Quarry operation, even at the increased blast levels, would likely produce fly rock that could traverse the distances between the Quarry and the nearest adjoining property. We therefore conclude that the proposed continuation of the Quarry is unlikely to produce fly rock that will reach or be harmful to neighboring properties.

64. Ground vibrations and air concussions caused by explosive blasts can be measured by modern seismographs in a fashion that tracks their intensity and frequency at the spot where the seismograph is situated.

²³ See Exhibit N-40. The Carrara blast reports reveal that on September 30, 2004, the Carrara blasters used 125.8 lbs. of explosives per delay. This and all other reports admitted at trial show an identical amount as the “average” amount and “max.” amount of explosives used in each delay. The next highest amount of explosives used per delay, as noted on the blast reports included in Exhibit N-40, was 124 lbs. (both maximum and average), used on both June 4, 2004, and September 24, 2004.

65. Some 30 years ago, the U.S. Bureau of Mines established standards (“USBM Standards”) for ground vibrations and air concussions that were expected to eliminate the potential harm to nearby persons and property. The USBM Standards were based upon intensive studies regarding the effect of explosive blasts on a variety of above-ground and below-ground structures, including houses, septic systems and wells with varying types of structural integrity, and area geological features, such as above-ground and below-ground rock formations and underground aquifers. The Standards were set at a maximum level of ground vibration and air concussion that essentially doubled the lowest readings at which harm was experienced for structures of the least integrity in all manner of underground formations. The theory behind this setting of the Standards was to establish a reasonable degree of certainty that ground vibrations and air concussions that were below the Standards would be unlikely to cause harm to nearby people or properties. A reproduction of the USBM Standards, culled from Carrara’s blasting expert’s report,²⁴ is attached to this Decision.

66. Ever since it was required to do so by Conditions within the 1994 Amended Permit, Carrara has ensured that all blasts occurring at its Quarry do not exceed the USBM Standards as to frequency or velocity for ground vibrations and air concussions, as measured at the residence closest to the Quarry. In fact, the records of seismograph readings admitted at trial showed frequency and velocity readings well below the USBM Standards.

67. Despite Carrara’s performance well within the USBM Standards, several of the Neighbors continued to feel and hear the explosive blasts at the Quarry. Several Neighbors were startled by the blasts, even when inside their homes, at least one while in the shower in her home. Items have fallen from shelves in homes. Some Neighbors report cracks in the plaster or sheetrock walls or basement foundations that they believe were caused by explosives set off at the Carrara Quarry.

68. The WPMHP homes are particularly susceptible to wall cracks and “racking.” The latter occurs when a mobile home twists or goes out of level, thereby no longer maintaining a true rectangular shape.

69. The WPMHP was originally constructed on unstable land made up of a wetland or other area that was filled in with material that is still settling, some thirty years later. The continued less-than-stable nature of the Park soils has caused the mobile homes to sink and shift over time.

²⁴ The attached reproduction was copied from the Fowler Report, admitted as Exhibit 21, at 5.

70. Homes in the Park are made of less durable materials than conventional stick-built homes. The use of less expensive materials used to manufacture mobile homes makes them more affordable for low-income individuals and families, but also makes them more susceptible to damage. Adding to the potential for damage to the WPMHP homes in particular is that they are not sited on foundations or even concrete slabs, as are often used in other mobile home parks. The WPMHP homes are on as few as four pillars, some made simply of stacked concrete blocks, sitting on unprepared ground. Such conditions make the WPMHP homes more likely to experience cracks, separations, racking and more extensive damage as the pillars move.

71. The past operation of the Carrara Quarry or proposed operation in the future is not a major contributing factor to the damages suffered by the WPMHP homes. Other factors, some stated above, are the major contributing factors to the damages suffered by both old and new WPMHP homes.

72. Carrara has offered to continue to abide by blasting and monitoring recommendations, notification procedures and performance standards established in the 1994 Amended Permit (specifically Conditions 3, 4, 7, 8, 10, 13, 14 and 17) and as recommended by its blasting expert. Such Conditions will assure that, at least at the level of explosives historically used at the Carrara Quarry, it is unlikely that the Quarry will be the primary or contributing cause of harm experienced by Neighbors.

73. Carrara's expert acknowledged that the blast report forms and weather tracking records must be completed accurately and completely to assure that the effect of blasts and conditions surrounding them may be tracked, as well as to educate blasters and Carrara employees when conditions are not ideal to conduct blasts. In the past, Carrara has not caused the blast or weather condition reports to be completed in an exact manner.

74. Carrara last conducted a structural survey of area homes in 1992. Such surveys are generally conducted on properties adjacent to quarries that use explosives to document the then current condition of nearby homes and structures, so that a record may be referenced if and when those properties or their owners experience damage or harm.

Conclusions as to Criterion 9(E).

The amount of explosives Carrara historically used²⁵ in blasts conducted at its Quarry was apparently not expressly highlighted²⁶ to the Neighbors or the District Commission until after Carrara conducted a test blast for the District Commission.²⁷ While the Court understands and views as reasonable the Neighbors' additional anguish upon learning that the explosives Carrara planned to use in its future operations may be many times more than any previously used, we must first make clear that nothing in this fact gave rise to an allegation of a permit violation. While its permits authorized Carrara to use up to 250 lbs. of explosive per delay, 2,500 lbs. total per blast, no term of its prior permits required Carrara to use exactly that much explosive.

The uncontroverted evidence led this Court to conclude that conducting the necessary blasts at the Carrara Quarry, as with any other quarry, should be regarded as both an art and an exact science. The blaster must first take into consideration the blasting limitations of all applicable permits and the potential impact on quarry neighbors. But within such initial confines, a blaster must also take into consideration the type of rock product needed, the geological make up of the area to be blasted, and how best to conduct the blast in an economical manner for their employer. The latter limitations have historically caused the blasters employed by Carrara to use an amount of explosives that is far less than the maximum allowed by its permits. In short, the applicable permit condition sets a maximum cap on the amount of explosives that can be used, but does not require Carrara or its blaster to use that maximum amount of explosives, per delay or per blast, at any specific time.

²⁵ We note that at some point on or after receiving its 1994 Amended Permit, Carrara began employing a subcontractor to set up and conduct explosive blasts at its Quarry. The Neighbors challenged the adequacy of this contractor's blast records and procedures, and some of these challenges have led the Court to its factual and legal conclusions in this section. However, for purposes of permit obligations and liabilities, we do not find it material that Carrara plans to continue to use such a contractor to conduct future blasts and assist in preparing and maintaining its blast records. Carrara is the party primarily bound to adhere to the terms of this Decision and the Permit that accompanies it; Carrara is also the primary obligor in assuring that no third party conducts activity on its property in violation of this Decision, the Permit that accompanies it, or any prior permits which have not been superseded.

²⁶ We use this verbiage because blast records, stating the specific amount of explosives used, were filed with the District Commission, pursuant to the 1994 Amended Permit.

²⁷ Carrara declined to conduct a test blast in connection with the evidentiary proceedings before this Court. We reference the test blast Carrara conducted for the District Commission, only as a time reference for when it became apparent to the Neighbors that Carrara had apparently not previously conducted a blast using the maximum allowed explosives.

As this Court previously ruled in its Interim Order of February 23, 2006, no applicable statutory provision or procedural rule required Carrara to conduct a test blast as part of its presentation to this Court. The Court cannot fathom circumstances under which a quarry applicant could be compelled to conduct a test blast at maximum requested levels, particularly if the application concerned a new quarry. Rather, we left the wisdom of conducting a test blast to Carrara. In that regard, we are left to wonder whether a test blast at the time of trial, in the Quarry as it then existed, at the maximum levels of explosives requested, would have been wise, economical or safe, given all the other factors that a blaster must take into consideration when conducting a blast.

We are also left to weigh the evidence that was presented at trial. In weighing that evidence, we remain aware that an applicant carries both burdens of proof under Criterion 9. The detailed analysis presented by Carrara's explosives expert, particularly in relation to the USBM Standards and Carrara's past conformance with those Standards, was credible and compelling. But the dire examples offered by Neighbors of the disturbances and property damage caused at some point at or after Carrara's use of explosives raise an initial uncertainty as to whether Carrara's past or proposed use of explosives is causing or contributing to the harm the Neighbors' experience. We are left to wonder how the past blasts could have caused such intrusions for the Neighbors, when all evidence offered by Carrara showed that these past blasts were well within the USBM Standards. We therefore conclude that only if we put further limitations on Carrara's future blasting practices can we reach the conclusion that the proposed future operation of the Carrara Quarry will not likely cause undue harmful impacts upon the environment or any neighbors' surrounding land uses and development.

Before we address the specific limitations upon Carrara's future blasting, we first wish to address the additional conditions the District Commission placed upon Carrara that Carrara challenges in its appeal. We note that the District Commission witnessed two test blasts at the Carrara Quarry. In both test blasts, the amount of explosives used for each delay did not exceed 117 lbs., far less than the maximum per delay allowed in the 1994 Amended permit. In the first test blast, Carrara reported that the total explosives used for the blast was about 2,600 lbs; in the second test blast, Carrara reported that the total explosives used for the blast was about 6,400 lbs. The District Commission noted some of its members' observations during the test blast; some of

the Commission members expressed dismay upon learning that the amount of explosives used per delay was less than half of the then permitted maximum of 250 lbs. per delay.

Two of the Neighbors who witnessed the two test blasts testified to their observations at trial. The Commissioners' observations of the test blast were not admitted into evidence at our trial, appropriately so. But we reference the Commissioners' observations only to note some understanding of why they may have included Conditions 3, 4, 5, 6, and 7 in the District Commission -8 Permit. These Conditions impose a presumption that future blasts conducted at the Carrara Quarry are the cause of any future damage that Quarry neighbors, their property or wells may suffer.

While understandable, it is improper for the District Commission in the first instance, or this Court on appeal, to place such conditions on a permittee. Such a condition removes a permittee's rights to due process, to participate in the adjudicative process before a legal conclusion is reached that its actions caused a third party's loss. The fact that some of the Conditions imposed by the District Commission allowed for the permittee to rebut the stated presumption does not cure the impropriety of such conditions. Carrara is left to prove a negative: that its future quarry operations didn't cause the damage that a neighbor may experience in the future.

We recognize the tremendous strains Quarry neighbors have experienced, particularly those living in the nearby mobile home park, many of which have been caused by factors other than those associated with the Carrara Quarry. While the strains caused to these neighbors, through little fault of their own, are tremendous, they do not justify the imposition of the presumption of liability Conditions placed upon Carrara by the District Commission. Such legal conclusions regarding presumptions of legal burdens are inappropriate for either the Commission or this Court to impose. We therefore **VACATE** Conditions 3, 4, 5, 6 and 7 from the -8 Permit and decline to adopt such conditions in this proceeding.

In order to render a positive finding under criterion 9(E), we must conclude that the proposed future operation of the Carrara Quarry "will not have an unduly harmful impact upon" the nearby areas and neighbors, including those not a party to this appeal. 10 V.S.A. § 6086(a)(9)(E)(i). To make such a finding with the necessary certainty, we must impose conditions in addition to those offered by Carrara and suggested by its expert. In crafting these

additional conditions, we are guided by the past blasting practices at the Carrara Quarry and the effects felt by its neighbors. Those additional conditions are as follows:

1. Prior to conducting any future explosive blasts, Carrara shall conduct structural surveys, including video documentation, of all properties adjacent to the Carrara property or owned by parties to this proceeding for which the property owners allow Carrara and its agents access. Carrara shall make written request for permission to access such properties from all applicable property owners and shall document which owners grant or decline the requested access. Carrara shall maintain complete records relating to their requests, neighbors' responses and the structural surveys and shall file full copies of the same with the District Commission.
2. Reports for all Carrara blasts shall include complete information, including the actual average and maximum amount of explosives used for each delay and each blast, as well as the specific weather conditions for the area (i.e.: wind speed, temperature, precipitation and cloud cover) at or outside of the Quarry walls and not at the bottom of the Quarry.
3. Complete records of all blasts shall be kept by Carrara for at least one year following the termination of its Permit and any future amendments. Blast report records shall be filed with the District Commission within 60 days of each blast.
4. Carrara shall provide pre-blast notification to all owners of property in the vicinity of the Quarry who request it, as well as all parties to this proceeding. Such notification shall be in the form suggested by Carrara's expert at trial.
5. Carrara shall be entitled to employ blasting scenarios that use up to 250 lbs of explosives per delay and 6,500 lbs of explosives per blast, **PROVIDED HOWEVER** that it may only employ blasting scenarios in excess of 126 lbs of explosives per delay and 2,500 lbs of explosives per blast after it has first provided prior notice of at least two full business days to the District Commission, the eight individual Neighbors who are parties to this appeal and any abutting property owners who request such notification in the future. The Court intends for such notice to provide sufficient preparation time for the noticed parties to observe the planned blast and its effects from outside of the Carrara property. The parties may employ audio, video or seismographic means to record such blasts for presentation to either the District Commission or this Court in future proceedings, subject to the applicable admissibility rules.

III. Order

For all the reasons stated above, we conclude that Carrara's proposed continuation, deepening and continued use of explosives in its Quarry will not cause or result in a detriment to the public health, safety or general welfare under the applicable Criteria preserved in this appeal,

provided its operation conforms with Carrara's application and all exhibits submitted, and provided its operation conforms to the terms and conditions referenced in the Permit that accompanies this Decision.

All exhibits are on file with the Environmental Court and will be transferred to the District Commission upon the expiration of all applicable appeal periods. Carrara, its successors and assigns are directed to maintain a complete copy of its application and all admitted exhibits for so long as its Quarry is in operation, unless and until otherwise directed by this Court or the District Commission.

A V.R.C.P. 58 Judgment Order also accompanies this Decision.

Lastly, we note that a motion remains pending which was filed on Carrara's behalf to exclude testimony of an expert offered by the neighbors, Ellen Moyer. The Neighbors objected to Carrara's motion. While Dr. Moyer's own testimony tended to show her limited or complete absence of experience in some of the areas upon which she offered opinion evidence, we **DECLINE** to grant Carrara's motion to exclude all her testimony. We conclude that the concerns expressed about Dr. Moyer's testimony go the weight and credibility we afforded her testimony, rather than the exclusion of her testimony. See Everett v. Town of Bristol, 164 Vt. 638, 639 (1996).

Done at Berlin, Vermont, this 22nd day of November, 2006.

Thomas S. Durkin, Environmental Judge