

Omya Community Issue Team – Quarry Issues

October 14, 2008 Meeting Summary

Location: Pittsford Town Offices, Pittsford, VT

Date: October 14, 2008

Time: 6:00 p.m. – 7:30 p.m.

Meeting Attendees (in alphabetical order):

John Haverstock – Pittsford Town Manager
John Lapre – Florence resident
Fred McAtee – Florence resident
Andy McIntosh – Omya employee
Bev Peterson – Florence resident
Bob Steibly – Omya employee

Absent:

Pat Church - Florence resident
Shawn Good – Florence resident

Note taking: Mary-Kaye Macaulay – Omya
Dave Thayer – CLF Ventures

I. Welcome and Introductions

Issue Team co-facilitators Bob Steibly (Technical Manager) and Andy McIntosh (Geologist) welcomed the Team and introduced John Haverstock as a new team member. Fred McAtee was also introduced as this was his first opportunity to attend a meeting. The name of a new team member was mentioned for possible inclusion on the team at a point in the future. The agenda and format for the fourth meeting was discussed.

II. Old Business

Bob and Andy provided an overview of the previous meeting. The Team had no edits or changes to the meeting minutes of July 8, 2008. Meeting minutes were accepted for posting online at www.omyainvermont.net.

III. Discussion of Prioritized Issues

Andy and Bob reviewed the Team Members three prioritized issues:

- (1) Water Quantity/ Quality
- (2) Blasting Noise and Ground Vibration
- (3) Noise from equipment

Omya Community Issue Team – Quarry Issues

October 14, 2008 Meeting Summary

Blasting Noise/Ground Vibrations

Two blast-viewing events were held at the Hogback Quarry on 9/16 and 9/17. Team members viewed and experienced the first blast at Hogback Quarry and listened for the second blast at a team member's property. Five seismographs and one noise monitor were utilized to monitor data from the events. Cam Thomas, an independent blasting consultant from Thomas Engineering of Ontario, Canada, arranged three seismographs, video recorded each blast, and lead discussions about the blast viewings. Mr. Thomas explained the ground vibration and air blast monitoring system and elaborated on the possible effects of ground vibrations and air blasts on nearby structures resulting from a quarry blast. He also discussed how atmospheric conditions can affect the experience and perception of a blast. Mr. Thomas followed up the blast viewings with a detailed report of both blasts that included:

1. Explanation of the blast designs
2. Video monitoring of each blast
3. Seismograph Monitoring of each blast at several locations
4. Review of the Hogback Quarry blast records for 2008
5. Discussions and Conclusions

Team members received copies of the report.

Andy reviewed some standard terms associated with blasting before proceeding with a discussion of Mr. Thomas' report. Andy explained that **ground vibration** is the high frequency shaking of the ground from a blast. This is monitored by measuring the velocity of the movement of the ground in inches per second with a seismograph. **Air blast** is the low frequency noise generated by the movement of air caused by the blast. This is monitored by measuring both the audible and inaudible noise in decibels using a microphone.

Andy explained that Omya's Hogback Quarry contractor maintains ground vibration levels at the property line below the 0.5 inches/second limit adopted by the Town of Pittsford, and well below the "Z" curve line on the graph established by the U.S. Bureau of Mines (USBM). The USBM has concluded that as long as the vibration levels were below the Z curve, there is no possibility of any damage from the blasting vibrations. He also provided a chart showing the air blast effects at various dB (decibel) levels. The USBM has conservatively set the air blast limit at 136 dB. Air blast levels of more than 120 dB can be disturbing and cause complaints. However it takes an air blast of 150 dB to begin to cause damage which is usually a cracked or broken window. Most Hogback Quarry air blasts at neighboring properties are in the 110 dB range.

A video of both blasts was shown and discussed. Andy proceeded to summarize Mr. Thomas' report on the ground vibrations and air blast levels measured at four locations: 1) opposite the blast at the south end of the quarry, 2) half way between the quarry and the residences to the east of the quarry on the East Reclamation Area, and 3) & 4) near and at a team member's property for each blast. The report showed the following information:

Omya Community Issue Team – Quarry Issues

October 14, 2008 Meeting Summary

Blast Date 9/16/08

<u>Location</u>	<u>Distance to Monitor</u>	<u>Ground Vibration</u>	<u>Air Blast</u>
South end of quarry	1,720 ft	0.01 inches/sec*	132 dB
East Reclamation Area	1,090 ft	0.14 inches/sec	123 dB
Near team member's property	2,360 ft	0.07 inches/sec	118 dB
At team member's property	2,290 ft	0.12 inches/sec	117 dB
At property line SE of quarry**	1,950 ft	0.09 inches/sec	120 dB
* (Quarry hole between blast and monitor results in very low ground vibration.)			
** (This location was not included in the report.)			

Blast Date 9/17/08

<u>Location</u>	<u>Distance to Monitor</u>	<u>Ground Vibration</u>	<u>Air Blast</u>
South end of quarry	1,550 ft	0.01 inches/sec	120 dB
East Reclamation Area	1,170 ft	0.09 inches/sec	112 dB
Near team member's property	2,290 ft	0.06 inches/sec	106 dB
At team member's property	2,290 ft	0.17 inches/sec	106 dB
At property line SE of quarry**	1,950 ft	0.09 inches/sec	113 dB
* (Quarry hole between blast and monitor results in very low ground vibration.)			
** (This location was not included in the report.)			

Mr. Thomas concluded that all of the ground vibrations and air blast levels recorded adjacent to the Hogback Quarry, although noticeable, are far below the levels that can cause damage, and the blasting program at the Hogback Quarry is well managed and documented. Team members that attended the blast viewing expressed their appreciation for Mr. Thomas' involvement and his ability to communicate this complex process so thoroughly in understandable fashion.

Omya Community Issue Team – Quarry Issues

October 14, 2008 Meeting Summary

Water Quantity/Quality

The May Monitoring results were discussed. The Team was referred to the website to access the full Monitoring report and Geosyntec, Inc. presentation.

Geosyntec presented the findings to the Environmental Issues Team Members on July 31, 2008. Geosyntec also provided the findings to all participating well owners and provided follow-up with calls to well owners as necessary.

May Monitoring findings show:

- No offsite detections of AEEA in May 2008. Last detection was August 2007 at 9 PPB (parts per billion). Vermont Health Advisory is 20 PPB.
- Low levels of Perchlorate <0.75 PPB were detected offsite. Vermont drinking water standard is 4 PPB
- Low levels of Arsenic <3.3 PPB were detected offsite. Vermont drinking water standard is 10 PPB.

Noise from Equipment

At this time noise will remain listed as a priority issue and discussed at future meetings as necessary.

Current Happenings at Omya

David Thayer from CLF Ventures addressed the team about the Issues Team Survey being conducted. He explained that the purpose of the Issues Team interviews is to determine how well the three Omya Community Issues Teams (Trucks and Transportation, Plant, and Quarry) have worked for the members and the community. One-on-one interviews will be conducted by David to gather candid feedback so that Omya can improve this forum to best meet the future needs of the members and community. These observations and the recommendations they inform will be brought back to the teams for further discussion.

Andy informed the team that Omya has secured an Air Permit from the State as one step in its process to extend Hogback Quarry operations from seasonal to year round. Further permitting will include public participation.

Information on the Omya – Middlebury Quarry Open House set for 10/18 was discussed and all were invited to attend and to pass the invitation on to their friends and family.

Omya Community Issue Team – Quarry Issues

October 14, 2008 Meeting Summary

IV. Prioritized Issues and Next Steps

The Prioritized Issues remain:

- (1) Water Quantity / Quality
- (2) Blasting Noise and Ground Vibration
- (3) Noise from equipment.

Next Steps:

The team did not raise any new issues or requests for further information at this time.

V. Next Meeting Date

There was no date set for a fifth Quarry Issues Team meeting at this time. A meeting time will be arranged to follow up with the Issues Team Survey results conducted by CLF Ventures.