

Evergreen Noise Violation Status Update
June 4, 2009

The following chart represents the sequence of events that have been initiated to deal with the original noise violation:

Issue/Task	Date Completed	Responsible Party
Noise Complaint filed with DEC	March 27, 2009	Neighboring Property Owners
Confirmation of Noise Violation	March 28 and 29, 2009	DEC
Issuance of Notice of Violation to Evergreen Solar for producing a "Pure Tone" condition	April 1, 2009	DEC
Facility repairs to reduce noise sources: <ul style="list-style-type: none"> - VOC Scrubber motor and blower fan replacement - Shutting off door exit alarms - Chiller unit pump repairs - Keeping large doors closed to contain noise 	April 30, 2009 (on-going) April 6-13, 2009 April, 2009 April 2009 April 2009	Evergreen
Public Meeting to receive update from Evergreen and input from neighbors	May 7, 2009	DEC
Gas deliveries restricted to daytime hours	Agreed to on May 7, 2009 but have not complied	Evergreen
Long term noise monitoring to identify other noise sources <ul style="list-style-type: none"> - RFP issued - Consultant Selected - Monitoring Initiated (3 loc.) - Inventory noise sources at Evergreen 	Proposed on May 7, 2009 May 11, 2009 May 18, 2009 May 18, 2009 May 21, 2009	DEC
Interim results of long-term noise monitoring	May 22, 2009	DEC
Second Notice of Violation issued based on follow-up monitoring	May 26, 2009	DEC
Delivery timing (8AM-4PM) restriction placed on tank permits (Argon, Nitrogen and Oxygen)	May 27, 2009	Devens Fire Department (Evergreen and Praxair notified) Evergreen has locked gates prohibiting Praxair access during unscheduled times
Praxair provides Evergreen with plan requirements for ground-mounted pumps. Interim noise attenuation measures not successful (switching location of deliveries and wrapping truck pump with acoustical blanket)	June 1, 2009	Evergreen
DEC Noise Consultant prepares interim draft Noise Monitoring results	June 1, 2009	DEC (provided to Evergreen same day)
Noise monitoring set up at facility (measured twice daily)	June 2, 2009	Evergreen

The DEC has issued a second notice of violation based on the interim results of the long-term monitoring and requested compliance by June 29, 2009 but has requested Evergreen install the necessary sound attenuation equipment immediately to temporarily address the gas delivery noise violations until a permanent solution is

implemented. Evergreen and Praxair have developed a permanent solution to the gas deliveries and will be installing two ground-mounted pumps which should significantly reduce noise levels during gas deliveries. The lead time for ordering and installation is 8-10 weeks. As per the May 26, 2009 NOV, interim measures must be taken by Evergreen to reduce the noise levels during Argon and Nitrogen deliveries. Evergreen has made a few attempts to control the noise levels (insulating pumps, altering fill locations) but these have proved unsuccessful. Mr. Sheadel's draft interim noise monitoring report provides Evergreen with another option (sound insulated tent canopy) which they are currently reviewing with Praxair. The DEC has consulted with the Fire Chief and he has no concerns with a partial cover for Nitrogen and Argon deliveries but not for Oxygen and Hydrogen Deliveries – due to fire hazards. The main noise issues stem from the Argon and Nitrogen deliveries, so this may be a viable interim option.

Summary of Noise Monitoring Study – Draft Interim Report

Mr. Sheadel's June 1, 2009 draft interim monitoring report states that the facility is approximately 9dBA over the DEC standard at the nearest property line. To remedy this, Mr. Sheadel states that each treated source needs to be reduced by approximately 15dBA. The report breaks the sound sources into tiers and this portion of the report addresses the first tier noise sources in an effort to provide Evergreen with data and plausible solutions that will allow them to begin further reducing the noise levels within the tighter timeframe the DEC has established.

Tier 1 Noise Sources	Mitigation Options:
<u>Argon and Nitrogen Gas Deliveries</u> – Hydraulic pump and engine	<ul style="list-style-type: none"> • Ground Mounted Pump • Interim measure - acoustic blanket fabric tent
<u>Thermal Oxidizer blower/motor units</u> – 3 primary blowers at ground level and 5 smaller blowers at ~30feet. One stack emits substantially more noise than the others.	<ul style="list-style-type: none"> • Noise wall (not addressing source and not fully containing) • Custom Enclosures around each unit
<u>Thermal Oxidizer Vents</u> – air exhaust turbulence and blower sound.	<ul style="list-style-type: none"> • Custom-designed silencer. Needs to comply with DEP Air emissions and dispersion criteria
<u>Cooling Towers</u> – fans exposed on top – large source of noise directed vertically. Internal fans also produce noise horizontally	<ul style="list-style-type: none"> • Third unit facing south requires silencer panels • Fiberglass cones treated with acoustic material surrounding exposed fans completely (to avoid noise from rebounding off building and back into the community).
<u>Dust Collection System</u> – exposed sources of noise from blower fans (between 2-20 ft. in elevation).	<ul style="list-style-type: none"> • Cover fans

Addressing these tier 1 noise sources (most significant sources) could take away 10dBA which is approximately 90% of the facility noise. Mr. Sheadel has indicated that cooling tower baffles, enclosures for fans and the tent for the gas deliveries could be accomplished within 30 days, and while addressing these tier 1 issues may not bring the facility into full compliance at the property line, it should bring the facility into compliance at the adjacent residences, providing the residents some relief.

Second tier sources include air return vents and rooftop blowers but the study indicates these do not contribute to off-site noise levels. Other second tier sources include gas storage area, generator areas, loading docks and open doors. The evaluation of these sources will be part of the final report.

The full modeling study will help to identify which second or third tier sources will need to be reduced and by how much to achieve full compliance. The interim report provides data and recommendations that will allow Evergreen to begin addressing the Tier 1 sources, which sound significantly reduce the noise levels at the property boundary.

With this second violation notice, DEC Staff have made an emergency declaration and requested more expeditious compliance than typically allowed under the DEC Regulations, recognizing the prolonged elevated levels of noise and its impacts on public health.