



November 21 2022
Project No. 220602

Scott Miller
Jackson District Office
Air Quality Division
Michigan Department of Environment, Great Lakes, and Energy
State Office Building, 4th Floor
301 East Louis Glick Highway
Jackson, MI 49201-1535

Response to the Letter Dated October 28, 2022
Crimson Holdings (SRN E8117)
Adrian, Michigan

Dear Scott:

On November 1, 2022, EGLE-AQD issued a Violation Notice (VN) to Crimson Holdings, LLC alleging a violation of Rule 901(b) on Friday, October 28, 2022. The specific allegations cited in the VN are as follows.

Process Description	Rule/Permit Condition Violated	Comments
Powdered Egg Manufacturing Facility	R 336.1901(b)	On October 28, 2022, AQD staff followed up on ongoing complaints that were received concerning odors coming from this facility. AQD staff were able to verify these odors were in violation of Rule 901(b).

As requested, this letter provides information regarding the referenced citation, including: the date the alleged violation occurred; an explanation of the cause(s) and duration of the alleged violation; whether the violation is ongoing; a summary of the action(s) that have been taken and are proposed to be taken to correct the violation; the date(s) by which these action(s) will take place; and what steps are being taken to prevent a reoccurrence. All dates referenced in this response were in 2022.

Activities at the Plant

Since Crimson Holdings received its first violation letter associated with odors from the plant, the company has undertaken several projects to reduce odors and assure neighbors that the facility is environmentally safe. These activities include:

- Replacing the stack to allow it to exhaust unobstructed vertically upward and raising it 16 feet from its previous height.
- Installation of an odor neutralizer system to treat odors from powdered egg manufacturing.
- Performed stack testing to ensure toxic air contaminants meet the associated acceptable ambient concentrations associated with Michigan's air toxics rules.
- Documented required maintenance activities at the plant and created checklists to ensure proper record keeping.
- Developed a Nuisance Odor Minimization Plan (NOMP) to outline required air pollution control equipment operation and activities needed to address odors when they are reported. The NOMP was submitted to both the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and the Michigan Department of Agriculture and Rural Development (MDARD) for approval. MDARD met with us and made several suggestions for improvement to the NOMP, which Crimson Holdings has incorporated into both the NOMP and its operation and maintenance (O&M) practices at the plant.
- Developed a form that can be completed online for residents to provide feedback on plant odor control activities.
- Improved onsite wastewater treatment plant (WWTP) performance to reduce odors from the operation of the WWTP and the sludge produced at the plant.
- Changed the sludge storage tank stack and developed a routine to periodically replace carbon filters associated with the tank.
- Placed carbon filters on exhaust coming from the onsite WWTP.

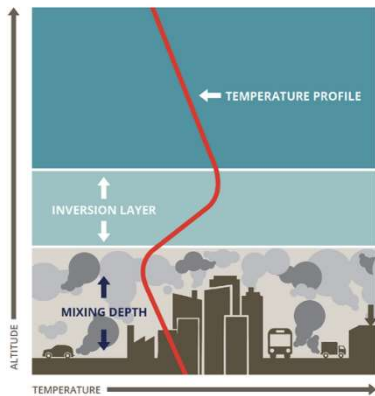
Reports filed by EGLE staff on several occasions (June 12, 13, and 21; July 6; August 17; and September 21) indicated that odors were perceived; however, they were not at a level that would merit a violation under Rule 901(b). On September 21, a representative of MDARD was also onsite conducting odor investigations with EGLE.

Temperature Inversion on October 27 and 28

A surface inversion occurred in Adrian on October 27-28, which influenced air dispersion around the Crimson Holdings facility, making odors seem worse than they really were. EGLE visited the area early in the morning on October 28; the temperature was cool and the wind speed was low. Later in the day as the atmosphere began to warm near the surface, odors dispersed as they normally would. Attachment 1 provides information from the EGLE, Air Quality Division (AQ) which verifies that a temperature inversion indeed took place at that time.

Under most circumstances, the temperature of the atmosphere decreases with height, meaning it gets colder as elevation increases. A temperature inversion occurs when the atmosphere actually becomes warmer as altitude increases. This typically occurs within a defined layer of the atmosphere. Temperature inversions, when they occur, can have a major impact on air pollution and air quality.

Graphic 1 – Inversion layer



A surface inversion can be triggered by rapid surface cooling, caused by the release of radiant energy overnight. Cold air was trapped beneath the warm air above it, creating a pocket of stagnant air around the plant. This affects air dispersion because it interferes with the dynamics of air dispersion. Warm air usually rises in the atmosphere because it is less dense and more buoyant than the cooler air above it. Temperature inversions prevent this vertical movement. An inversion acts like a lid and traps air pollutants underneath the warm layer of air where they collect and become stagnant.

Because of this temperature inversion and low or no wind, exhaust air from the Crimson Holdings stack did not disperse as it would have under normal circumstances. It should be noted that EGLE-AQD staff at the site during the October temperature inversion labeled the odor a “Level 2-3”.¹

This was not a representative condition for evaluating odors.

Additional Planned Mitigation Activities

EGLE provided copies of complaints received during October; in reviewing them Crimson Holdings noticed that several complainants seem to question use of the odor neutralizer. While Crimson Holdings has submitted information on the odor neutralizer and demonstrated that its use is exempt under Michigan’s permitting rules as well as detailed information on ingredients in the odor neutralizer, we are sympathetic to neighbors who are concerned about the scent. The neutralizer product contains essential oils which are present in several consumer products and are not harmful if used as intended; however, in response to requests submitted in the community Crimson Holdings hopes to cease use of the odor neutralizer when the stack height is increased.

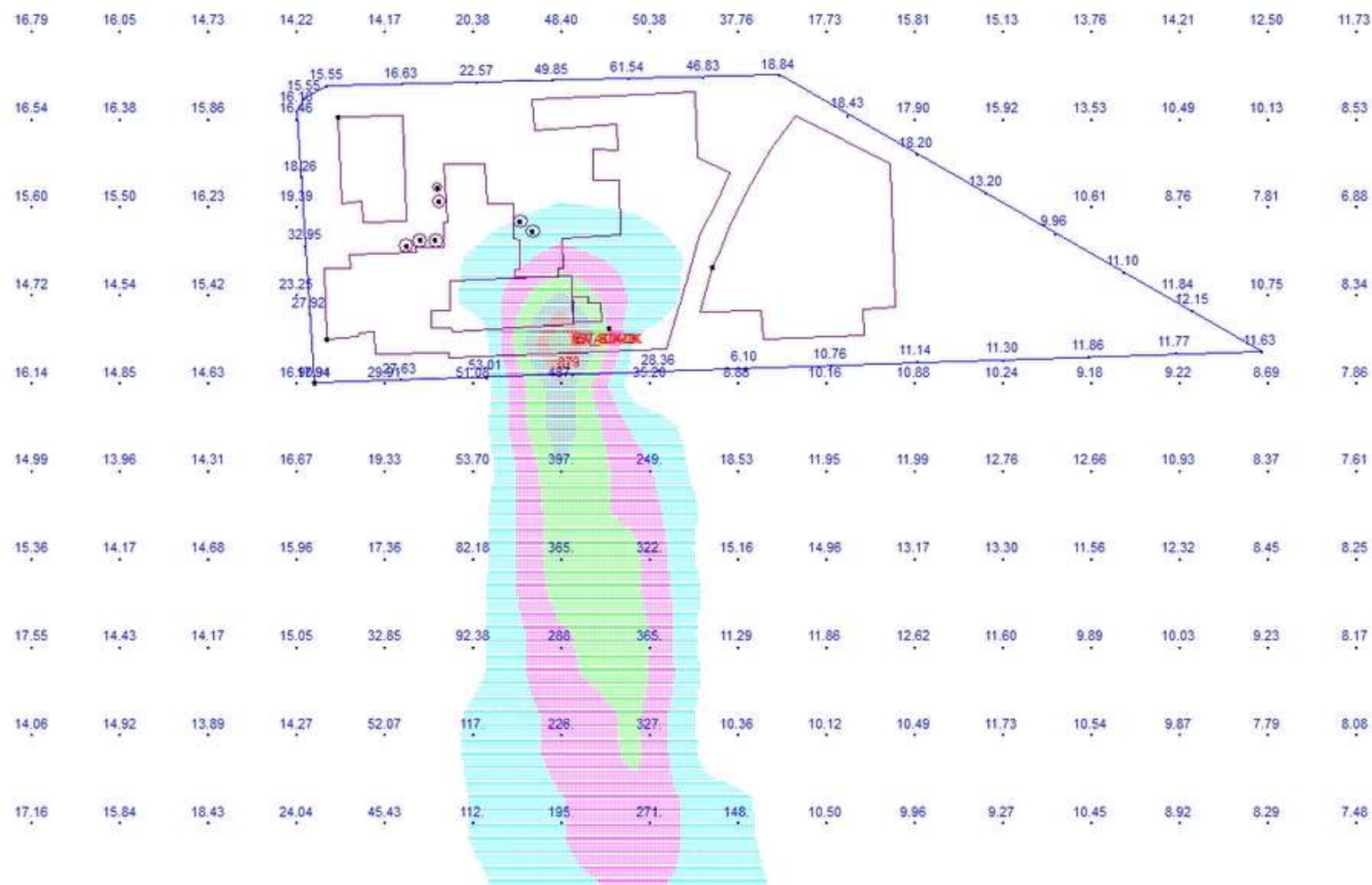
While Crimson Holdings continues to work with EGLE and MDARD on the NOMP, we do realize that odors have resulted from performing non-routine maintenance or cleaning activities. Crimson Holdings will add some non-routine maintenance activities to the NOMP along with measures that can be taken to mitigate odors. It may be that Crimson Holdings reroutes its ventilation system at those times or uses the odor neutralizer in other areas of the plant. Crimson Holdings is requesting comments from EGLE on its proposed NOMP to ensure any outstanding fugitive odor issues are addressed.

As part of the Enforcement Negotiations, Crimson Holdings has offered to raise its stack significantly.

¹ 0 – Non-Detect; 1 – Just barely detectable; 2 – Distinct and definite odor; 3 – Distinct and definite objectionable odor; 4 – Odor strong enough to cause a person to attempt to avoid it completely; 5 – Odor so strong as to be overpowering and intolerable for any length of time

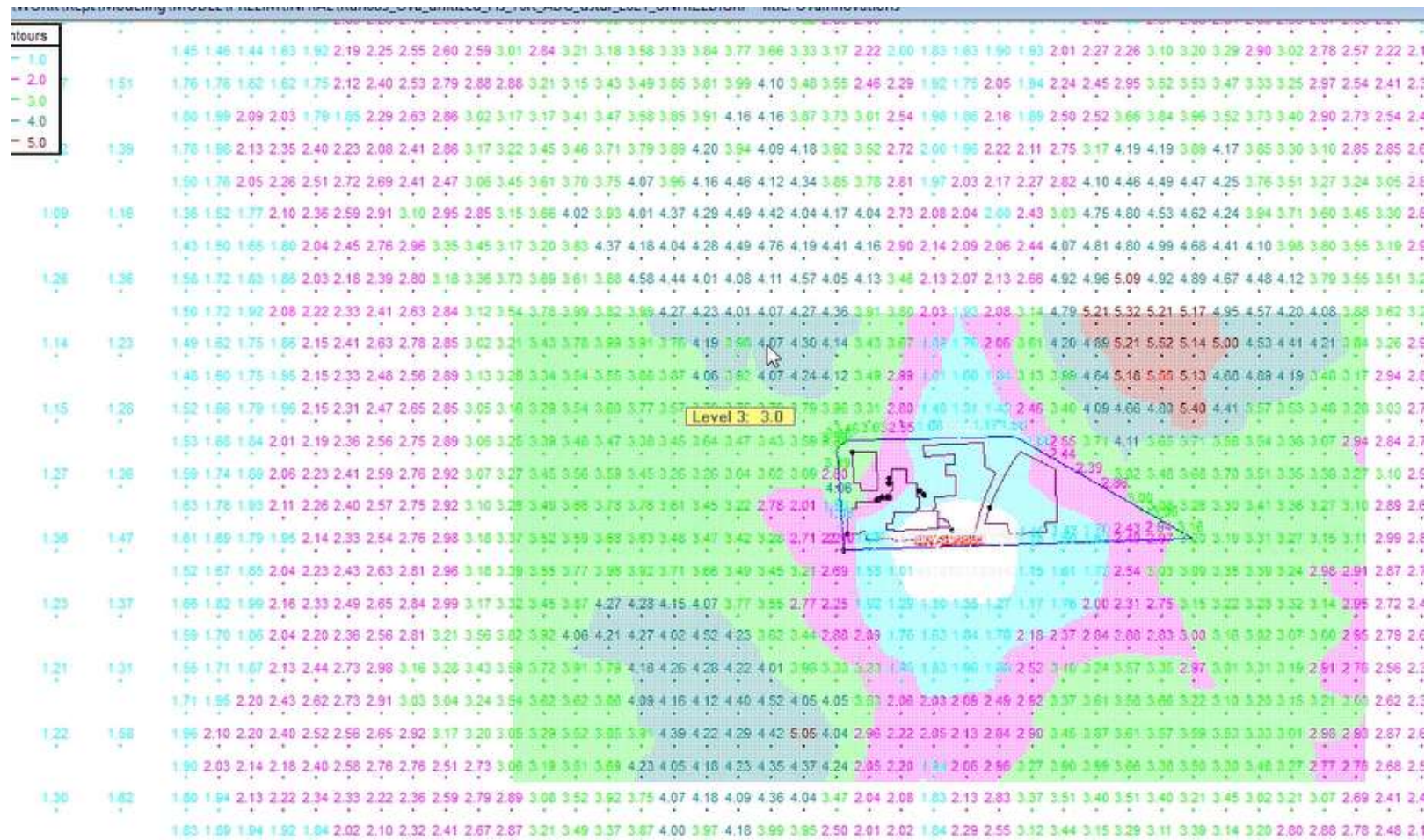
Graphic 2 – Dispersion from the existing 49-foot tall stack

The highest concentrations occur right outside the facility. Concentrations are lower as distance from the facility increases.



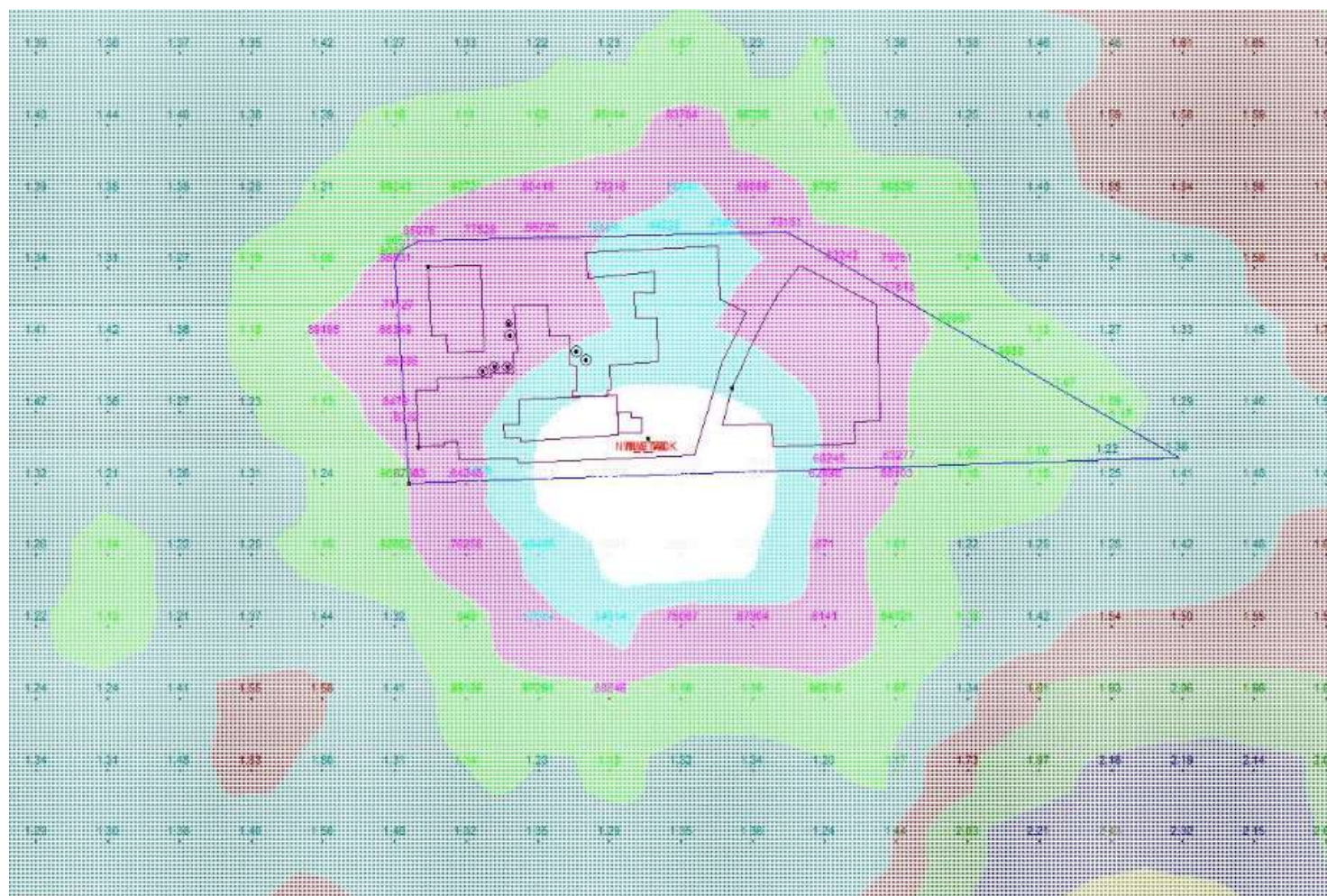
Crimson Holdings has considered raising the stack to 76 feet which would result in better dispersion. With a 76-foot stack, the impacts at the highest point would be lower and dispersed around the facility where they would be less susceptible to weather conditions. In addition, the highest concentration would only be 1% of the current concentration.

Graphic 3 – Dispersion from a 76-foot tall stack



Crimson Holdings has also considered raising the stack to 100 feet, further improving dispersion and reducing impacts an additional 50% from the levels associated with the 76-foot stack. This would be an additional expense and would require additional structural work in the plant; however, it appears that a 100-foot tall stack would completely eliminate the possibility of strong odors around the plant.

Graphic 4 – Dispersion from a 100-foot tall stack



Crimson Holdings is committed to implementing the NOMP to ensure that odors around the facility does not generate nuisance odors.. Crimson Holdings is requesting a meeting with EGLE to talk about additional measures needed and will propose that the stack can be raised to 76 feet or 100 feet by the end of this year.

If you have any questions, please contact me at dhofbauer@crimsonhldg.com (517.208.0904) or our environmental consultant, Lillian Woolley, of Fishbeck, at lwoolley@fishbeck.com (586.489.6876).

Sincerely,



Dan Hofbauer
Plant Manager

By email

Copy: Andrew Drury – EGLE -AQD
Chris Ethridge, EGLE-AQD
Malcolm Mead O'Brien – EGLE-AQD
Stephanie Weems – EGLE-AQD
Susan Johnson – Butzel
Emily Bur – LS2
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