

John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

June 6, 2013

RE: CRISTAL CHEMICALS PLANT No. 1  
NPDES PERMIT NO. 3IE00013\*ID  
ASHTABULA TWP, ASHTABULA COUNTY  
COMPLIANCE EVALUATION INSPECTION

Mr. Richard D. Hughes, Environmental Superintendent  
Cristal Global - Cristal Inorganic Chemicals  
2900 Middle Road  
Ashtabula, Ohio 44004

Dear Mr. Hughes:

On June 3, 2013, a site inspection was conducted at the above referenced facility at 2900 Middle Road. The facility also includes the adjacent Cristal Landfill. The inspection was conducted by John Schmidt of Ohio EPA's Division of Surface Water (DSW), with Mathew Narducci representing Cristal Global (Cristal), formerly Millennium Inorganic Chemicals. Steve Kilper from American Waste Services accompanied Ohio EPA and Cristal during the inspection of the landfill. Prior to and after conducting the inspection, we also spoke with Rick Hughes representing Cristal. The purpose of the inspection was to evaluate the facility's compliance status with respect to the terms and conditions of the facility's National Pollutant Discharge Elimination System (NPDES) permit and in conjunction with renewal of said permit. The last compliance inspection was conducted on June 7, 2012.

1. Industrial Waste Water Treatment

Process waste water is generated from the following:  $TiCl_4$  gas scrubbers, oxidation process, flue pond cooling, finishing,  $TiCl_4$  cooling tower, oxide cooling tower, and landfill contact water. Leachate from the landfill is collected in clay-lined channels and double-walled piping and collected in a lined surface impoundment near the front entrance. Floor drains from the WWTP buildings flow to an oil/water separator prior to discharge to the leachate impoundment. The leachate impoundment flows to a sump located at Plant 1 near the filter building WWTP, where it enters the industrial wastewater treatment plant for pH adjustment, thickening, and settling. Finishing waste waters are collected to a settling tank prior to neutralization, and scrubber wastes are sent to the neutralization plant. All other plant wastes discharge to a junction chamber between the south settling pond and the middle settling pond. Water then flows through a series of additional settling ponds and a pump station prior to discharge. The outfall of all discharges from Plant 1 is Outfall 003. No changes to the process are noted from the 2012 inspection.

2. Sanitary Waste Water Treatment Plants (Administration Area Sanitary WWTP, Filter Press Area Sanitary WWTP, and Landfill WWTP)

There are three sanitary waste water treatment plants (WWTPs), one treating sanitary and laboratory wastes from the filter press building, another serving the main plant administration building, and a third system serving the landfill employees. Wastewater from sanitary and laboratory wastes are treated through an extended aeration facility adjacent to the administration building prior to discharge to a junction chamber between the South Pond and the Middle Pond. The outfall for the Sanitary WWTP is Outfall 601. The WWTP serving the filter building consists of a septic tank that discharges to a Wisconsin-type mound system,

and the WWTP serving the landfill consists of a septic tank that discharges to a mound system; both of which do not require an NPDES permit. Cristal noted that the mound system at the landfill WWTP requires inspection and repair, which was verified during the inspection. Cristal should conduct necessary repairs to the system and document the repairs to Ohio EPA. If the mound needs replacement then Cristal must obtain a permit-to-install (PTI) from Ohio EPA. The sanitary systems are otherwise unchanged from the 2012 inspections.

3. Storm Water Treatment

All storm water within the facility is collected via a series of yard drains and drainage channels and conveyed to the two settling ponds in parallel (South Pond and Middle Pond). The North Pond is utilized and an effluent flow equalization in lieu of discharge through Outfall 003. The storm water treatment system is unchanged from the 2011 inspections. Storm water from the landfill is diverted to a sedimentation basin located northeast of the landfill.

Cristal has submitted renewal applications for this permit and the NPDES permit for Plant 2 (3IE00017). Cristal is proposing to combine both permits into a single NPDES permit to allow diversion of flows between the two plants to the industrial waste water treatment system of each. Ohio EPA issued a draft NPDES permit on June 3, 2012.

Observations

Following are observations made during the inspection.

*Industrial Wastewater Treatment Plant*

1. The general operation and maintenance of the chemical neutralization waste water treatment system appeared to be satisfactory. The neutralization tanks were taken offline and inspected as a part of the plant shutdown in May 2013. The settling ponds are typically dredged every 6 to 9 months. Sludge from the sludge treatment process is taken to the captive industrial landfill located east of the facility on Middle Road. The middle and south ponds were dredged in May 2011. The north sedimentation basin was dredged to 15 feet deep in August 2012. Additional dredging of the pond is tentatively scheduled for July-August 2013. The composite sampler was found to be maintained at the proper temperature and collecting a flow proportional sample. The manual thermometer was reading erroneously and must be replaced. The effluent from Outfall 003 was of acceptable visual quality.

*Sanitary Wastewater Treatment Plant*

2. The overall condition of the treatment plant during this inspection was satisfactory with the plant well kept. Log books, NPDES permit, and the operation and maintenance manual are maintained at the site in the NALCO trailer and were available for inspection. Log books should be maintained in a bound, numbered book. The content of the aeration tank had a medium brown color and good mixing. Sludge returns were a medium brown color with moderate foaming. The blowers were cycled and found in operating condition. The surface of the clarifier was clear, and effluent channels and weirs were reasonably clean. Clarifier cleanings are now containerized for disposal as a solid waste. Surface sand filter dosing pumps could not be cycled due to operating on a float system, but did operate during the inspection. The south surface sand filter was in operation at the time of the inspection. There

was sludge on the bed, indicating a prior upset. It appears that the sand will be replaced in the near future. The effluent discharged to the sand filter during the inspection was clear and free of color and turbidity. The wastewater percolated freely through the sand indicating that the beds were not clogged. The UV disinfection system was found in operating condition. The effluent pump station pumps were cycled and found in operating condition. All alarms were found in operating condition. Sludge was removed from the plant in February 2013.

*Filter Building Wastewater Treatment Plant*

3. The filter building wastewater treatment plant was inspected and found in operating condition. No outbreaks in the mound were noted during the inspection.

*Landfill Wastewater Treatment Plant*

4. The landfill wastewater treatment plant was inspected and found in operating condition. An outbreak was noted on the north side near the west end of the mound, as well as near the west observation port. This appears to be a broken pipe within the mound. Cristal previously notified Ohio EPA that the mound system at the landfill WWTP requires repair, which was verified during the inspection. Cristal should conduct necessary repairs to the system and document the repairs to Ohio EPA. If the mound needs replacement then Cristal must obtain a permit-to-install (PTI) from Ohio EPA.

*Landfill Storm Water Treatment System*

5. The landfill storm water management system was inspected and found in operating condition. Both the southeast sedimentation pond and the discharge downstream of the silt trap were found discharging during the inspection. The discharge was clear and of acceptable visual quality. These outfalls will be required to be monitored with the renewal of the NPDES permit. The emergency contact-water pond (northwest pond) overflow outfall is Outfall 004. The outfalls for the sedimentation pond and silt trap discharge are currently unpermitted. Outfall 004 was observed as not discharging during the inspection.
6. The storm water pollution prevention plan (SWPPP) for the landfill was updated on December 21, 2012. The annual site certification inspection for the landfill was completed on December 21, 2012. Employee training for the landfill is conducted throughout the year, with the latest training conducted on December 27, 2012.

*Manufacturing Plant Storm Water Treatment System*

7. Storm water is collected through a series of channels and sumps and conveyed to the various settling ponds (South Pond, Middle Pond, North Pond). The storm water pond discharges to the outfall weir, pump station, and the FirstEnergy discharge channel for ultimate discharge through Outfall 003. The sedimentation ponds were cleaned out in late May 2011, and are dredged every 6 to 9 months. The sedimentation pond at the landfill is examined annually and has not needed dredged to-date. Outfall 003 is noted as discharging an effluent of acceptable visual quality.
8. The storm water pollution prevention plan (SWPPP) for Plant 1 was updated on July 15, 2012. The annual site certification inspection for Plant 1 was completed on July 13, 2012. Employee training for Plant 1 is conducted throughout the year, with the latest training conducted on several dates in September 14, 2012. More comprehensive training on the SWPPP was performed in July 2012.

Mr. Richard Hughes, Cristal Inorganic Chemicals  
Cristal Plant No. 1 Ashtabula Facility  
June 6, 2013  
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**NPDES Permit Compliance Review**

A review of the electronic discharge self-monitoring reports (eDMRs) received by Ohio EPA for the period May 1, 2012 through May 1, 2013, indicates apparent noncompliance of the terms and conditions of your NPDES permit. Specific instances of noncompliance are as follows:

Limit Violations

No apparent limit violations were noted for the period reviewed.

Reporting Violations

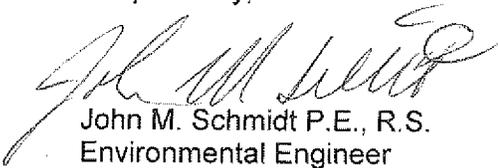
The following reporting violations were noted for the period reviewed:

Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
003	50050	Flow Rate			AD	3/1/2013
003	50050	Flow Rate			AD	3/2/2013
003	50050	Flow Rate			AD	3/3/2013
003	50050	Flow Rate			AD	3/4/2013
003	50050	Flow Rate			AD	3/5/2013
003	50050	Flow Rate			AD	3/6/2013
003	50050	Flow Rate			AD	3/7/2013
003	50050	Flow Rate			AD	3/8/2013

In accordance with Part III, Item 12 of the permit, Cristal notified Ohio EPA of the violation on April 15, 2013 and followed up with a report on April 29, 2013. Cristal stated that it appears that the leads from the flow meter to the PI data collection System failed. There appeared to be flow, but the data recorder failed to store the amount and the readout was negative. Cristal determined that the flow meter failed and the plant personnel did not place a notification to repair the meter as appropriate. Cristal revised its internal operating procedures by requiring all environmentally critical equipment be repaired within 24 hours as opposed to 30 days. The revisions will ensure that a flow meter will be out of service for no more than 24 hours if it fails again. As Cristal has taken adequate measures to ensure that this is not repeated, no additional information is needed to respond to the violations.

If you have any questions or comments regarding this inspection, please feel free to contact me at (330) 963-1175.

Respectively,



John M. Schmidt P.E., R.S.  
Environmental Engineer  
Division of Surface Water

JMS:bo

pc: File: Industrial/Cristal Plant 1/PC