

July 12, 2019

Mr. Sean Metrick, Borough Manager  
Borough of Narberth  
100 Conway Avenue  
Narberth, PA 19072

RE: Covanta Plymouth Renewable Energy

Dear Mr. Metrick:

Following the June 10 unplanned shutdown of Covanta Plymouth, we pledged to conduct a full investigation of the shutdown and related events. We also promised to provide the results of that investigation to you upon completion. This letter is to provide you with the results of our investigation and to set forth actions that Covanta Plymouth is taking as a result of that event.

Summary Timeline of Events

- At approximately 0818 on June 10, the Facility utility tie breaker and turbine generator breaker trip open resulting in the loss of power to the facility. The utility tie breaker and turbine generator breaker tripped due to an electric protective relay circuit opening.
- Concurrent with the turbine generator tripping offline and per steam system design, steam pressure relief valves lifted resulting in steam being vented to atmosphere.
- At 2120 on June 10, repairs to the damaged cable were completed and power to the Facility was restored. Startup of plant auxiliary systems began.
- From 2200 – 2400 on June 10, waste on the combustion grates was run-off in both units.
- At 0209 on June 11, auxiliary burners on Unit #1 were placed into service as the Facility prepared to warm the boiler to operating temperature. Unit #1 waste feed hoppers were opened at 1340 on June 11.
- Beginning sometime in the morning of June 11, there were apparently community complaints of odors. Covanta did not receive the morning complaints, but became aware of them when the Plymouth Township Fire Marshall visited the Facility site at 0545 and again at 0830.
- At 0943, representatives of the PADEP Air Quality Division and Solid Waste Division arrived on site in response to citizen complaints. PADEP inspected the Facility and reported no unusual smells during their visit.
- Between 1200 and 1230 on June 11, there were community reports of a visible plume moving toward Conshohocken. A representative of the Borough of Conshohocken came to the Facility site at approximately 1252 and drove a Covanta representative to surrounding neighborhoods in response to plume/odor concerns. The Covanta representative did not smell

any odors in the areas visited at the time of the inspection with the Conshohocken representative.

- Unit #1 waste feed hoppers were opened at 1340 on June 11 and waste feeding began.
- At 1449 representatives of the PADEP Air Quality Division and Solid Waste Division again visited the site in response to citizen complaints. PADEP stated that they detected a slight odor around the electrical transformer.
- At 1530, representatives of the Plymouth Township Fire Department conducted a site visit in response to citizen complaints.
- At 1903 on June 11, auxiliary burners on the Unit #2 were placed into service. Unit #2 waste hoppers were opened at 0253 on June 12. The Facility returned to normal operations.

#### Actions Taken by Covanta Plymouth in Response to Event

- Covanta retained the services of Trinity Consultants to undertake an air modeling study using Facility operating data and local meteorological data for June 11<sup>th</sup> (the day associated with community odor reports).
- At the request of PADEP, Covanta retained an electrical contractor (RESA Power) to inspect the main electrical transformer at the Facility.
- Covanta retained Odor Science and Engineering, Inc. to perform an odor survey in the area of the Facility.
- Covanta provided detailed responses to all information requests from PADEP.
- Covanta provided PADEP with Facility Continuous Emissions Monitoring (“CEMS”) data.
- Participated in a meeting with representatives of PADEP to discuss the event and our preliminary findings.
- Covanta provided local municipalities with a copy of our June 14 response to PADEP in which an initial timeline of events was provided and a series of action steps were established.
- Covanta provided local municipalities with copies of various responses to PADEP inquiries.
- Covanta conducted an extensive internal investigation of the event to determine possible causes, contributing factors, and preventative action steps.

#### Summary of Findings

- The breakers on the protective relay circuit opened as a result of a shorted power cable.
- During Unit #1 startup, urea injection occurred for a period of time during auxiliary burner operation and prior to waste combustion, which is not typical. Urea is a reagent used to reduce the formation of oxides of nitrogen (NO<sub>x</sub>).
- When it is burned, urea may result in the generation of nitrogen oxide (NO) and the formation of nitrogen dioxide (NO<sub>2</sub>). The existence of NO<sub>2</sub> has been reported in literature to produce a yellow or brown smoke with an acrid smell under certain conditions. That description is consistent with reported observations of a plume during the event.
- Air modeling indicates that if all NO was converted to NO<sub>2</sub>, a very conservative assumption, maximum ground level concentrations of NO<sub>2</sub> at the time of the reported plume are substantially below federal National Ambient Air Quality Standards (“NAAQS”) and Acute Exposure Level Guidelines (“AEGLs”).
- Air dispersion modeling is based on 1-hour maximum concentrations. It is possible that the potential level of exposure at any given site in a shorter timeframe could be greater than modeled. As previously noted, however, the initial NO<sub>2</sub> calculations were very conservative and the modeled impacts are far below the NAAQS and AEGLs standards for impacts to health.

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Remaining Covanta Plymouth Action Items

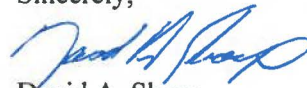
- Covanta will revise facility procedures and controls for injection of urea.
- Covanta has modified and will continue to review the auxiliary burner control systems to improve reliability and stabilize performance.
- Covanta will review the condition and positioning of roof vents and silencers in an effort to mitigate audible impact vent it is necessary to vent steam to atmosphere.
- Covanta will work with local municipalities to develop a formal notification process for any material event that could create public concern.
- Covanta will create an online reporting system to provide the public with up-to-date facility CEMS data.

On behalf of Covanta, I express our sincere apology to all those impacted or concerned by the event on June 10. Covanta continually strives to conduct our operations in a manner that is transparent and consistent with world-class operating standards. The June 10th event is not indicative of those standards, however we hope that the above information and the steps being taken are evidence of our desire to respond to the incident in an open, forthright, and responsive manner.

As previously stressed, we take our responsibility to conduct all of our business in an environmentally sound manner very seriously. Covanta must and will do better in the future to ensure that our high standards are upheld.

We recognize that you may have questions about the events beginning on June 10<sup>th</sup> after reading this letter and would welcome an opportunity to discuss the matter with you in more detail at your convenience. Please feel free to contact me directly at 610-940-6000, extension 105 or via cell phone at 215-350-8004 so that we can arrange a time to discuss any further concerns you may have.

Sincerely,



David A. Sharp  
Area Asset Director