



***Commonwealth of Pennsylvania
Department of Environmental Protection
Air Quality Program
Northeast Regional Office***

***Delta Thermo Energy A, LLC
Plan Approval # 39-00099A***

***Response to Public Testimony
Received at Public Meeting on October 30, 2013***

May 14, 2014

In accordance with 25 Pa. Code §§ 127.48, and 271.823, the Department of Environmental Protection conducted a public meeting on October 30, 2013 to discuss, answer questions and receive comments from the public about the Air Quality Plan Approval Application (# 39-00099A) submitted by the Delta Thermo Energy A, LLC, for the construction of emissions sources at a proposed energy production facility in the City of Allentown, Lehigh County, Pennsylvania ("Facility"). Representatives from the Department's Waste Management and Waterways and Wetlands Program also attended the meeting to respond to any comments or questions from the public related to their respective programs. The public meeting was part of the public participation process for the plan approval application. The Department also accepted written comments from the public during a public comment period that was extended twice based on requests from the public.

The proposed Facility will utilize municipal solid waste ("MSW") and sludge from the City of Allentown's Wastewater Treatment Plant as feedstock to produce an engineered pulverized fuel ("EPF") to generate 4 gross megawatts of electricity for internal use and sale. The facility will be designed with equipment capable of processing an average of 120 tons/day of MSW and 47 tons/ day of sewage sludge as feedstock. The facility will presort the MSW to increase the recovery of recyclables and use a Resource Recovery System ("RRS") to convert the feedstock into the EPF that will be combusted using a stoker-type combustor to generate steam, which in turn will power a turbine to generate electricity.

The following individuals commented or asked questions concerning the plan approval application for the proposed Facility. The list includes individuals who provided names at either the public meeting or with their written comments. Although some individuals may not have provided names with their comments, the Department included, and in some cases combined, the material comments it received on the application in this response document.

List of Individuals who submitted questions or provided comments concerning Plan Approval App. No. 39-00099A

1. Bonnie Bosco
2. Michele Bowers
3. Trudy Sclar
4. Evin Epstein
5. Albert H. Wurth Jr. Professor Lehigh University
6. Courtney Weintraub
7. Ellie McGuire
8. Patricia Ann Richard
9. Julie Edgar
10. Michael Ewall, ESQ
11. Christopher Cocca
12. Melissa Church, Land Air Water Legal Solutions, LLC
13. Mark Hammond, PA Waste Industries Association
14. Gerardo Caldero'n
15. Delta Consulting
16. John Kostick, Jr.
17. Diane Teti
18. David K McGuire, Phd

19. Alexander Gordon
20. Martin Boksenbaum
21. Yousif Jalali
22. Charles Baldwin
23. Laura Dobroski
24. Kristina Barr
25. Ryan Mahalsky
26. Sabrina Herbert
27. Matthew Moschella
28. Kelsey Barba
29. Richard Fegley
30. Eli D Camacho
31. Courtney Weintraub
32. Peter Crownfield

Public Comments and Department Responses

After reviewing the questions and comments presented to the Department by the public at the October 30, 2013 public meeting, as well as those presented during the extended public comment period, the Department is providing the following responses.

Comment #1: The Plan Approval Application fails to address that Delta Thermo's Facility should be aggregated with the Allentown Wastewater Treatment Plant ("Allentown WWTP").

Response #1: The Department has determined that emissions from the Facility should not be aggregated with emissions from the City of Allentown's WWTP for the purpose of determining Delta Thermo's obligations under the plan approval program, because the two facilities are owned and operated by entirely separate entities and therefore do not share "common control."

One of the elements required for making a single source determination and aggregating emissions is that the sources must be under the control of the same person (or persons under common control), 40 C.F.R. § 52.21(b)(6). In this case, the Department has determined that this element of the test has not been satisfied. The Allentown WWTP is owned by the City of Allentown and operated by the Lehigh County Authority, while the Delta Thermo Facility is owned and operated by Delta Thermo A, LLC, a wholly owned subsidiary of Delta Thermo Energy, Inc. There is no common ownership and the different entities do not exercise control over one another. Although there is a contractual arrangement between the two, it appears to have been an arm's length transaction that was voted on and approved by the City of Allentown. Accordingly, since this element has not been satisfied, aggregation of emissions from the two facilities is not appropriate.

Comment #2: The plan approval application failed to address the potential applicability of 40 C.F.R. Part 60, Subpart LLLL, standards of performance for new sewage sludge incineration units.

Response #2: The facility is not, and does not contain, a "sewage sludge incineration unit" within the definition of that term in Subpart LLLL. The facility has not proposed to construct an incineration unit that combusts sewage sludge to reduce its volume by removing combustible matter.

Comment #3: A proper evaluation of Subpart AAAA demonstrates that the facility is subject to Subpart AAAA and/or one of the other Waste-Related Combustion NSPS.

Response #3: Delta Thermo submitted an analysis of its proposed fuel product with its plan approval application. As part of the review of the application, as well as the comments received from the public on the application, the Department requested additional process information and sampling data from Delta Thermo. Delta Thermo submitted additional information requested by the Department and based on the Department's review of that information the Department determined that Delta Thermo has demonstrated that its product manufactured from the MSW and sewage sludge feedstock, after sorting, shredding and processing in its RRS, meets the legitimacy criteria in the Non-Hazardous Secondary Materials Rule at 40 C.F.R. § 241.3 (Standards and procedures for identification of non-hazardous secondary materials that are solid wastes when used as fuels or ingredients in combustion units), and can be considered a fuel. The Facility, therefore, is not subject to the Subpart AAAA NSPS requirements, or the other waste-related combustion NSPS requirements.

Nevertheless, the Department included emissions limitations, control requirements and emissions monitoring requirements that are at least as stringent as those that would be required under Subpart AAAA. Furthermore, the Department has included a sampling condition in the Plan Approval that requires Delta Thermo to demonstrate on an ongoing basis that the material they are producing as a fuel contains chemical constituents that are at levels comparable to those in traditional fuels (i.e. coal in this

case, which Delta Thermo used as the traditional fuel for comparison purposes during the plan approval application process).

As discussed above the company's manufactured fuel meets the legitimacy criteria and can be considered as a fuel, hence other waste related combustion NSPS do not apply.

Comment #4: Delta Thermo has not provided an accurate Best Available Technology ("BAT") analysis.

Response # 4: The company has proposed the following emission control technologies for removal of particulate matter, mercury and other metals, NOx, SOx, CO, VOCs, dioxins/furans, and opacity:

- PM: Cyclone and fabric filter with membrane bags, and wet scrubber
- NOx: SCR with ammonia injection
- CO: Combustion controls and optimum combustion temperature
- Metals: Cyclone and fabric filter with membrane bags, and wet scrubber
- SOx: Wet scrubber
- Mercury: Carbon adsorption, as well as wet scrubber and PM controls
- VOC: Carbon adsorption and Efficient Combustion Practices
- Opacity: Fabric filter, and wet scrubber

The Department has determined that the control technologies selected by Delta Thermo represent BAT for controlling emissions, consistent with the Department's top-down evaluation procedure.

Comment # 5: Delta Thermo has mischaracterized the results of its laboratory analyses.

Response # 5: The commenter cites the number of samples that Delta Thermo stated they collected in their plan approval application and questions why not all of the results from the sampling data was submitted with the application. The commenter further states that the results provided show that the product has wide variations of contaminant concentrations and is not homogeneous. Delta Thermo has indicated that the company collected 17 samples, 14 of which were either water samples or were only analyzed for heat content. The remaining samples were analyzed for general chemistry parameters and metals. Results of all 17 samples were provided with the Waste Permit application and Delta Thermo submitted the results of the samples analyzed for general chemistry parameters and metals with its plan approval application. After examining the results submitted with the plan approval application, the Department requested that Delta Thermo perform additional sampling for additional parameters. Results from that sampling were submitted to the Department on March 20, 2014 and reviewed in combination with the previous sample results.

Under the Non Hazardous Secondary Materials Rule ("NHSM Rule"), EPA allows for using ranges and national surveys of traditional fuel contaminant levels in making contaminant comparisons between manufactured fuel products and traditional fuels for purposes of analyzing the legitimacy of the manufactured fuel. (See 78 F.R. 9136 and 9144). Therefore, while there are ranges of contaminants in Delta Thermo's fuel product, the use of ranges in making the comparison to traditional fuel (i.e. coal in this case) is acceptable. Sampling results indicate that Delta Thermo's product is comparable to, within the range of or below contaminant levels found in coal. To ensure that this remains the case, the Department has included a sampling condition in the Plan Approval that requires Delta Thermo to demonstrate on an ongoing basis that the material they are producing as a fuel contains chemical constituents that are at levels comparable to those in traditional fuels (i.e. coal).

Comment #6: Use of improper assumptions regarding the disposition of metals and other hazardous air pollutants ("HAPs") contained in the waste.

Response #6: In its evaluation of the plan approval application, the Department considered the Facility's design parameters and performed a BAT analysis to ensure that emissions from the Facility will be the minimum attainable through the use of the proposed controls. The Department also included emission limits for metals and HAPs, compliance with which will be verified by annual stack testing requirements.

Comment # 7: Failure to meet the minimum requirements for municipal and county notifications.

Response # 7: Delta Thermo has complied with the requirements for notification of a plan approval application by submitting certified letters to the City of Allentown and Lehigh County. The letters submitted to the City and County clearly described the source that Delta Thermo plans to construct. Additionally, the letters state that there is a 30-day comment period which begins upon receipt of the notice.

Comment # 8: Failure to submit a permit application for its proposed on-site wastewater treatment plant.

Response # 8: The small wastewater treatment process within the Delta Thermo facility will discharge to the Allentown WWTP. Since it does not discharge directly to the waters of the Commonwealth, a Department permit is not required.

Comment # 9: Delta Thermo has attempted circumvention of the Department's regulations through staged permitting.

Response # 9: Delta Thermo originally stated that it intended to construct a research and development ("R&D") facility that fit under a R&D exemption to Department plan approval requirements. As the Department gathered additional information about Delta Thermo's proposal, and it appeared that certain aspects of Delta Thermo's proposed project changed, the Department informed Delta Thermo that it would need to submit a plan approval application to account for appropriate regulatory requirements. Delta Thermo did not initiate construction under the original RFD. Instead, following the Department's request, the company submitted a plan approval application, which has undergone an extensive review and public participation process. Therefore, there has not been any staged permitting or circumvention of Department permitting regulations.

Comment # 10: This proposed facility appears to be located in an environmental justice community and Delta Thermo has not completed a risk assessment that calculates the increase in cancer risks to local residents from its proposed operation.

Response # 10: The Department has developed an Environmental Justice Public Participation Policy in an effort to open or expand public participation opportunities for some permits in environmental justice areas during the permit application process. Under the Policy, the Department implements certain enhanced public participation procedures for such permits. There are certain "Trigger Permits" that the Department has determined regulate activities that may lead to significant public concern due to potential impacts on human health and the environment. The Department has developed a list of those permits, which under air permits include new major sources of hazardous air pollutants or criteria pollutants, and major modifications of major sources that could result in an increase in emissions or a facility expansion. There are also "Opt-In Permits", which may be eligible for enhanced public participation procedures in an environmental justice area where the Department believes such a permit warrants special consideration.

While the Delta Thermo plan approval is not a Trigger Permit, the Department elected to treat it as an Opt-In Permit and implemented enhanced public participation procedures, such as providing public notice of public participation opportunities to the community in Spanish, having a public meeting with a Spanish

translator present, preparing a summary of the material terms of the plan approval in Spanish and making it available in the community, and making information about the Plan Approval Application available in the environmental justice area. The Department also extended the public comment period on two occasions in an effort to expand public participation on Delta Thermo's application. By taking these steps, the Department accounted for the fact that the Facility is being proposed in an environmental justice community.

In terms of impacts from the Facility on the surrounding area, the Department included low emissions limits in the Plan Approval, with which Delta Thermo is required to comply and the facility will have an emissions control train designed to control emissions from the facility in accordance with BAT requirements. Stack testing and continuous emissions monitoring is also required to ensure compliance with emission limits.

Comment # 11: If 40 CFR Part 60, Subpart AAAAA is not applicable to the proposed facility, then 40 CFR Part 60, Subpart Dc is applicable to the facility.

Response # 11: Subpart Dc establishes standards of performance for steam generating units primarily that combust fossil fuels or other fuels in combination with fossil fuels. Because Delta Thermo's facility will not burn any fossil fuels, Subpart Dc does not establish standards that apply to the facility.

Comment #12: It is likely that total VOC emissions from the facility will significantly exceed 50 tons per year and the facility would therefore be subject to Title V Operating Permit and non-attainment new source review requirements.

Response #12: The facility is subject to a 4 ton/year VOC emission limit in the plan approval. Consequently, the facility will be a minor facility and will not be subject to major NSR or be required to obtain a Title V Operating permit. The facility is also required to stack test under the maximum firing rate to demonstrate that it will operate in compliance with this limit and will have carbon adsorption control for VOC emissions.

Comment #13: Comment letters submitted by some members of the public express concern for emissions of pollutants from the facility and the impact on air quality.

Response #13: The facility will be required to meet low emission limits for a wide range of pollutants and is classified as a minor source of emissions, as opposed to a major source, of which there are a number that operate in and around the Lehigh Valley. Delta Thermo will be required to demonstrate compliance with the emission limits in the plan approval by performing a stack test on an annual basis. The facility will also have continuous emissions monitoring for HCL, CO, CO₂, SO₂, H₂O, O₂, NO_x, ammonia, and opacity and have system monitoring to ensure that operating conditions remain within a ranges that will achieve compliance with restrictions in the plan approval on an ongoing basis.

Comment # 14: What will happen with ash from the combustion process?

Response: # 14: Delta Thermo will analyze the ash to determine whether it qualifies for beneficial reuse and will reuse any ash that so qualifies. The company believes that the ash will be eligible for beneficial use in cement manufacturing or for road construction. If any ash does not qualify for beneficial reuse, that ash will be collected in a sealed roll-off dumpster and hauled off-site for proper disposal.

Comment # 15: Commenter states, the business aspects of the proposed project are negative.

Economic benefits will not be forthcoming. This project involves a large government investment without private capital.

Response # 15: An evaluation of the financial aspects of the project was not part of the Department's review of the plan approval application. The Department's understanding is that a contract containing financial terms of the agreement between the City of Allentown and Delta Thermo was negotiated with local Allentown officials, and on March 8, 2012, the Allentown City Council approved the contract. This vote reversed an earlier vote against approval. The Department's plan approval application review was focused on plant operations and emissions from the proposed facility. It did not involve an economic analysis of the proposed facility.

Comment # 16: Regarding Community Relations, Commenter asks what is Delta Thermo doing to foster its relationship with Allentown and do they really have sincere interests and concerns over public health in mind. If so, how?

Response # 16: This was not part of the Department's plan approval application review process and is a question for Delta Thermo but the Department encourages Delta Thermo to reach out to the surrounding community and make an effort to inform community members about operations at the facility.

Comment # 17: Emissions and Emission Controls Comments

- a. Several Commenters expressed concern over Dioxin emissions and asked about the effectiveness of proposed controls designed to control heavy metals.
- b. Commenter asks how you empty particulate from the baghouse.
- c. Commenter expressed concern over high CO₂ emissions.

Response # 17: Delta Thermo has stated that it expects its dioxin/furan emissions to be limited since: (i) it is not a typical mass burn facility or waste incinerator that simply takes in municipal solid waste (MSW) and/or sludge, shreds or sorts it based on size, and burns it. Instead, Delta Thermo takes in MSW that has been pre-sorted under Allentown's mandatory recycling program, which will remove a significant amount of recyclable material from the waste stream. That MSW and sludge (feedstock) is then further sorted at the Delta Thermo facility for the removal of various bulk and hazardous items in accordance with the facility's Material Separation Plan, shredded and placed in the RRS. The RRS will employ a hydrothermal decomposition process that will remove chlorine and chlorinated salts from the feedstock and reduce the chance of dioxin formation. The combustion chamber will then operate at a high temperature (1,850°F), which is above the temperature ranges for dioxin and furan formation. In addition, the carbon adsorption emissions control system is designed to remove dioxin and furan from the exhaust stream.

The Department has included a dioxin limit in the plan approval, which is the same limit EPA has established for new MSW combustion units in 40 C.F.R. Part 60, Subpart AAAA, even though the Department has determined that Subpart AAAA does not apply to the proposed Facility since it will be burning processed fuel and not a waste. The limit EPA has set for dioxin emissions from MSW combustion units is based on "maximum achievable control technology" or "MACT," which reflects the degree of emission reduction achieved by the best controlled similar sources in the source category.

The facility will also be equipped with a continuous emissions monitoring system and continuous parametric monitoring systems "CPMS" for temperature, scrubber water flow rate and pressure drops across several components to confirm proper functioning of the air pollution control system. Periodic stack testing will be performed in which dioxin and furan levels will be measured, along with the CO levels and parameters measured in the CPMS. These will confirm that, as long as the system functions in accordance with the parameters being continuously monitored, dioxin and furan levels will not exceed those found in the stack tests and will not exceed the limits in the plan approval.

Metals will be removed by the baghouse and the scrubber. The scrubber will remove heavy metals in vapor form. Within the baghouse, the built-up filter cake is periodically shaken or blown off of the bags and collected in the hopper beneath the bags. Dust from the hopper is drummed and disposed of off-site. Baghouses are widely used in various types of facilities for the removal particulate and metals from emission streams

The CO₂ emissions from coal combustion range from 4,810 to 6,250 pounds per ton of fuel burned, whereas CO₂ emissions from the Delta Thermo Facility are calculated to be 3,306 pounds per ton. Therefore, in comparison to coal, CO₂ emissions from the Facility are expected to be lower on a per ton basis.

Comment # 18: Commenter asks about enforcement and if DTE causes pollution, what guarantees are there that any violations will be stopped?

Response # 18: The Company will be required to maintain and comply with the terms of its plan approval and any operating permit issued by the Department. It will also be required to comply with the Pennsylvania Air Pollution Control Act ("APCA") and Department's Air Resources Regulations. The plan approval, APCA and Regulations contain reporting and record keeping requirements with which Delta Thermo must comply. That information will help the Department to ensure that the facility is operating in compliance with applicable requirements. Department personnel will also conduct periodic inspections of the facility and will respond to and investigate complaints from citizens regarding facility operations. Citizens may file complaints with the Department by calling 610-861-2070 or 570-826-2511. The Department's policy is to log, respond to and investigate complaints made by citizens in a timely manner. Complaints made after regular office hours are responded to and investigated by Department regional emergency response team members. Noncompliance may result in an enforcement action against the company for any violations.

Comment # 19: Experimental Nature of Facility

- a. Commenter states that the Environmental Advisory Council is a lot of smoke and mirrors and that there is uncertainty with the proposed project since it is the first of its kind in the country. DTE can't guarantee that dangerous events or emissions won't slip through.
- b. Commenter states that you are proposing to test this system with people's health. Commenter further expresses concern over Dioxin emissions and that the project is full of uncertainty. All emissions should be continuously monitored.
- c. Commenter asks what DTE's plan is for making the facility better 3 years from now?

Response # 19: Although the facility will be the first of its kind in the United States, Delta Thermo has indicated that the technology has been used for some time in both Europe and Japan. Generally, in terms of process flow, the proposed waste handling procedures are not experimental in nature and have been reviewed and permitted by the Department's Waste Program. In the next step of the process, the hydrothermal decomposition of the mixed MSW and sewage sludge takes place in the RRS units. While this is the newest and a very important part of the process, Delta Thermo had a small scale RRS unit operating in Atlantic City, NJ, where it produced samples of its EPF. The larger scale operation proposed for Allentown is like the RRS unit used at the Atlantic City pilot project, except that in Atlantic City, Delta Thermo used a centrifuge and not a dryer to dry the material after it went through the RRS. A dryer will be employed at the Allentown facility, rather than a centrifuge, which should produce dryer material with a better BTU value.

This material produced from the RRS will be combusted in the combustion chamber, so the contents of that material are very much of interest to the Department. Delta Thermo submitted sample results from that material with its plan approval application; however as part of its review, the Department requested that Delta Thermo provide additional sampling data to show that the material they produce from the RRS

has meaningful heating value and contains contaminants or groups of contaminants at levels comparable in concentration to, or lower than, those in a traditional fuel (i.e. coal in this case). This is a requirement in the federal Non-Hazardous Secondary Materials Rule at 40 C.F.R. § 241.3(d)(1)(iii). Delta Thermo produced additional sampling data, and based on its review of that data, the Department believes that the material Delta Thermo will produce from the RRS will have contaminant concentrations comparable to coal. To ensure that this remains the case, the Department is requiring ongoing sampling of the product to ensure that it maintains contaminant concentrations at levels comparable to or lower than those in coal.

In the next step of the process, the facility will use a stoker combustor, a type of combustor used throughout the world. The facility also will employ state-of-the-art air pollution control systems, including SCR with ammonia injection, a cyclone and fabric filter with membrane bags, a wet scrubber and carbon adsorption, all of which are widely used air emissions control technologies and reflect best available technology. Moreover, Delta Thermo will install a continuous emissions monitoring system to monitor HCl, CO, CO₂, SO₂, NO_x, ammonia (in conjunction with O₂ and H₂O), and opacity. The Department has included appropriate conditions in the plan approval applicable to this monitoring program in its final plan approval. So, while there are aspects of this process (the RRS) that are new, the Department has included provisions in the plan approval to ensure proper operation and regulation of the RRS and overall plant operations.

With regard to the comment on Delta Thermo's plans for making the facility better three years from now, the Department reviews the information presented in the application in making its determination on the plan approval. The company may make certain changes at the facility in the future to improve operations, and depending on what those changes are, they may need to go through a permitting process. Improvements over time are not that uncommon for companies. At this time, questions regarding the plans or details of any such proposed improvements are more appropriate for Delta Thermo to answer.

Comment # 20: Fuel Quality

- a. Commenter asks what is the BTU difference between the waste DTE is proposing to burn and coal?
- b. Commenter wants to know how the fuel and the BTU content are impacted by moisture. How does moisture affect the system?
- c. Commenter states the comparison to coal is spurious.

Response # 20: The NHSM Rule provides, in part, that the material produced must have a meaningful heating value and be used as a fuel in a combustion unit that recovers energy. 40 C.F.R. § 241.3(d)(1)(ii). EPA has stated that, for purposes of meeting fuel legitimacy criterion, it would consider material with an energy value greater than 5,000 Btu/lb as fired to have a meaningful heating value, leaving room for the possibility of lower heating values if the unit can cost effectively recover meaningful energy from the fuel material. 54 Fed. Reg. Vol. 76, p. 15541 (March 21, 2011). Delta Thermo submitted several different sample results showing BTU values between 6,880 and 9,920.

Moisture reduces thermal (BTU) content for all substances. This is why the process employed at the facility will use a dryer to remove moisture before the EPF is combusted. As noted above, the samples Delta Thermo used for heat value sampling purposes were produced at the Atlantic City, NJ facility, which used a centrifuge to dry the material and likely left more moisture in the material than would be left after going through a dryer. The dryer at the Allentown facility will remove more of the moisture content, which will likely increase the BTU value and improve the thermal content of the fuel.

With respect to the comment suggesting that the comparison to coal is not valid, the NHSM Rule provides that the fuel material produced must contain contaminants or groups of contaminants at levels comparable in concentration to or lower than those in traditional fuel(s) which the combustion unit can burn. 40 C.F.R. § 241.3(d)(1)(iii). In this case, Delta Thermo elected to use coal as its traditional fuel for comparison. To show that the contaminant levels are comparable or lower than those in coal, Delta Thermo submitted sampling results with its original plan approval application. Those sample results showed the following:

Constituent	Delta Thermo's Fuel ^{a,b}	Coal ^{c,d}
Heating Value (BTU/lb.)	6,880-9,920	6,900-10,750
Sulfur, % (wt.)	0.2	2.4
Ash, % (wt.)	9.4	11.9
Nitrogen, % (wt.)	1.06	1.5
Arsenic, mg/kg	<0.791 - 10	123 – 2,030
Cadmium, mg/kg	<0.158 - 3.67	13 – 77
Mercury, mg/kg	0.705 (1 sample only)	103 – 2,660
Nickel, mg/kg	8.92 - 97.2	90 – 1,330
Selenium, mg/kg	2.57 - <3.71	13 – 1,950

- a Basic Engineering Report, Jasper GmbH, Quickborn, Germany, November 15, 2012 (as revised on April 17, 2013).
- b Analytical reports by QC Laboratories, Southampton, Pennsylvania, dated February 29, 2012; March 1, 2012; and August 3, 2012.
- c Combustion Evaluation in Air Pollution Control, Attachments 3-11 and 3-12, Office of Air Quality Planning and Standards, U.S. EPA, October 1978.
- d Table 4, Trace Element Content of Pyrite Grains in Pittsburgh #8 Coal, Trace Metal Content in Coal and Ash as Determined Using Scanning Electron Microscopy with Wavelength-Dispersive Spectrometry, Katrinak, K. and Benson, S., University of North Dakota.

The Department was not entirely satisfied with this data and requested additional sampling data from Delta Thermo to support the company's position that its material satisfied the legitimacy criteria in the Non-Hazardous Secondary Materials Rule and was similar to coal. The additional data was submitted on March 20, 2014 and included comparisons for heating value, metals, non-metallic elements, HAPs, PAH's and SVOCs. Results were found to be comparable to, within the range or less than within the ranges of contaminants found in coal. To ensure that the EPF retains these characteristics, the Department has included a condition in the plan approval requiring periodic sampling of the EPF to show that levels of contaminants continue to be within the range or less than those found in coal. Based on the data submitted, the Department believes that the comparison to coal is valid.

Comment #21: Commenter asks about the Resource Recovery System and what occurs in the system.

Response #21: Five Resource Recovery System (RRS) vessels will be installed at the facility to convert the feedstock to pulverized fuel (PF) by Hydrothermal Decomposition, on a batch basis. An approximately 2:1 mix, by volume, of shredded municipal solid waste and sludge (feedstock) will be supplied to the RRS units, which are operated as batch units under high pressure steam to produce clean renewable pulverized fuel ("PF"). Each of the RRSs will be fed separately by using an overhead crane. The crane will carry the materials from the mixed feedstock pit to the RRS's hoppers. When Hydrothermal Decomposition is complete for a batch, the high pressure steam is released to a cyclone condenser. PF from the RRS contains 50 % moisture. Moisture from PF will be removed by drying using excess heat from the facility.

Comment # 22: Health

- a. Commenter cites general health concerns.
- b. Commenter says they are now terrified after attending the Public Meeting and seeing the way it was being conducted. Commenter further expressed concern over Dioxin emissions.

Response # 22: Based upon the review of the plan approval application submitted by Delta Thermo, the final plan approval will contain the required emission limitations and operating conditions that will be

verified through monitoring and reporting requirements as specified by the appropriate air quality regulations that protect public health. The Comments about dioxin are addressed above in response #17.

Comment # 23: Industrial Classification: Commenter brought up the North American Industry Classification System (NAICS) and Standard Industrial Classification (SIC) codes for the facility provided in the application noting inconsistencies or errors in how DTE represented, how the facility should be classified and pointing to use of a code for solid waste combustors and incinerators when DTE is stating that it is not a typical incinerator/mass burn facility.

Response # 23: There does not appear to be an industrial code that fits the Project more precisely. The project is not, however, a typical incinerator/mass burn facility, in that it does not simply take in MSW and sewage sludge and combust it after basic sorting and/or sizing operations. Delta Thermo incorporates the use of the RRS and a drying system, which has yielded lab results showing that the material produced, contains contaminants within the range of those found in coal. To ensure that this remains the case, the Department has included a condition in the plan approval that requires Delta Thermo to periodically test the EPF produced to show that it will continue maintain contaminants at levels within the range or less than those found in coal, in accordance with the NHSM Rule legitimacy criteria.

Comment # 24: Monitoring

- a. Commenter wants to see DTE provide monitoring reports to PADEP on a monthly basis and requests a permit condition requiring the company to submit a monthly monitoring report.
- b. Commenter wants continuous monitoring and wants it sent to a website in real time.
- c. Commenter wants to know when the facility fails or experiences a failure, how will people in the community know?
- d. Commenter has no confidence in the Supervisory Control and Data Acquisition (“SCADA”) technology.
- e. Commenter wants to know whether the company will make monitoring information from the SCADA system available to the public and states that the public wants real time continuous emissions monitoring.

Response # 24: The Department had included emissions monitoring and reporting requirements in the plan approval in accordance with Chapter 139 of the Department’s regulations governing emissions monitoring and testing. Under these provisions, Delta Thermo will be required to conduct continuous emissions monitoring and will be required to perform stack testing annually at the Facility. Parametric monitoring will also be employed to ensure that operating conditions are maintained in a manner that helps ensure emissions are kept at predictable and consistent levels. Emissions monitoring and stack testing requirements being imposed are similar to requirements imposed at other industrial facilities in the area and throughout the Commonwealth, and will provide reliable emissions data to ensure that the Facility is operated in compliance with limits in the Plan Approval. Enforcement action may be taken in the event testing, monitoring and emission limit requirements are not complied with. Delta Thermo is willing to submit monthly emission reports to Allentown City.

Comments # 25: Facility Relocation/Environmental Justice

- a. Commenter states she is a concerned citizen who recently moved to Allentown and she advocates for relocation of the Facility.
- b. Commenter notes that the proposed project is close to a low income housing/environmental justice area.
- c. Commenter suggests that the Citizens Advisory Board have members from the Spanish/Latino Community since this is an Environmental Justice Area.
- d. Commenter expressed concern over the fact that public meeting and draft plan approval were not translated into Spanish.

- e. Commenter brings up flooding concerns and the possibility that high water levels during a flooding event could impact the facility and nearby waterways.

Response # 25: The City of Allentown selected the location for the Facility on Kline's Island, next to the Allentown WWTP. Allentown City Council voted on the location, as well as the contract between Delta Thermo and the City. The Department's understanding of why this location was selected is that it is an existing industrial area in close proximity to the Allentown WWTP, which is a source of feedstock for the Facility.

With regard to comments received raising environmental justice concerns, the Department took these concerns into consideration as part of its review of the Plan Approval Application and implemented procedures during the public participation process to address these concerns. This issue is discussed in response to Comment #10 above. The inclusion of a representative from the Environmental Justice Community on the Citizen's Advisory Board was not part of the Department's review of the plan approval application.

In regards to flooding, as shown on the Flood Insurance Rate Maps for Lehigh County, Pa, Map Number 42077C0252F (Panel 252 of 340), effective July 16, 2004, the site lies within Zone X. Zone X is defined as areas determined to be outside of the 500 year floodplain. The 500 year flood is an event assumed to have a 0.2% chance of occurring in any given year. Therefore, the possibility of a flooding event impacting the facility is very low and it is not expected that the facility will impact any nearby waterways.

Comment # 26: Ordinance

Commenter discusses the ordinance that he and others tried to pass and inquired about how the community could pass local requirements that are more stringent than state rules and regulations governing air pollution.

Response # 26: The Department previously addressed the adoption of wide ranging local requirements that are more stringent than state rules in the context of the municipal ordinance that was proposed for the City of Allentown. (Bill 26 – the City of Allentown Clean Air Ordinance). The Department has taken the position that the adoption of such an ordinance governing the proposed range of activities would be preempted under the Pennsylvania APCA. The Department acknowledged that while the City has the authority to enact ordinances under Section 12(a) of the APCA, 35 P.S. § 4012(a), that authority is limited. Only counties of the first and second class are authorized to enact ordinances as comprehensive as what was being proposed for Allentown and only with the approval of the Department. See 35 P.S. § 4012(b). The Lehigh County Court of Common Pleas ultimately agreed with this position, and its decision was appealed to the Pennsylvania Commonwealth Court. Although the Commonwealth Court upheld the Lehigh County Court's decision on procedural grounds, Judge Quigley commented that had the matter been decided on the merits, "[i]t is apparent that the trial court reached the correct conclusion, and we would have affirmed the trial court's order." The permitting and compliance requirements in the APCA and regulations promulgated thereunder provide strong authority for the Department to regulate activities at the Delta Thermo facility and ensure that it operates in accordance with the conditions in its permit.

Comment # 27: Public Meeting v. Hearing

- a. Commenter states public meeting is not a substitute for a public hearing.
- b. Commenter states that a public meeting is not a substitute for a public hearing and that notice of the meeting should have been posted in other places.
- c. Commenter states that a public hearing is necessary.

Response # 27: In the late fall of 2013, the Department was contacted by one or more individuals who requested a public participation process beyond the ability to provide written comments on the draft plan approval. There were not a substantial number of requests at the time. The Department evaluated these requests and the additional public participation options that it had, which included conducting a public meeting or public hearing. Considering the nature of the project, the Department determined that a public meeting would be a better option, since it would allow for presentations by the Department and the company designed to provide the public with information on the proposed project and the permitting process. The public meeting format also allows for the public to ask questions and receive responses from representatives of both the Department and Delta Thermo. Under the typical public hearing process, the type of informational presentations and question and answer exchange that took place at the Department's October 30, 2013 public meeting would not take place. Instead, the public would simply be afforded an opportunity to provide testimony, which would be recorded, considered and responded to in a comment response document at some point in the future.

Under the public meeting format that the Department selected, the Department also made note of comments and questions received and has now prepared this comment response document to address those questions and comments. The Department also extended the public comment period twice, allowing for the public to provide written comments up through December 16, 2013, more than 3 months after notice of the draft plan approval was first published in the Pennsylvania Bulletin on September 7, 2013.

The Department published notice of the public comment periods and public meeting; it made copies of the draft plan approval available at regional offices in Bethlehem and Wilkes-Barre, online on the Department's website and at locations in the community; and it took environmental justice issues into consideration and translated the material terms of the draft plan approval into Spanish and made them available in the community. The Department believes that the steps it took to inform the public about the proposed project and the available public participation procedures, its efforts to make relevant documents available, the public meeting format that it implemented, and the extended comment periods have provided sufficient opportunity for the public to comment on the plan approval and allowed for enhanced public participation that was equal to or better than what would have been provided if the Department held a public hearing.

Comment # 28: Sorting Process

Commenter asks what the sorting process at the facility is and whether recyclables will be removed? If so, what recyclables and specifically, will plastics be removed?

Response # 28: When the municipal solid waste arrives at the facility, bulk items such as mattresses, furniture, and the like will be removed. The waste will move on belts at a rate of 8 tons per hour and employees will manually remove glass, metals, and ceramics. This will enhance the City's existing recycling programs by removing additional materials from the waste stream. While plastics will not be removed, Allentown recycles plastics as part of its mandatory recycling program. Remaining plastics that arrive at the Facility will be pretreated in the Resource Recycling System (RRS) units, which are operated as batch units under high-pressure steam to convert the feedstock into an engineered pulverized fuel. As stated above, sampling results of the EPF have shown that it contains contaminant levels within the ranges of those found in coal.

Delta Thermo will recycle the recyclable items removed from the waste. Oversized bulk waste item that cannot be recycled will be resized by a primary bulk shredder or will be taken to an off-site facility for disposal.

Comment # 29: Stack Information

Commenter asked why is there no stack shown in the diagrams or pictures of the facility in the Power Point? Commenter also asks about stack height.

Response # 29: The Facility will have a stack that extends 2.5 feet above the roof line. The peak of the roof is 57.5 feet high.

Comment # 30: Support for DTE

- a. Commenter Supports DTE.
- b. Commenter commends DTE for trying to solve problems like landfilling of waste and commends them for using local workers and tradesmen in the Lehigh Valley.

Response # 30: Comments are duly noted.

Comment # 31: Truck traffic and traffic related accidents

Commenter is concerned about diesel emissions, PM 2.5 impacts and traffic related accidents.

Response # 31: Truck traffic emissions and traffic accidents are not a component of the Air Quality permitting process. Please see the discussion of PM 2.5 issues below in Response #33

Comment # 32: Waste Sourcing

Commenter asks whether waste will be or can be brought in from other areas in the event the supply from Allentown is insufficient.

Response # 32: The Company responded that it has an agreement with local universities to provide MSW in the event there is a shortage from Allentown City. Evaluation of such events is not a component of the Air Quality Plan Approval process.

Comment # 33: Wastewater

Commenter asks what are the possibilities that pollutants from the process will go to the wastewater treatment plant and be discharged to the Lehigh River?

Response: # 33: The Delta Thermo Facility wastewater must meet City and State standards on various levels before it can dispose of that pretreatment water from the Facility to the Allentown Waste Water Treatment Plan for further treatment. No waste water from the Facility will be discharged directly to the river.

Comment # 34: The Department must review PM 2.5 emissions under the Minor New Source Review ("NSR") program and dispersion modeling for PM 2.5 emissions is required.

Response # 34: The Department has reviewed Delta Thermo application under its minor new source review program and the facility is subject to BAT requirements for particulate emissions. The company is required to install and operate cyclone, baghouse and scrubber technology to control particulate emissions from the Facility. These controls represent BAT for particulate emissions and total PM emissions, including PM₁₀ & PM_{2.5}, will be less than 1.5 tons/year. At this emission rate the facility is not subject to additional control requirements. Facility is not a major facility for particulate emissions.

Comment # 35: PA bulletin notices for the plan approval were defective in that the business name was incorrect and did not belong to any existing business entity in Pennsylvania.

Response # 35: The commenters contend that because Delta Thermo's name in the Bulletin notice was missing a comma (or in one instance, the "A") that the notice was defective and that re-notification of the

public comment period was required. The Department has determined that re-notification is not required and that there were sufficient opportunities for public comment, including an extension of the public comment period until December 16, 2013 and a public meeting.