

International Tie Disposal, LLC – Project Tie

Hearing Officer’s Report and Recommendations

Virtual Public Hearing

March 1, 2021

Public Comment Period:

January 28, 2021 through March 3, 2021

Pertaining to Permit Application No.7700101.20A and
Draft Air Quality Permit No. 10676/R00 for:

International Tie Disposal, LLC - Project Tie
174 Marks Creek Church Road
Hamlet, NC 28345
Richmond County
Facility ID No. 7700101
Classification: Synthetic Minor

Hearing Officer

Brad Newland P.E., CPM

Regional Supervisor, Wilmington Regional Office

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I. Background

On June 16, 2020, the North Carolina Department of Environmental Quality (DEQ), Division of Air Quality (DAQ), received an initial air quality permit application (App. No. 7700101.20A) from International Tie Disposal, LLC - Project Tie (ITD). The purpose of the application was for a new air quality permit (Permit No. 10676/R00) to construct and operate a new railroad tie/virgin wood pyrolysis, processing and biochar packaging facility. The facility would be located at 174 Marks Creek Church Road, Richmond County, North Carolina, which is in the jurisdiction of the DAQ Fayetteville Region (FRO).

II. Air Quality Permit Application and Permit Review

The DAQ's mission is to work with the state's citizens to protect and improve outdoor, or ambient, air quality in North Carolina for the health, benefit, and economic well-being of all. To accomplish this mission, the DAQ requires industrial facilities to apply for and receive air quality permits prior to construction and operation of the air pollution sources and air pollution control equipment to ensure compliance with all applicable federal and state regulations.

The proposed facility will manufacture biochar using the process of controlled heating known as pyrolysis. The pyrolysis process volatilizes unwanted chemical components to produce the carbonaceous biochar. The facility will have 426 kilns and 62 natural gas-fired afterburners onsite. The proposed facility will operate 24 hours per day, 7 days per week, 365 days per year. To maintain emissions below the Title V thresholds, only 160 of the 426 kilns will operate daily. This will be accomplished by the facility initially firing 62 kilns in the first of 3 daily 8-hour shifts. As the first of the 62 kilns finish its 7 to 8 hour pyrolysis process, its afterburner is removed and placed on the next kiln starting its pyrolysis process. This process will continue throughout the day until a total of 160 kilns have completed the pyrolysis process. This would equate to a maximum of 58,400 kiln operations (160 kilns per day for 365 days per year) per 12 consecutive month period.

The proposed facility will receive logs (untreated lumber) and creosote-treated railroad ties by railcar in the tie unloading and sorting area. Received materials will be offloaded, sorted, and stacked in the raw material storage area. Raw material staging and handling will be performed using a tracked excavator with a handling arm. Raw material from the storage area is then loaded onto a conveyor and fed into a Chomper (Crusher) where it is reduced in size to 3 to 4 inch by 12 to 18-inch and then loaded by conveyor into individual kilns in the raw material staging area. The crusher is located inside an intermodal shipping container that is open on both ends to accommodate the conveyors. Empty kilns are transported to the kiln loading area for charging with crushed logs (untreated lumber) or crushed ties. The capacity of each kiln will be approximately 2,000 pounds of woody raw material.

A kiln loaded with raw material will then be transported to the processing area using a wheel-loader. Each loaded kiln is then fitted with a removable, refractory-lined exhaust stack/afterburner (0.125 MMBtu/hr natural gas-fired). This exhaust stack allows the mounted

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afterburners to create a tight seal with the kiln. The afterburner is then started and brought up to operating temperature. Pyrolysis within the kiln is initiated by the natural gas-fired kiln burner that is a component of the kiln itself. The kiln burner is direct fired (natural gas) and has a maximum heat input capacity of 0.0078 MMBtu/hr. Once the pyrolysis is initiated, the kiln burner is turned off as the pyrolysis process is self-sustaining and does not require additional natural gas combustion. The kiln's integral seal-cover lid is then opened, and the afterburner is used to control kiln emissions. The pyrolysis processing period is estimated to last 7 to 8 hours.

At the end of the pyrolysis operation the kiln's integral seal-cover lid is closed. Note that this integral seal-cover lid must be immediately closed after the exhaust stack/afterburner is removed to keep the biochar from combusting and resulting in ash rather than biochar, as desired. The exhaust stack/afterburner then is removed and placed on an adjacent kiln, already loaded with raw material, in preparation for firing. Exhaust stacks/afterburners are handled by a mid-sized loader. The kiln that has completed pyrolysis is then moved to the cooling area for a period for approximately 10 to 18 hours. There are no emissions from the kilns during the cool-down period.

After the cool-down period, the kiln containing biochar is transported to the biochar sorting processing line by a mid-sized wheel loader. Up to ~500 pounds of biochar will be produced by a single kiln pyrolysis process. The biochar is then loaded into a hopper equipped with a hood and a dust collection capture vent to capture fugitive dust. This biochar sorting/processing line is located inside multiple intermodal shipping containers that are sealed with foam gaskets. Each container is equipped with dust collection vents that vent to one of two external bagfilters. The line contains a series of conveyors and is equipped with the following equipment:

- A magnet (to remove bolts and spikes left in the ties through the processing)
- A crusher to reduce the size of the biochar to no greater than 3 inches
- A de-twigger which removes any large unconverted wood
- A hammermill to reduce the size of the biochar to no greater than 1 inch
- A drum magnet followed by a 3 deck open screener to separate the biochar into 4 sizes.
- A destoner to separate the good biochar from the smaller unconverted wood
- A roller mill to further reduce the size of the biochar

The biochar moves into a bucket elevator and up to a screener followed by small hoppers in the top of the bagging container. The biochar is bagged in super sacks which are moved by Bobcat loader to the biochar storage area for loading onto railcars. Packaged product will be loaded directly onto pallets for shipment by rail offsite. Product trucks will travel to and from the biochar sorting processing line via the product transport route. Emissions from truck transport are shown in the haul road emission calculations.

Other sources of emissions of regulated pollutants may include small fuel tanks, propane storage tanks, and maintenance activities such as welding. These sources, individually and collectively,

were determined to be negligible sources of emissions and are exempt from permitting requirements.

III. Notice of Public Hearing/Public Meeting

At the discretion of the Director of the DAQ, a notice of the draft air quality permit was posted on the DAQ Website on January 28, 2021 and in the Richmond Daily Journal on January 30, 2021 and began a 30-day comment period. Likewise, a notice of the draft air quality permit and permit review were posted on the DAQ public engagement webpage, along with a press release detailing the online meeting, online hearing, and ways to comment. Copies of the permit application, air quality permit review and draft air quality permit were also made available at the DAQ's FRO. These documents and other information were available for public review throughout the comment period. The public comment period ended on March 3, 2021.

Per the recommendation of the draft Environmental Justice Report, outreach letters were sent to sensitive receptors, local officials, and the Lumbee Tribe that detailed the project and how to submit comments, as well as dates for the meeting and hearing. Emails were also sent to concerned citizens and local community groups detailing the project and meeting/hearing dates.

Due to the COVID-19 pandemic and the associated safety and social distancing concerns, the DAQ determined that it would be appropriate to hold the Public Hearing in a virtual, online format rather than an in-person public hearing in a public meeting place, which would have amounted to a mass gathering and potential "super-spreader" event. In addition to the Hearing, a public information meeting was held online. The virtual, online Public Meeting was held on February 22, 2021 and the online Hearing was held on March 1, 2021 through the WebEx online platform. Additionally, a dedicated telephone number was provided to give citizens the ability to call in to the hearing and make comments if they had either no internet access or a poor internet connection.

The Public Meeting was hosted by Mr. Michael Pjetraj, Deputy Director of the DAQ. Mr. Jeffery Cole, Permitting Engineer of the DAQ Fayetteville Regional Office (DAQ/FRO), gave a presentation of the air quality permit for the proposed International Tie Disposal, LLC - Project Tie facility. Citizens were permitted ask questions of Mr. Cole and Mr. Pjetraj, as the Public Meeting was not a formal part of the Public Hearing.

The Hearing Officer for the Public Hearing was Mr. Brad Newland, Regional Air Quality Supervisor for the DAQ's Wilmington Regional Office (WiRO). Unlike the Public Meeting, citizens could make comments during the Public Hearing but, were not allowed to ask questions of either the Hearing Officer, Mr. Pjetraj, or Mr. Cole. During the Public Hearing, citizens were allowed up to 2 minutes to speak to provide equal opportunity. The final public comment period ended at 5pm on March 3, 2021.

IV. Overview of Public Comments Received

Over the duration of the public comment period, 54 written comments were received. Thirty-three oral comments were made during the March 1, 2021 virtual public hearing. Twenty-three oral comments were left in the voicemail box dedicated for public comments. Out of a total 54 written comments, 13 were in favor while 41 were in opposition. Out of a total of 56 oral comments, 13 were in favor and 43 were in opposition. In the case of both favorable and opposed comments, a high percentage of the commenters provided both oral and written comments. Some commenters provided multiple comments in both forms (written and oral).

All comments received during the public comment period, both oral and written, have been evaluated and copies of all written comments and any attachments to those written comments are available to the public upon request.. All comments were given equal consideration, whether they were written, left orally in the voice mail box designated for comment, or made orally at the virtual public hearing. The comments received, both oral and written, expressed similar approval or concerns. Rather than addressing each comment on an individual basis, the comments were first separated based on whether they seemed to approve or oppose the issuance of the air quality permit. Once separated into these two very broad categories, the comments were further separated based on the expression of various similar points of approval or opposition to permit issuance. It is these various similar points that will be addressed by this Hearing Report.

Finally, several commenters, including elected public officials, trade group representatives, consultants, and representatives of environmental advocacy and policy organizations, provided significant written technical, regulatory, and/or public policy comments. Rather than addressing those written comments on a commenter-by-commenter basis, the Hearing Report will also group similar comments together to address them. Other than the summary above, no differentiation will be made regarding whether a comment was provided orally or in written form.

Several public officials spoke at the Public Hearing or provided written comments, some indicated their approval of the proposed International Tie Disposal, LLC - Project Tie facility and issuance of the air quality permit. Others provided comments in opposition to the project and issuance of the air quality permit. These officials included:

Favorable:

- William McInnis, Ed.D. President Richmond Community College
- Emily Tucker, President & CEO Richmond County Chamber of Commerce
- Martie Butler, Management Analyst/Economic Developer, Richmond County Economic Development

Opposed:

- Matt Christian, City Manager, City of Hamlet, NC
- Bill Bayless, Mayor, City of Hamlet, NC

Several Environmental advocacy organizations and one local industry spoke critically and/or in opposition to the project, the permit application and issuance of an air quality permit. Many submitted multiple comments on written and oral form and many of their comments were similar in nature. These groups included:

- Enviva
- Clean Air Carolina
- Clean Water for North Carolina
- Madison County Clean Power Coalition
- Winyah Rivers Alliance
- Blue Ridge Environmental Defense League on behalf of themselves and
 - Concerned Citizens of Richmond County
- Southern Environmental Law Center on behalf of themselves and
 - Richmond Clean Air/Water Coalition
 - Winyah Rivers Alliance
 - Lumber Riverkeeper
 - Dogwood Alliance
 - Clean Air Carolina
 - North Carolina Conservation Network

Of the Public Hearing commenters who were not elected public officials or their representatives, most of them spoke in opposition of the proposed International Tie Disposal, LLC - Project Tie facility and issuance of the air quality permit, with a smaller number of them speaking in support of the facility and permit. The Public Hearing comments were not as detailed as some of the written comments received, due to the limited time allotted to each speaker. However, the general points and claims that were made were very similar to those received in the written public comments.

A. Overview of Comments in Support and Opposition of the Draft Air Permit

As stated earlier, many of the comments followed common themes in the case of both favorable and opposing comments. Below are some of the common comments made in opposition:

- Noise pollution
- Soil, groundwater and surface water contamination due to the handling, storage and processing of the creosote ties
- Potential contamination of the City of Hamlet's drinking water reservoir due to its proximity to the site
- Impacts of increased emissions in the area during Covid-19

- Belief that those in power over the process of establishing this facility or in favor of it were promoting economics over the health of citizens, animals, plants and the environment.
- Requests for air quality dispersion modeling, particularly for NO_x
- Establishment of a Fugitive Dust Plan and an Odor Control Plan
- Environmental Justice concerns and requests for a cumulative impact analysis
- Inadequacy of the basis used to establish emissions factors used in the application and requests for specific testing of the proposed process prior to permit issuance
- General belief that air, soil, water and the community would experience significant negative impacts; in particular, Marks Creek Presbyterian Church was mentioned
- Ongoing zoning lawsuit regarding a recent re-zoning of the proposed site
- Belief that ITD did not do an adequate job of outreach and public transparency.

Below are some of the common comments made in support of the proposed project:

- Dire need for job opportunities in the county
- Increase of revenue in the area
- The county's high tax rate is a direct result of the lack of industry in the county which disproportionately affects the most vulnerable
- Confidence in DEQ and its ability to apply and ensure compliance with applicable regulatory safeguards aimed at protecting the public and environment with regards to all media
- Confidence in existing rules/regulation's ability to protect the public and environment
- Belief that ITD and parent company Polivka have been and will continue to be great community partners as evidenced by their willingness to enclose parts of the process and replace the proposed grinder with a "Chomper"
- Belief that ITD did do an adequate job of outreach and public transparency.

Hearing Officer's Response

With regards to the 26 favorable comments received, none proposed any changes to the proposed draft permit or questioned the application or the accuracy of its content. All spoke favorably of the proposed project and many cited the reasons above as to why. DEQ appreciates the positive aspects industry and business provide the state, and appreciates the confidence expressed in DEQ as well as the existing federal and state environmental laws. However, the decision of whether the air quality permit should be issued to the International Tie Disposal, LLC - Project Tie facility and, if issued, the content and conditions contained therein must be based on a reasonable assurance that the facility can and will be operated in compliance with existing state and federal air quality regulations at all times. Based on that, no recommendations are being made in response to any of the comments which were in support of the project and issuance of the draft air quality permit.

B. Comments in Opposition to the Draft Air Permit and Hearing Officer's Response:

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Many of the comments opposed to permit issuance contained very similar, if not identical language. Paraphrased examples of the general comments opposed to permit issuance are below, followed by a response. These comments were largely submitted by individual commenters:

- General belief that the negative impacts of noise, water and soil pollution resulting from the project will adversely affect the calm, pristine and historical neighborhood including Marks Creek Presbyterian Church
- Opposition to burning creosote ties
- Odor concerns
- This will cause health problems in the community
- Only 55 jobs will be created and CSX will fill those with incompetent outside labor
- The calm and peace of the area will be destroyed
- Property values will be diminished
- This will exacerbate existing health problems and cause new ones
- Why isn't this being built at xyz location rather than this economically distressed neighborhood
- Our cancer rate is already too high relative to other areas in NC
- Creosote and other pollutants were cited along with associated health concerns and many commenters provided scientific studies or detailed dissertations regarding potential health impacts
- No additional pollution should be allowed during COVID-19
- We don't want this toxic dump
- CSX will save millions of dollars not having to properly dispose of the ties
- Belief that those in power over the process of establishing this facility or in favor of it were promoting economics over the health of citizens, animals, plants and the environment.
- General expression of opposition and request for permit denial
- Environmental Justice concerns and requests for a cumulative impact analysis
- What about impact on GHGs
- Ongoing zoning lawsuit regarding a recent re-zoning of the proposed site
- Belief that this unproven, experimental type of operation should not be permitted without significant testing and study prior to issuance of a permit

Hearing Officer's Response:

The DAQ is sensitive to all these issues especially those involving the protection of human health, environmental impacts, noise, zoning, environmental justice, clean energy, anthropogenic climate change, and the protection of the surface and groundwaters of the State of North Carolina. However, many of these comments are outside of the scope of this Hearing Report.

As referenced earlier in this Hearing Officer's Report, the decision of whether the air quality permit should be issued to International Tie Disposal, LLC - Project Tie and, if issued, the content and conditions contained therein must be based on a reasonable assurance that the facility can and will be operated in compliance with existing state and federal air quality regulations at all times. In addition to the common general comments regarding Environmental Justice, zoning, odors and water quality concerns, many commenters made more detailed and specific comments on these issues. Those comments and a response will be discussed later in this report.

Environmental Justice and Title VI concerns:

Commenters remarked on the high levels of people of color, ethnic groups and poverty in the area and questioned the appropriateness of locating a facility such as ITD in the area, especially considering existing industry in the area and their actual/potential impacts on the local people and the environment. Poor health outcomes were mentioned by many commenters either regarding themselves, friends and family or in general based on statistics for Richmond County. Outreach by DEQ conducted in the community in response to the proposed draft permit was called out as insufficient. Some commenters questioned if DEQ contacted the Lumbee Tribe and provided sufficient outreach to them in response to ITD's proposed draft air permit. Outreach by ITD especially regarding the City of Hamlet was cited as lacking. A large number of commenters cited Environmental Justice /Title VI (EJ) concerns when calling for denial of the proposed draft air permit and/or a full EJ analysis. Many commenters on the subject expressed a firm belief that EJ mandated a cumulative impact analysis by DAQ for air impacts and/or DEQ for all media. In general, several commenters called into question DEQ's commitment to EJ.

Hearing Officer Response:

As the commenters point out, NCDEQ's Draft Environmental Justice Report includes information on the elevated number of certain racial and ethnic groups. The report also includes information concerning the types of other permitted facilities located in the area around the proposed International Tie Disposal project (see page 30 of the Draft Report). The Draft EJ Report also includes information on Richmond County's health rankings and health outcomes as well as sociodemographic data for the area. This Draft EJ Report informed the extensive outreach that NCDEQ conducted in the community, including communications provided to the Lumbee Tribe. There is no state air quality law or regulation that either mandates or directs NCDEQ to perform the cumulative impact analysis envisioned by the commenters. However, NCDEQ remains committed to EJ and equity, and as such, compiled the aforementioned information within the Draft EJ Report in order to promote ease of access to this information for the public, the applicant and NCDEQ staff.

Zoning Comments:

Many commenters cited the recent rezoning of the property to accommodate the proposed project and mentioned an ongoing lawsuit filed in response to that rezoning by the county as

reasons for opposing issuance of the proposed air quality permit. Others requested a permit condition be added to the permit requiring compliance with local zoning ordinances.

Hearing Officer's Response:

15A NCAC 2Q .0304.b.1 requires (as part of an air permit application for "greenfield facilities") facilities to either submit a Zoning Consistency Determination from the local zoning authority or provide an application which is stamped as received by the local government agency in charge of zoning for the area. In the case of the latter, it is DAQs policy that if no objections are raised by the entity governing zoning within 15 days of the receipt stamp, then the application is considered complete and can be processed. A zoning consistency determination indicating compliance with applicable zoning laws was received from Richmond County Planning and Zoning. It was dated January 6, 2021. As referenced earlier in this Hearing Officer's Report, the decision of whether the air quality permit should be issued to the International Tie Disposal, LLC - Project Tie facility and, if issued, the content and conditions contained therein must be based on a reasonable assurance that the facility can and will be operated in compliance with existing state and federal air quality regulations at all times. Having satisfied the zoning requirements in 15A NCAC 2Q .0304 for a new facility these comments are beyond the scope of this hearing process. NC General Statute 143-215.108.g indicates that issuance or existence of an air permit such as the proposed draft does not affect the responsibility of any person to comply with any valid zoning ordinances.

Odor Comments:

Commenters cited potential future odors from the facility as reasons for opposition. Additionally, requests were made for inclusion of an odor control plan as part of the permit requirements. Commenters criticized FRO's efforts to evaluate odor at a facility storing over 2.5 million railroad ties citing a lower odor level in the winter as opposed to summer.

Hearing Officer's Response:

DAQ certainly acknowledges that some amount of odors can be expected from the proposed facility as well as many other industries within the state. There are and have been several other air permits in the state which provided for the storage, handling and grinding of ties mainly for use as a renewable fuel to generate power. While some amount of odors are associated with these facilities it has not been DAQ's experience that significant odor extends beyond the property boundaries of those sites. Regardless, observations made at similar facilities either in Georgia or NC are not representative of conditions which may or may not exist if the ITD permit is granted and operations begin. In NC, odors are regulated under 15A NCAC 2D .1806 "Control and Prohibition of Odorous Emissions" (Specific Condition 13 of the proposed Draft Air Permit). 15A NCAC 2D .1806 requires an Odor Management Plan only if a determination of Objectionable Odors is made by the Director based on a recommendation by staff at the local regional office according to the following:

- i. Determination of the existence of an objectionable odor. A source or facility is causing or contributing to an objectionable odor when:*

- a. *a member of the Division staff determines by field investigation that an objectionable odor is present by taking into account the nature, intensity, pervasiveness, duration, and source of the odor and other pertinent such as wind direction, meteorology, and operating parameters of the facility;*
- b. *the source or facility emits known odor-causing compounds such as ammonia, total volatile organics, hydrogen sulfide, or other sulfur compounds at levels that cause objectionable odors beyond the property line of that source or facility; or*
- c. *the Division receives from the State Health Director epidemiological studies associating health problems with odors from the source or facility.*

These determinations are typically driven by citizen complaints but can also be made based solely on a DAQ inspector's observations. Odors are regulated consistently throughout NC by DAQ. In all cases, the same odor condition referencing 15A NCAC 2D .1806 is placed in applicable air permits and in all cases, the requirement for an Odor Management Plan is based on field observations by staff in accordance with the procedures above. DAQ must follow the direction and requirements of applicable rules as they are written. In this case, Odor Management Plans are only required when justified by staff observations which result in objectionable odors beyond a facility's boundaries as determined by the Director.

Soil, Surface Water, Drinking Water and Groundwater Contamination and Waste Disposal Comments:

A significant number of comments were submitted in this category. Commenters overwhelmingly cited concerns with the City of Hamlet's drinking water reservoir due to its proximity to the site. One commenter expressed concerns regarding waste disposal (hazardous and nonhazardous as applicable) by ITD. One commenter questioned if a "TCLP" analysis had been performed on the ties and what those results might be. What type of firefighting foams might be used at the site in the event of a fire was questioned. Numerous potential routes of contamination and scenarios were suggested regarding contamination of these medias by commenters. Commenters question what if any type of permits would be required by the agencies regulating these other media. In particular, commenters wanted to know if an Individual or General Stormwater Permit would be issued by DEMLR.

Hearing Officer Response:

The DAQ is sensitive to all of these issues especially those involving the protection of human health, environmental impacts, and the protection of the surface and groundwaters of the State of North Carolina. However, as referenced earlier in this Hearing Officer's Report, the decision of whether the air quality permit should be issued to the International Tie Disposal, LLC - Project Tie facility and, if issued, the content and conditions contained therein must be based on a reasonable assurance that the facility can and will be operated in compliance with existing state and federal air quality regulations at all times. Comments and questions made regarding impact to medias regulated by other Divisions of DEQ have been forwarded to those Divisions for their consideration.

Fugitive Dust Comments:

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Many technical and general comments were made regarding the methods/procedures used to estimate fugitive dust emission for ITD. Commenters questioned the 90% capture efficiency applied to the inlet/outlet of the intermodal container process lines and whether it was at an adequate level. In addition to fugitives from “grinding ties” many commenters cited fugitive dust from storage, handling and processing of the ties. The presence of creosote in the tie feedstock and fugitive dust caused concerns of dust deposits off site. Lack of supporting details regarding emissions estimations for the conveyor system feeding the product silos and the silos was pointed out. Commenters from Georgia and NC indicated fugitive dust from a facility in Georgia contributed to significant fugitive dust impact in the area around that facility. They further indicated that Georgia passed a law outlawing the use of creosote treated ties as fuel due to dust and other impacts caused by that facility. Commenters requested inclusion of a permit modification to require a Fugitive Dust Control Plan.

Hearing Officer’s Response:

It should be pointed out that ITD submitted an initial air permit application which contained an uncovered grinder with a 0% capture efficiency for fugitive dust with the expectation that it would meet all applicable requirements and be permitted. During the permit review and in response to public concerns regarding noise and dust ITD revised the application to replace the grinder with a “Chomper” and enclose it in intermodal shipping containers. The Hearing Officer agrees with comments regarding justification for the 90% capture efficiency applied to the intermodal container lines as well as the lack of specifics surrounding emissions estimates for the two product silos and the conveyance system feeding them. On March, 23, 2021, the FRO issued an Additional Information Request to ITD regarding these issues. Based on a review of additional information and subsequent correspondence between FRO and ITD, the 90% capture efficiency applied to the intermodal containers was determined to be appropriate. ITD also requested removal of the product storage silos and associated conveyance systems from the application, indicating they would not be installed. It is the Hearing Officer’s recommendation that the silos and conveyors be removed from the Insignificant / Exempt Activities listing attached to the draft permit and that references to that equipment and associated emissions estimates be removed from the draft permit review. DAQ certainly acknowledges that some amount of fugitive dust can be expected from the proposed facility as well as many other industries within the state. There are and have been several other air permits in the state which provided for the storage, handling and grinding of ties mainly for use as a renewable fuel to generate power. While some amount of fugitive dust is associated with these facilities it has not been DAQ’s experience that significant fugitive dust extends beyond the property boundaries of those sites. Regardless, observations made at similar facilities either in Georgia or NC are not representative of conditions which may or may not exist if the ITD permit is granted and operations begin. In NC, fugitive dust is regulated under 15A NCAC 2D .0540 “Particulates from Fugitive Dust Emissions Sources” (Specific Condition 9 of the proposed Draft Air Permit). 15A NCAC 2D .0540 requires a Fugitive Dust Plan only if a determination of substantive fugitive dust complaints is made by the Director based on a recommendation by staff at the local regional office according to the following:

(c) The owner or operator of a facility required to have a permit pursuant to 15A NCAC 02Q or a source subject to a requirement pursuant to 15A NCAC 02D shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or visible emissions in excess of that allowed pursuant to Paragraph (e) of this Rule.

(d) If fugitive dust emissions from a facility required to comply with this Rule cause or contribute to substantive complaints, the owner or operator of the facility shall:

(1) within 30 days upon receipt of written notification from the Director of a second substantive complaint in a 12-month period, submit to the Director a written report that includes the identification of the probable sources of the fugitive dust emissions causing complaints and what measures can be made to abate the fugitive emissions;

(2) within 60 days of the initial report submitted pursuant to Subparagraph (1) of this Paragraph, submit to the Director a fugitive dust control plan as described in Paragraph (f) of this Rule; and

(3) within 30 days after the Director approves the plan pursuant to Paragraph (g) of this Rule, be in compliance with the plan.

These determinations are typically driven by citizen complaints but can also be made based solely on a DAQ inspector's observations. Fugitive dust is regulated consistently throughout NC by DAQ. In all cases, the same fugitive dust condition referencing 15A NCAC 2D .0540 is placed in applicable air permits and in all cases, the requirement for a fugitive dust control plan is based on field observations by staff in accordance with the procedures above. DAQ must follow the direction and requirements of applicable rules as they are written. In this case, fugitive dust control plans are only required when justified by staff observations which result in substantive fugitive dust complaints or staff observations indicating fugitive dust is impacting areas beyond a facility's boundaries as determined by the Director.

Emission Factor Estimates & Testing Comments:

A vast majority of comments touched on these topics. Significant time and resources were spent by many commenters calling into question emissions estimates used by ITD and reviewed by DAQ. None of the proposed emission factors escaped scrutiny. Fugitive PM emissions from storage, handling, chomping of the ties/raw material as well as the handling, grinding, screening and packaging of the biochar were questioned. Criteria Pollutants, Hazardous Air Pollutants (HAP) and Toxic Air Pollutants (TAP) emission factors applied to the afterburners/pyrolysis process were also questioned. Many commenters objected to using the proposed factors based on the following paraphrased reasons and requested denial of the permit until further investigation, research and study could be conducted to support the estimates. Several commenters expressed a belief that this should be done prior to permit issuance and that "once the cat is out of the bag", or "once these emissions are released their impacts and consequences cannot be recalled" additionally, "this industry will already be entrenched once permitted."

- Only one of the identical kiln tests was done on ties,
- The three other identical kiln tests were done on virgin wood,
- Temperature profiles of the kilns and after burners were different in the tests mentioned above (less than the proposed set point of 1650 degrees F for the afterburners)

- Applicant combined process weights from one test with emissions from others to establish lb/ton emission factors
- DAQ ignored EPA guidance “Draft NSR Workshop Manual” 1990 “Methods for determining Potential Emissions”
- No basis was given for use of the 95% efficiency assigned to the afterburner - AP-42 10.7 “Charcoal” suggests an 80 % value for charcoal kiln afterburners.
- Afterburner destruction efficiencies vary significantly with temperature
- Emission factors in AP-42 Section 10.7 “Charcoal” should have been used for estimation of Criteria pollutants from the process as a whole, as opposed to the individual emission point analysis proposed.
- Emission points/stacks don’t appear to be conducive to testing (assumed due to photo depictions) and may not be conducive to normal test methods.
- Process temperatures, stack dimensions and other parameters may be outside of stack test testing parameter ranges and require significant alternative methods which might not provide accurate test results
- Inadequate justification is given, or methodology was not specified for determining kiln emissions on a lb/ton basis
- Stack tests typically consist of 3 runs which are typically 1 hr in duration while this batch process is reported to be 7-8 hours in duration
- Many compounds such as PAH’s, dioxins/furans could be present and are not being tested
- Request that the Regional Supervisor be present for any source testing
- Belief that toxic pollutants should be modeled
- Tests results may be biased based on corporate relationships
- Requests for more initial and periodic testing including more frequent testing and studies of the process prior to permit issuance

While the list above is not exhaustive regarding the comments submitted, it captures the major nuances of comments submitted on this topic.

Fugitive PM, Volatile Organic Compounds Emissions, HAP, TAP and several other potential air pollution emission factors (or their lack thereof) were also cited as concerns as follows:

- No justification for assumption of zero emissions during cooling process after pyrolysis
- No requirements for leak detection at seal on top of kiln
- Log bucking emission factors in AP-42 are not representative of the Chomper
- AP-42 emission factors for mineral processing are not representative of biochar processing
- The single, facility wide PM factor in AP-42 10.7 “Charcoal” should be used instead of the emission point specific factors proposed and reviewed by DAQ
- 90% capture efficiency applied to the two intermodal process lines is not justified
- Emissions estimates for the silos and their conveyance system are not justified
- Test results may be biased based on corporate relationships

- Emissions of VOC, hydrocarbon, PAH, from tie storage are not provided for and should be included in the facilities PTE calculations
- Amounts of creosote remaining in ties and the amount of off gassing and many methods of estimating those values were explored by commenters with some providing scientific studies in support of those methods
- Requests for more initial and periodic testing and studies of the process prior to permit issuance

While the list above is not exhaustive regarding the comments submitted, it captures the major nuances of comments submitted on this topic. A complete and accurate record of the comments is a matter of public record and is considered an essential part of the record and supporting documents related to this Hearing Officer's Report.

Hearing Officer's Response:

Kiln/Afterburner Emissions

The DAQ acknowledges and recognizes many of the inconsistencies which exist with the approach taken by ITD to establish these emission factors. When DAQ permits new or novel industries, issuance of an initial permit may be based on emission estimates which need to be verified. Permit issuance is not the end of the process of verifying and validating those estimates. It is a tool used to outline how those emissions shall be validated and establish a level of confidence that the facility can operate in compliance with all applicable state and federal air quality standards until that validation occurs. It is the Hearing Officer's opinion that the methodologies and emission factors reviewed by FRO are sufficient to provide a reasonable assurance of compliance with all applicable air quality standards until source specific emission factors can be established via testing. In response to comments presented regarding afterburner destruction efficiency and temperature, it is the Hearing Officer's recommendation that until testing establishing minimum temperature for the afterburner is approved by DAQ, ITD shall be required to maintain the 3 hour rolling average temperature at or above 1650 degrees F. Establishment of a minimum operating temperature and maintaining the 3 hour rolling average temperature at or above that minimum is adequate to provide a reasonable assurance of the afterburners destruction efficiency and emissions estimates in the opinion of the Hearing Officer.

The AP-42 section 10.7 "Charcoal" only provides facility wide emissions factors for a number of commercial charcoal manufacturing facilities which are significantly different from the ITD process. Additionally, the facility wide criteria factors presented in that document are rated as an "E" which is the lowest rating possible. Indeed, AP-42 cites a finding of significant variations in the facilities tested and applied the "E" rating based on questionable representation of specific source emissions in the source category. Furthermore, it only estimates facility wide emissions with a single emission factor from charcoal not biochar facilities as opposed to the more detailed investigation of individual emissions points proposed by ITD and reviewed by DAQ.

Source testing of the actual equipment and the as built process is the golden standard for emissions validation. In DAQ's view, the next best is testing of identical equipment followed by testing of similar processes. AP-42 factors would be used if available in the absence of testing followed by any other reasonable information available or presented by an applicant. It should be noted that the applicant applied a 25% safety factor to the Criteria Pollutant emission tests used to estimate emission factors in the application. Some commenters request more frequent testing. The draft air permit requires 8 tests on 8 identical kiln/afterburners (4 for each of the two raw material feeds) within 90 days of startup and annual testing thereafter with provisions allowing for testing every 3 years after sufficient validation of the emissions factors is achieved. Additionally, the DAQ has authority to require additional testing at any time should it be deemed necessary. Some commenters cited various compounds that could potentially be emitted but were not being tested for. All regulated air quality pollutants including Criteria Pollutants, TAPs and HAPs will be tested and evaluated. It is the Hearing Officer's opinion that the proposed testing schedule is sufficient to provide a reasonable assurance of the emissions factors and compliance with applicable air quality regulations until source specific testing can be conducted. With regard to comments requesting testing prior to permit issuance, all testing is required to be conducted within 90 days of permit issuance. Based on a review of the applicable air quality requirements and the current emissions estimates, these estimates are considered reasonable best approximations which will assure compliance with all applicable air quality regulations until source specific emissions factors can be established via testing. It is however, the Hearing Officer's recommendation that the testing condition be modified to include a requirement for ITD to request and gain approval from the DAQ before reducing testing frequency to 3 years as appropriate.

Two commenters questioned how the pound per ton (lb/ton) emission factors presented by ITD and forming the basis for permit review were derived. A review of the record indicates that while not ideal, the methodology used to establish lb/ton emission factors in the application were sufficient and provide a reasonable assurance of compliance with all applicable air quality standards until ITD conducts testing and establishes source specific emissions factors. Assuming the draft permit is issued and ITD begins operations, it is apparent to the Hearing Officer that each kiln batch will be weighed during the initial (and subsequent) performance tests and that DAQ staff will be onsite to observe. This information and emissions estimates from testing will be used to establish the lb/ton factors specific to ITD. In order to bolster the Federally Enforceable Synthetic Minor Condition in the draft permit, it is the Hearing Officer's recommendation that requirements be added to the testing conditions (Specific Conditions 10 and 11) requiring each kiln batch be filled to its maximum design capacity and weighed during testing and that this information is documented in test reports.

A request was made for the Regional Supervisor to be present during all testing. Depending on the region and its staff, the Regional Supervisor may or may not be the most knowledgeable person in the office with regards to stack testing. In most regions, compliance staff generally consisting of Engineers, Environmental Specialist or Chemists attend and review stack tests. These staff are specifically trained in the testing process and review these tests as a matter of routine in their daily work. Most Regional Supervisors were formerly either permit staff and/or

Compliance Inspectors earlier in their career with DAQ and it may have been quite some time since they attended stack test training or participated in stack testing observations. If they have, it is not a matter of routine in their daily work. The Hearing Officer has full confidence in the FRO staff regardless of who is assigned as the Compliance Inspector for ITD. The Hearing Officer also has full confidence in the Stationary Source Compliance Branch (SSCB) of DAQ that will review and approve proposed stack testing protocols and test reports.

Many commenters questioned the ability of the proposed equipment to provide adequate sampling ports for testing and assumed other complications with testing parameters such as temperature levels and suggested a need for significant alternative test measures (as compared to conventional testing) and questioned accuracy of the methods used. In the case of batch processes with variable emissions over batch duration, it is DAQs standard to require testing cover the entire length of the batch. It is the responsibility of the applicant to provide such facilities for testing as required by General Condition 17 of the proposed draft air permit. As expressed earlier, the Hearing Officer has full confidence in the Stationary Source Compliance Branch of DAQ that will review and approve proposed stack testing protocols and test reports. It is the DAQ's standard operating process to review/approve proposed testing methods, approve test results and update/reevaluate permit impact of recent test results and modify existing permit conditions based on those results. However, in the face of public concern, it is the Hearing Officer's recommendation that all Criteria, HAP and TAP emission factors derived during testing be compared to estimates used in the initial permitting process in a side-by-side table which is to be included as part of any initial source test reports required of afterburner testing. It is also recommended that the identification number of the kilns and afterburners being tested are documented in any test reports submitted for review.

In the case of the EPA guidance "Draft NSR Workshop Manual", it is specific guidance on regulatory analysis of New Source Review (NSR). Upon acceptance of a Federally Enforceable Synthetic Minor Condition, ITD avoids Major Source applicability of those requirements which are typically only applicable to much larger emission sources. In the case of Minor Source requirements under NSR they are that the facility comply with all state requirements for air quality and that they do not interfere with attainment or maintenance of the National Ambient Air Quality Standards (NAAQS). In the case of ITD, it is the expectations that all state requirements will be met. Additionally, it is expected that ITD will not interfere with attainment or maintenance of the NAAQS (see response to modeling and NAAQS comments later in this report). It is DAQs practice (and common practice among regulatory agencies) to average test runs, sampling results, and final test results to assign emissions factors. This is a completely different exercise than evaluating compliance with specific emissions limitations under NSR.

Fugitive Emissions

With regards to leaks at the kiln top integral seal-cover lid, the pyrolysis process is dependent on limiting the oxygen content within the kiln. Any leaks during processing or cooling would ruin the batch and the biochar would likely be reduced to ash. Therefore, it is in ITD's best interest to assure a complete seal on every batch. This supports the assertion of zero emission during

cooling as well. It is also expected that as the kiln cools, a vacuum will be created within. As stated by the applicant, any leakage of oxygen into the kiln would likely result in combustion of the biochar ruining the batch.

In the absence of any specific emission factors for tie storage, handling, and processing as well as biochar handling, grinding, screening and packaging, ITD proposed factors in AP-42 for the closest similar processes. While it may seem intuitive that the AP-42 10.7 "Charcoal" would be the closest similar process for estimating fugitive particulate matter (PM) emissions at the facility, it was not used. The AP-42 section 10.7 "Charcoal" only provides facility wide emissions factors for a number of commercial charcoal manufacturing facilities which are significantly different from the ITD process. Additionally, the facility wide PM factor presented in that document is rated as an "E" which is the lowest rating possible. Indeed, AP-42 cites a finding of significant variations in the facilities tested and applied the "E" rating based on questionable representation of specific source emissions in the source category. Furthermore, it only estimates facility wide emissions of PM with a single facility wide emission factor from charcoal, not biochar facilities as opposed to the more detailed investigation of individual emissions points proposed by ITD and reviewed by DAQ. This emission point specific method and the similar AP-42 factors used are viewed as conservative estimates which provide for a reasonable assurance of compliance with the applicable regulatory requirements for PM.

ITD submitted an initial air permit application which contained an uncovered grinder with a 0% capture efficiency for fugitive dust with the expectation that it would meet all applicable requirements and be permitted. During the permit review and in response to public concerns regarding noise and dust ITD revised the application to replace the grinder with a "Chomper" and proposed to enclose it in intermodal shipping containers. The Hearing Officer agrees with comments regarding justification for the 90% capture efficiency applied to the intermodal container lines as well as the lack of specifics surrounding emissions estimates for the two product silos and the conveyance system feeding them. On March, 23, 2021, the FRO issued an Additional Information Request to ITD regarding these issues. Based on a review of additional information and subsequent correspondence between FRO and ITD, the 90% capture efficiency applied to the intermodal containers was determined to be appropriate. ITD also requested removal of the product storage silos and associated conveyance systems from the application, indicating they would not be installed.

Commenters pointed out the absence of an emissions estimate of VOC/Hydrocarbon/polycyclic aromatic hydrocarbons (PAH) emissions from storage/processing of the ties. The Hearing Officer agrees that some amount of these emissions will occur. A review of available scientific studies on the matter was conducted by FRO staff as well as the Hearing Officer. That review indicated that creosote is comprised of several PAH which are also considered polycyclic organic matter (POM). Further review indicated that some amount of PAH/POM could be expected from a newly treated tie. One of the PAH/POM compounds was expected to comprise the majority of those emissions while the rest were expected to be "negligible". Insufficient information was found to reasonably estimate these emissions from the stated 20-30 year old ties. In the case of ITD's operations the only applicable air quality standards for these emissions

would be regulation as a VOCs or as a HAP. In the case of VOCs, the only applicable standard is avoidance of the 100 ton per year Major Source threshold. ITD's Synthetic Minor Limit is governed by NO_x which limits production to 58,400 batch kiln operations per year. That limitation effectively limits ITD's potential to emit for VOCs to 13.12 tons per year which is significantly less than the 100 ton per year limit. In the case of HAPs, no regulatory air requirements exist for HAP Minor non TV facilities with similar processes. In other words, these rules are only applicable for facilities with the Potential To Emit (PTE) greater than 10 tons per year (tpy) for an individual HAP or 25 tpy for all facility wide HAPs. ITD's PTE for HAP is 1.03 tpy and 1.09 tpy for individual and total HAPs respectively. Based on the limited scientific studies reviewed it is the Hearing Officer's opinion that insufficient data exists to reasonably quantify these VOC/HAP emissions. Enough information does exist which indicates that any VOC emissions from storage and processing of even brand new ties is negligible with regards to the Synthetic Minor Limit and the HAP regulatory triggers. The inability to accurately quantify these emissions coupled with a reasonable assurance that if they could be quantified, they would not jeopardize the Synthetic Minor Limit or trigger HAP regulation and would have no impact on requirements in the proposed draft air permit compels the Hearing Officer not to make a recommendation for inclusion of a questionable estimate for these emissions in the draft permit review. From an air quality standpoint, the only significant impact of these emission would be odor which is regulated by 15A NCAC 2D .1806. Comments and a response with regards to odor concerns are addressed earlier in this report.

The Hearing Officer is reasonably convinced that the emission estimates and the calculation methodologies currently contained in the draft air quality permit are sufficient to monitor compliance with all applicable state and federal air quality regulations. The Hearing Officer also believes that the draft permit limits the facility's PTE sufficiently to ensure that its actual emissions remain below the emission thresholds that would require a Title V air quality permit until more accurate estimates can be established via testing.

Modeling, NAAQS & Cumulative Impact Analysis Comments:

A vast majority of commenters requested a cumulative impact analysis outside the context of Environmental Justice concerns (addressed earlier). Cumulative impact is discussed in that context here. A similar number of commenters requested modeling, in particular NO_x modeling. A small number of commenters requested toxics modeling. Many of the commenters requested a cumulative impact analysis without any context. Others coupled it with their modeling requests. In the case of the latter, these commenters provided various analysis/justifications in support of those requests. One commenter claimed to have run a NO_x model on their own based on "limited" available information and a similar operation in Colorado. They further indicated that their results indicated a "high probability of exceeding the NAAQS...". This same commenter and many others referenced other facilities with similar characteristics to ITD (height of the release points) but with much lower NO_x emissions which have recently been modeled by DAQ and modeled results indicated exceedances of the NAAQS for NO_x. Many commenters were insistent regarding the need for modeling with some questioning DAQ's commitment to its mission. Similar comments were made regarding DEQ when the commenters requested

cumulative impact analysis for all medias. One commenter pointed to NAAQS modeling performed recently in Caswell Co and indicated a belief that the background NO_x concentration used in that effort would be low for any potential modeling efforts which might transpire with regards to Richmond County facilities.

Hearing Officer's Response:

During the course of reviewing comments and preparing this Hearing Report, on March 19, 2021 ITD submitted an AERMOD modeling analysis for NO_x. Comments provided back to ITD resulted in a revised modeling submission on March 31, 2021. The analysis included an assessment of ITD's emissions and incorporated NO_x emissions from a nearby facility. The analysis showed compliance with the NAAQS for NO_x considering the cumulative impact of NO_x emissions from those two facilities. The model was reviewed and approved by DAQ's Air Quality Analysis Branch (AQAB). Mathew Porter of the AQAB reviewed the revised modeling and issued a memorandum approving the modeling on March 31, 2021. Based on this development, it is the Hearing Officer's opinion that commenters concerns regarding modeling and cumulative air quality impacts are satisfied. It is the opinion of the Hearing Officer that no other air quality pollutants warrant additional cumulative impact analysis or modeling. Because of the margin of compliance determined from the modeling analysis, the Hearing Officer recommends a condition be added to the permit specifically restricting hourly operations to no more than 62 kiln batch operations per hour under 15A NCAC 2D .0501 (c).

No Ambient Monitors in the vicinity of ITD Comments:

Some commenters pointed out a lack of ambient monitors in the vicinity of ITD and requested that air quality monitors be sited in the vicinity with no further discussion. Some pointed to the industrial uses in the area as justification for this general monitoring request. Other's commented that NO_x monitors specifically should be located in the vicinity. Many commenters point to the various NO_x sources in the area as justification for monitoring.

Hearing Officer's Response:

DAQ is committed to fulfilling its Mission Statement to the fullest of its abilities. Our Ambient Monitoring Network program is extremely resource intensive. Not only does it take up a significant portion of our budget, but it also requires extensive staffing resources to site, operate, troubleshoot, calibrate, quality assure, analyze, and report the data. Having extremely limited resources, the DAQ devotes itself to distributing those resources in a manner that best supports our mission statement and serves the citizens of the State of NC. In the case of our Ambient Monitoring Network, the number, types and locations of our monitoring sites are determined by discussions between our Planning Section which includes modelers/meteorologists, our Ambient Monitoring Section and our management. Allocation of monitoring resources are reviewed annually by staff and Annual Network Review Plans are put out for public/EPA comment each year. A more extensive review is conducted every 5 years which is also put out for public/EPA comment. Ambient monitoring siting requirements and NAAQS determinations are governed by 40 CFR Part 58 Appendices A, D & E and 40 CFR Part 50 Appendices H, I, K, N, P, R, S, T & U respectively. Rarely does a facility or conglomeration of facilities warrant source specific

monitoring. The Hearing Officer has full confidence in management and the DAQ sections which allocate monitoring resources each year in NC. It is further believed that ITD as proposed does not warrant site specific monitoring for NO_x or any other Criteria Pollutant. Commenters are urged to provide comments regarding the location and type of monitors in any area during the Annual Network Review comment periods each year.

Disposal vs Production, Incineration and Biochar Use Comments:

A few commenters called into question the intent of the ITD project. They expressed a belief or concern that the whole project was a ruse, established for the purpose of avoiding disposal costs associated with “proper” disposal of the ties. California’s solid waste railroad tie disposal requirements were cited by one commenter. That commenter also indicated a belief that under those regulations, the economic savings associated with the avoided disposal costs of the ties was \$12 million dollars annually. A few commenters indicated a general belief that ITD was incinerating the ties solely for the purposes of disposal. One commenter wanted to know if NC had issued a Non-Hazardous Secondary Material Determination (NHSM) regarding the proposed railroad tie feedstock for the ITD facility. Commenters also questioned the applicability of NC incineration regulations contained in 15 A NCAC 2D .1200 “Incinerators” to the process. In support of these themes, a few commenters questioned the use of the final “biochar” product. Many cited concerns about lingering creosote and other contaminants in the biochar and questioned it’s suitability for use in the environment particularly as a soil amendment product. One commenter suggested that the biochar produced at ITD should be required to meet certification standards published by the International Biochar Initiative.

Hearing Officer’s Response:

It is clear from the ITD application and description of the process that the proposed project does not fall into the category of incineration or disposal (with regard to applicable AQ regulations). It is also clear to the Hearing Officer that the intent of the proposed process is the production of biochar utilizing a renewable feedstock (ties and logs). It is the opinion of the Hearing Officer that the operations detailed in the ITD application are not subject to 15A NCAC 2D .1200 “Control of Emissions from Incinerators.” It is also the opinion of the Hearing Officer that the federal Commercial, Industrial Solid Waste Incinerators (CISWI) regulations are also not applicable to the ITD project as proposed. Should ITD construct and/or operate the facility inconsistent with representations contained in the application, applicability of these regulations should and would be reevaluated by DAQ/FRO. In the past, NC issued NHSM under the federal CISWI program. Those determinations are under the sole authority of EPA, and upon their request, NC no longer issues those determinations. Several commenters commented on the proposed final product questioning the amount of residual creosote, metals and other compounds and whether it was suitable as a soil amendment. Outside of applicability determinations regarding the incineration rules mentioned above, comments surrounding the use, specifications or certifications of the final product, are outside of the scope of this Hearing Report.

Inspection and Monitoring Comments:

One commenter questioned the absence of inspection and maintenance requirements for the permit exempt baghouses. Another commenter questioned the application of the 3% Continuous Monitoring System (CMS) downtime with regards to the temperature monitoring.

Hearing Officer's Response

The baghouses in question are listed in a summary of the facility's insignificant/permit exempt activities which is included as an attachment to the permit. The baghouse is included on that list as IES-EX2. While not required to do so, NC includes these insignificant/permit exempt listings with all its permits in the interest of clarity for DAQ and permittees as well as transparency. Not being part of the equipment listed in the permit, the baghouses are not subject to requirements contained in the permit. However, they are regulated. NC G.S. 143-215.108(c)(1) requires the equipment to be operated and maintained at all times in a manner that will effectuate an overall reduction in air pollution. One of the reasons NC includes a listing of insignificant/permit exempt sources is to inform compliance inspectors since this equipment will be evaluated and reviewed as part of any compliance inspection.

Specific Condition 12 of the draft air permit indicates:

"CMS Downtime shall not exceed 3% of the time the kilns are operational per semi-annual period."

The commenter questioned how that would be applied considering there are 426 kilns and 62 afterburners on site with 160 kiln batch operations per day which could be accomplished with any number of kiln/afterburner combinations. It is clear to the Hearing Officer that the 3% downtime is always applicable during kiln operations regardless which specific kiln or afterburner is being used and that it applies to the batch operations as a whole. It is believed that it would be beneficial to establish compliance with this CMS downtime requirement as well as compliance with the minimum/maximum temperature requirement to require ITD to record the start and end times for each batch. Therefore, it is the Hearing Officer's recommendation that Specific Condition 12 be amended to require documentation of each batch start and end times, defined as when the kiln's burner is started (startup) and when the afterburner is removed (shutdown). Not only will this better define calculation of CMS downtime, but it will also better define the times when the minimum/maximum rolling 3 hour average temperature requirements must be maintained.

Hours of Operation Comment:

One commenter questioned why the permit was issued for 24/7 hours of operation when the application indicates 9 hrs./day of operation.

Hearing Officer's Response:

ITD clearly requested operations be permitted for 24 hours/day, 7 days/week and 52 weeks/year. The air quality analysis, modeling and permitting review were performed based on the requested hours of operation.

Facility Expansion, Exceedance of Synthetic Minor Limit & TV Permitting Comments:

Commenters expressed concern and/or questioned the consequences regarding expansion of operations by ITD. They also questioned the consequences of exceeding the Synthetic Minor Permit Limit. Others expressed concern that ITD might expand in the future and become a TV facility.

Hearing Officer's Response:

ITD requested a Synthetic Minor Permit by choice. Assuming they could meet all applicable air quality requirements, they could have requested a Title V permit. It is still within their prerogative to increase production and request a revision to a Title V permit. Consequences of exceeding a Synthetic Minor limit are varied depending on the situation. Enforcement decisions and permitting levels are evaluated on a case-by-case basis by DAQ. Typically, such occurrences are handled with an enforcement response by DAQ which may or may not involve assessment of civil penalties. Similarly, whether such an exceedance would impact facility classification levels are also addressed on a case-by-case basis.

Malfunction Notifications Under 2D 15A NCAC 2D .0535 is too Lenient Comment:

The commenter provided comment that allowing excess emissions occurring as a result of a malfunction to last for 4 hours prior to requiring a notification to DAQ was inappropriate.

Hearing Officer's Response:

In general, any excess emissions occurring during startup, shutdown or malfunction are considered violations as defined in 15A NCAC2D .0535. In the case of malfunctions, involving excess emissions, the commenter is correct in that the reporting of those events is only required if they last more than 4 hours. When they occur, notification to the DAQ is required by 9am the following day. The process described above is set by rule (15A NCAC 2D .0535). It is applied uniformly to all air permits across the state. The commenter is urged to make comments regarding air quality rule content when rules are being revised and public comment is solicited.

NC Climate Plan Comment:

One commenter implied that combustion of natural gas in the kilns and afterburners was inconsistent with NC's Climate Plan.

Hearing Officer's Response:

While this comment is out of the context of this Hearing Report, the DEQ offers the following response to this comment:

Governor Cooper's Executive Order 80 (EO80) sets emission reduction goals for the state of North Carolina to strive to achieve. Those goals include a reduction in statewide greenhouse gas (GHG) emissions of 40% below 2005 levels, an increase in zero emission vehicles, and energy consumption reductions in state owned buildings of 40% from 2002-2003 levels. It also requires state agencies to develop plans for becoming more resilient to climate change impacts. The NC Climate Change Interagency Council is charged with developing holistic approaches and

programs so that North Carolina can strive to accomplish all the goals in EO80 while ensuring that North Carolina's vibrant economy continues to expand. All of the work products specifically directed in EO80 have been published and are publicly available.

The North Carolina Clean Energy Plan (CEP) was published by DEQ in October of 2019. This plan includes 39 stakeholder-developed recommendations to expand the use of clean energy and energy efficiency in the electricity sector through policy, administrative, and voluntary actions. It also established a goal of reducing GHGs by 70% from 2005 levels by 2030 and a second goal of net zero GHG emissions by 2050. Since its publication, several public and private entities as well as DEQ have begun working on implementation of various recommendations, including the GHG goals.

V. Conclusions and Recommendations

First let me state for the record, that I was very impressed with many of the comments submitted. It is obvious that many commenters are very passionate about this project as evidenced by the thorough, thoughtful and detailed comments which were submitted. Many hours must have been spent researching and developing many of those comments. I sincerely appreciate the time, effort, passionate opinions and interest in the varied air quality issues related to ITD. My goal in responding to those comments and preparing this report was to honor them by also spending a significant amount of effort researching and responding to those comments.

After considering all public comments addressing issuance of the proposed draft air quality permit (Permit No. 10676/R00) to International Tie Disposal, LLC - Project Tie for the construction and operation of a new pyrolysis / biochar processing and packaging facility, the recommendation of the Hearing Officer is to issue the draft air permit with the following recommended permit modifications and/or additions to the permit review:

- It is the Hearing Officer's recommendation that the silos and conveyors be removed from the Insignificant / Exempt Activities listing attached to the draft permit and that references to that equipment and associated emissions estimates be removed from the draft permit review. This recommendation was based on ITD's indication that the equipment would not be installed and their request for removal from that listing.
- It is recommended that until testing establishing minimum/maximum temperature(s) for the afterburner is approved by DAQ, a requirement to maintain the 3-hour rolling average temperatures at or above 1650 degrees F be added to Specific Condition 12.
- It is recommended that Specific Condition 11 "Subsequent Testing Requirements" be modified to require ITD to request and gain approval from DAQ prior to reducing the testing frequency to every 3 years.

- It is recommended that requirements be added to the permit requiring each batch operation during testing be charged with raw material to its maximum design capacity and be weighed to establish the lb/ton emission factors.
- It is recommended that all Criteria, HAP and TAP emission factors derived during testing be compared to estimates used in the initial permitting process in a side-by-side table which is to be included as part of any initial source test reports required during initial performance testing of the afterburners. It is also recommended that the identification number of the kilns and afterburners being tested as specified in Specific Condition 2 of the draft air quality permit is recorded as part of any test reports submitted for review.
- It is recommended that a condition be added to the permit specifically restricting hourly operations to no more than 62 kiln batch operations per hour under 15A NCAC 2D .0501 (c).
- It is recommended that Specific Condition 12 be amended to require documentation of each batch start and end times, defined as when the kiln's burner is turned on (startup) and when the afterburner is removed from the kiln (shutdown).



Brad Newland P.E., CPM
Hearing Officer

4/8/21
Date

Appendix A:

Draft Air Quality Permit and Permit Review

Appendix B:

International Tie Disposal, LLC - Project Tie Environmental Justice Report

Appendix C:

DAQ Memorandum on Nitrogen Oxide (NO_x) Modeling for the NAAQS