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# Frontier Kinross, LLC

## RESPONSE TO COMMENTS DOCUMENT

June 30, 2011

PERMIT No. 166-09A

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Rick Snyder, Governor

### Air Quality Division Michigan Department of Environmental Quality

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## I. PUBLIC PARTICIPATION PROCESS

Permit to Install application No. 166-09A, for Frontier Kinross, LLC (Frontier), is for the installation and operation of a 40 million gallon per year wood-to-ethanol facility with a 535 MMBtu/hr bubbling fluidized bed biomass boiler to be located in Kinross Township, Michigan. The public participation process involved providing information for public review including a fact sheet and proposed permit terms and conditions, a public comment period, an informational meeting, a public hearing, and the receipt of written and verbal public comments on staff's analysis of the application and the proposed permit.

On May 16, 2011, copies of the Notice of Air Pollution Comment Period and Public Hearing, the Fact Sheet, and the draft terms and conditions were placed on the Department of Environmental Quality (DEQ or Department), Air Quality Division (AQD) Home Page (<http://www.michigan.gov/air>). Also on that date, the AQD mailed letters to persons who had previously expressed interest. In addition, a notice announcing the Public Comment Period, Public Informational Meeting, and Public Hearing was placed in the *Sault St. Marie Evening News*. The notice provided pertinent information regarding the proposed action; the locations of available information; a telephone number to request additional information; the date, time, and location of the Public Informational Meeting and Public Hearing; the closing date of the Public Comment Period; and the address where written comments were being received.

The Informational Meeting was held on June 21, 2011, at the Kinross Charter Township Hall, 4884 West Curtis Street, Kincheloe, Michigan. This location was selected due to its proximity to the facility and the size of the room. Approximately 60 people attended the Informational Meeting. A panel of representatives from the AQD was available to answer questions regarding the proposed project. The meeting began at 6:05 p.m. and concluded at approximately 7:00 p.m.

The Public Hearing was held on June 21, 2011, at the Kinross Charter Township Hall, 4884 West Curtis Street, Kincheloe, Michigan. The hearing began at 7:10 p.m. with Ms. Barbara Rosenbaum as the Hearings Officer and Ms. Mary Ann Dolehanty representing Mr. Vinson Hellwig as the decision maker. Only comments on the proposed permit action were received. In addition, staff of the AQD was available outside the room to answer any questions. Approximately 70 were in attendance at the Public Hearing with 16 providing verbal comments. The Public Hearing concluded at 7:59 p.m.

Approximately 30 written comments were received during the Public Comment Period and the hearing.

The remainder of this document is a listing of the significant comments received during the public comment period and hearing regarding the proposed permit and the Department's response.

## II. SUMMARY OF SIGNIFICANT COMMENTS

### A. Public Health and Environment Concerns

#### Comment

There is a concern about the health effects of the pollution from the facility, including at the school that is  $\frac{3}{4}$  of a mile from the facility.

#### Response

The modeling of the facility's air emissions determined that the highest ambient air impacts would occur at the fence line, and would continue to disperse beyond that point so that air concentrations would be lower elsewhere. At the point of maximum impact, the modeled levels were below the health protective National Ambient Air Quality Standards (NAAQS) and air toxics screening levels. Those levels are designed to be protective of the public health, including sensitive subpopulations. Children at the school or elsewhere are not expected to be harmed by the emissions.

#### Comment

There is a concern for asthma and allergies, especially among Native Americans.

#### Response

According to the Michigan Department of Community Health (MDCH), the latest asthma survey data (for 2008-2010) are available at: [http://www.michigan.gov/mdch/0,1607,7-132-2945\\_5104\\_5279\\_39424---,00.html](http://www.michigan.gov/mdch/0,1607,7-132-2945_5104_5279_39424---,00.html). These data indicate that the current asthma prevalence rate for Chippewa County (11.7%; 95% confidence interval 6.7 to 19.7) is not higher than for Michigan (10.1%; 95% confidence interval 9.6 to 10.6). The rate for Native Americans in Michigan is 11.3 % (95% confidence interval 7.0 to 17.8%), which is not elevated over the rate for the total Michigan population. Data are not available by race/ethnicity for Chippewa County. Also, the asthma hospitalization rate (2007-2009) for Chippewa County (90.8 per 10,000 people) is not higher than for the state as a whole (158 per 10,000 people).

The facility emissions are not expected to be harmful to anyone. DEQ is confident that the regulatory requirements, including the NAAQS and the air toxics screening levels, provide safeguards against any adverse public health effects.

#### Comment

The combinations of pollutants can form conditions in the plume that are noxious to those exposed to the plume.

#### Response

The commenter is correct that the emissions will be a complex mixture. However, AQD does not expect that the facility emissions will cause adverse health effects. The assessment of the acceptability of ambient air impacts employed conservative assumptions, including a focus on the point of maximum impact associated with the maximum permitted emission rates, the use of conservatively derived health protective levels, and assuming that a person would be exposed

at the location with the highest impacts. These conservative assumptions indicate that the project will not cause adverse health effects.

Comment

The regulations applied to this facility are said to prevent undue harm to the public. But there are no baseline health studies for air. How can there be any legitimate conclusions on air quality changes from this facility when there is no baseline for comparison? There are no studies determining if local populations, young or old, already experience problems which can be exacerbated by more exposure.

Response

The commenter is correct that health statistics compiled by MDCH are generally readily available only at the county- or state-level. However, it may be reasonably assumed that sensitive individuals may reside in the local area. The health-based air toxics screening levels and the NAAQS are designed to be protective of the general population, including sensitive subgroups. The assessment of the facility emissions and ambient air impacts determined that the highest impacts would occur at the fence line and would be lower elsewhere due to dispersion. Sensitive subpopulations, even if residing at the fence line location with the highest modeled impacts, would not be expected to experience adverse health effects.

Comment

What will be the effects on wildlife and habitat? How will the particles in the air affect our watershed protection area?

Response

No adverse impacts are anticipated. The emissions from the facility will have ambient air impacts that are lower than the NAAQS for nitrogen dioxide, sulfur dioxide, carbon monoxide, particulate matter and lead that are designed to protect the public welfare, plants, wildlife, and the environment. Additionally, the ambient air impacts of the air toxics emissions will be lower than the screening levels that are protective of the public health, which may also provide a level of protection for wildlife and other animals. We are not aware of any information that the emissions and impacts may be harmful to wildlife or habitat.

Comment

What is the effect of the combination of pollution from Algoma Steel and Frontier?

Response

The ambient air impacts of the facility were not evaluated in combination with emissions from other air emission sources, except where background levels of criteria pollutants were accounted for in comparing the facility impacts to the NAAQS. Algoma Steel is located approximately 20 miles north of the facility, so there is not a reasonable expectation of significant cumulative impacts.

Comment

Particulates in the air will be a problem for people with breathing problems. The youngest, oldest and sickest will be affected most of all. No study has been done to determine what this facility will do to people with asthma. The facility will be close to residential housing. Air quality should be protected beyond government standards. What effect will the emissions have on heart attack victims?

Response

Some air pollutants, such as particulate matter, can adversely affect the respiratory and cardiovascular systems at sufficiently high levels and durations of exposure. The modeling of the facility's air emissions determined that the highest ambient air impacts would occur at the fence line, and would continue to disperse beyond that point so that air concentrations would be lower elsewhere. At the point of maximum impact, the modeled levels were below the health protective NAAQS and air toxics screening levels. Those protective levels are designed to be protective of the public health, including sensitive subpopulations. People with asthma or other respiratory diseases, or heart disease, will not be harmed by the emissions.

Comment

Sheep will pick up contaminants from the pasture. What will that do to the meat?

Response

No adverse impacts are anticipated. The commenter is correct that particulate matter in air emissions can result in some atmospheric deposition (fallout), but AQD does not anticipate that this facility would result in problematic deposition. The emissions from the facility would have ambient air impacts that are lower than the NAAQS that are designed to protect plants, among other things. We are not aware of any information that the emissions and impacts may be harmful to plant life or animals. There is no reasonable expectation that the emissions would adversely affect the meat of grazing animals.

Comment

What about endocrine disruptions from the pollutants?

Response

Some air toxics at sufficient exposure levels and when present at sensitive developmental stages have been shown to have the potential to cause particular types of adverse effects on organ development and function by affecting the body's endocrine systems. This is generally referred to as endocrine disruption. AQD has developed health-based screening levels that are designed to ensure protection from all known adverse effects of air toxics. The facility emissions have been modeled and found to have ambient air impacts that are lower than the health protective screening levels. AQD does not anticipate any adverse effects on endocrine systems.

Comment

Pollution from all of the truck and train traffic will affect the local residents.

AQD Response

The AQD cannot consider the emissions from mobile sources operating on local roads and rail lines in the review of this minor source permit application. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility, and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

Trees clean the air by sequestering CO<sub>2</sub>. When trees are cut down, they cannot sequester CO<sub>2</sub>. It takes many years for young trees to grow and replace this level of sequestering. The annual quantity of trees to be cut for this project without replanting will impact air quality for years to come. The DEQ's analysis for this project does not take into account the impact of tree removal on air quality. The air analysis rules should be more comprehensive.

AQD Response

The commenter is correct that the AQD's analysis does not take into account the impact of removal of trees associated with operation of the Frontier facility. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility, and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Both the state and federal air pollution control laws are established by the legislative process and any changes to the regulations must go through this process. These laws are in place to protect public health and welfare. The role of the AQD is to implement the laws.

Comment

The commenter stated that climate is changing causing more severe storms, increased temperatures and increased risk of fires, which is having an impact on health and growth of trees. Neither the DEQ's analysis nor the tree study reflect the impact of climate change on air quality and trees now or in the future.

AQD Response

The commenter is correct that the AQD's analysis does not take into account the impact of climate change on air quality and trees. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

As of the date of issuance of Permit to Install 166-09A, greenhouse gasses are not subject to regulation for Frontier's proposed facility.

**B. Air Toxics**

Comment

In the AQD Fact Sheet, the Rule 225 Toxics Analysis discussion says there are 17 toxic air contaminants (TACs) that do not have established screening levels and are therefore exempt from Rule 225. It cannot be said that these TACs will not be detrimental to human health if no screening levels have been set. If future information is made available showing they are dangerous to human health, screening levels must be set and applied to the Frontier facility.

AQD Response

The commenter is mistaken. The Fact Sheet does not state that the TACs without established screening levels are exempt from Rule 225. For each of the TACs without established screening levels, the AQD Toxics Unit evaluated the available toxicological information and the ambient impact from dispersion modeling and determined that the predicted ambient impacts of these TACs will comply with Rule 225.

General Condition 6 of the permit specifically states that operation of the proposed process shall comply with Rule 336.1901 (Rule 901). Rule 336.1901(a) (Rule 901(a)) states, in part, that “a person shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants... injurious effect to human health or safety....”

If, in the future, information about one or more of these TACs becomes available that indicates Frontier may be in violation of Rule 901(a), the final permit includes sufficient terms and conditions to allow the DEQ to enforce this rule and address any such problems in the community.

Comment

Silicate emissions need to be evaluated.

AQD Response

The facility’s fluidized bed boiler system will utilize silica sand. Although certain forms of silica can cause lung toxicity at sufficiently high levels and durations of exposure, DEQ does not anticipate that this will occur. There is a lack of information to estimate silica emissions from the boiler and the air pollution control equipment. We are unaware of any information that emissions may be significant and may harm the public health.

**C. Emergencies and Safety Concerns**

Comment

What if the train spills? There will be air and water contamination.

AQD Response

The federal Clean Air Act requires that many facilities file risk management plans (RMPs) with the U.S. Environmental Protection Agency (U.S. EPA) and work with the local emergency planning committee to ensure response plans are in place in the event of an emergency. Local governments and local emergency response entities, such as fire and police departments, have

primary responsibility for first response during emergencies. DEQ works with the primary responders in a support role during emergencies.

As part of the review of the air permit application, the AQD cannot evaluate the potential impact of train spills or other accidents, especially those that could occur outside the facility boundaries.

#### **D. Dispersion Modeling**

##### Comment

Page 4 of the Fact Sheet refers to Criteria Pollutants Modeling Analysis. It states that "The emissions from the proposed facility were evaluated for compliance with the applicable NAAQS and applicable PSD increments". Where and how has this type of modeling for pollutants been done before?

##### AQD Response

Dispersion modeling, using the U.S. EPA approved AERMOD dispersion modeling computer program, is routinely done to determine compliance with the NAAQS and Prevention of Significant Deterioration (PSD) increments. For "minor" projects, such as Frontier, the AQD does dispersion modeling for each criteria pollutant that is emitted in significant quantities, as defined in R 336.1119(e), from the proposed project to verify compliance with the NAAQS and PSD increments. For "major" projects, the state and federal regulations require the permit applicant to do the dispersion modeling, which is then verified by the AQD.

##### Comment

Any criteria pollutant modeling analysis must be done by the DEQ.

##### AQD Response

The AQD conducted an independent modeling analysis of the criteria pollutant emissions from the facility.

##### Comment

The plume will go out into the area; the air density (inversions) will allow it to come down. Emissions during inversions will overwhelm people with health problems.

##### AQD Response

Modeling was performed using actual meteorological data from the Chippewa County International Airport for the years 2005 - 2009. Weather situations, including inversions, which occurred during this time period, were taken into account in modeling. As stated previously, the modeling results showed the emissions from the facility are expected to be in compliance with the state and federal health based standards.

Comment

Were emissions from other facilities in the area considered, especially Algoma Steel?

AQD Response

Specific emissions from other facilities were not included in the modeling; however, for criteria pollutants, the background concentrations obtained from the air monitoring network were added to the modeled impacts. The sum of the modeled impacts and the background concentrations were then compared to the NAAQS. In the NO<sub>2</sub> modeling analysis for the proposed permit, the background monitor used is located within an industrial area in Sault Ste. Marie, Canada. Algoma Steel is also located in Sault Ste. Marie, Canada. Therefore, pollution concentrations from the Algoma Steel facility which impact this monitor were taken into consideration.

Comment

Pollution is carried in from other places.

AQD Response

Yes, pollution is carried in from other places. To account for this, the background concentrations of criteria pollutants obtained from the air monitoring network are added to the modeled impacts. The sum of the modeled impacts and the background concentrations are then compared to the NAAQS.

Comment

There will be peak times for emission of pollutants. These peaks, however, will be averaged with the lower emissions. At peak times the affect of pollutants will be more problematic for sensitive individuals.

AQD Response

The dispersion modeling evaluated the maximum peak emission rates for those criteria pollutants and TACs that have short term health based standards and showed that the peak emissions are expected to be below those short term health based standards.

**E. Odor Concerns**

Comment

There have been complaints from local residents regarding odors from operations burning biomass for cogeneration and corn ethanol facilities. This is an ongoing problem. No method has been identified by which the proposed Frontier plant will significantly change its operating procedures in comparison to other biomass plants to avoid the same problems. What proof is there that odors will be minimized?

AQD Response

The AQD has received very few odor complaints related to the combustion of biomass at cogeneration facilities or from corn ethanol plants currently operating in Michigan. The AQD does not expect the Frontier facility to generate odors. The required emission controls are expected to minimize odors from the facility. In addition, the permit conditions require Frontier to have an Odor Management Plan that includes "procedures for maintaining and operating

equipment in a manner that minimizes the release of odors to the outside air, and a program for corrective action for such events.”

Comment

Once the plant is in operation, complaints from the public on negative affects of odor and pollution will not be addressed satisfactorily. Then the public is in the situation of having to put up with conditions. There is no effective follow up with the public after completion of the project short of closing the plant.

AQD Response

The verification of a rule 901 violation is made by the AQD staff. A verification of a Rule 901 violation would require that the AQD staff person witness the odor, and make the determination that there was an “unreasonable interference with the comfortable enjoyment of life and property”.

An unreasonable interference would be indicated by odors of an intensity and frequency that a person would normally seek to avoid. AQD staff may survey neighbors in close proximity to the complainant to verify the existence of the odor in order to estimate the magnitude of the problem. AQD staff may visit the plant site and the surrounding areas more frequently when meteorological conditions are conducive for odors.

If there are odors from the facility, it is important to notify the AQD when the odors are transpiring so that the source of the odors may be determined. For odors or other air emissions, please contact AQD staff at the Upper Peninsula District Office at 906-346-8300. During non-business hours, contact the Pollution Emergency Alert System (PEAS) at 1-800-292-4706. AQD staff will investigate citizen complaints and evaluate reported incidents against the terms and conditions of the approved permit.

If a violation of Rule 901(b) should occur after the new process has commenced operation, the final permit includes sufficient terms and conditions to allow the DEQ to enforce this rule and address any such problems in the community.

Comment

“Comfortable enjoyment of life and property” is a meaningless term, subject to wide interpretation. There must be some way to define it that can be measured and enforced.

AQD Response

General Condition 6 of the permit specifically states that operation of the proposed process shall comply with Rule 336.1901 (Rule 901). Rule 336.1901(b) (Rule 901(b)) states, in part, that “a person shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants... (un)reasonable interference with the comfortable enjoyment of life and property.” AQD staff takes into account the ability of a process to comply with Rule 901 as a part of the permit review and does not recommend approval of any application that they believe will not be able to comply with the DEQ’s Rules for Air Pollution Control, including Rule 901.

**F. Best Available Control Technology (BACT) Review**

Comment

“Good combustion practices” is a subjective term. Those practices must be defined and applied to the Frontier cellulose ethanol facility.

AQD Response

Frontier will be required to verify that the volatile organic compound (VOC) emission rate from the boiler is less than the VOC emission limit of 0.01 lb/MMBtu through emission testing. During the testing, a variety of boiler operating parameters will be monitored. “Good combustion practices” will consist of Frontier operating the boiler in a manner consistent with operation during the emission test that demonstrated compliance with the VOC emission limit.

Comment

A best available control technology for toxics (T-BACT) review considers energy needs, environmental and economic impacts, and other costs. The health of human beings must be considered before anything else.

AQD Response

The R 336.1224 (Rule 224) T-BACT requirement applies to new, or modified, emission units that emit a TAC and which do not have a corresponding emission standard promulgated under Section 112 of the Clean Air Act or which emit TACs that are VOCs and are in compliance with BACT requirements.

T-BACT does not apply to Frontier’s proposed boiler because it is subject to the Boiler MACT, 40 Code of Federal Regulations (CFR) Part 63 Subpart JJJJJJ. T-BACT also does not apply to Frontier’s proposed emergency engines because they are subject to the RICE MACT, 40 CFR Part 63 Subpart ZZZZ.

Each emission unit emitting VOCs is expected to be in compliance with Rule 702 BACT requirements. Therefore, T-BACT does not apply to emission units emitting VOCs.

Comment

Reasonable control technology, in Rules R 336.1601 to R 336.1651, must be defined. If, in the future, better technology for dust control becomes available, it must be used whatever the cost.

AQD Response

Rules R 336.1601 to R 336.1651 apply to “existing sources” of VOC emissions. The current Part 6 Rules do not apply to Frontier as the facility is a “new source” rather than an “existing source” and is therefore subject to Rules R 336.1701 to R 336.1710 instead.

Comment

In Rules R 336.1801 to R 336.2804 and 40 CFR 52.21, economic issues must not influence the use of "Best Available Control technology." Health and environmental issues must come first. Profit must not be considered.

AQD Response

Rules R 336.1801 to R 336.1830, generally referred to as the "Part 18 Rules," and 40 CFR 52.21 apply to major PSD sources. Aside from R 336.2803, R 336.2804, 40 CFR 52.21(c), and 40 CFR 52.21(d), which establish the NAAQS and PSD increments, these rules do not apply to Frontier as the facility is a minor source, as discussed below.

**G. Permit Requirements**

**General**

Comment

One commenter stated that the stack is not tall enough.

AQD Response

The stack height requirements in the permit conditions were established based on the results of the dispersion modeling. The dispersion modeling showed that the stack heights required in the permit conditions are sufficient for the emissions from the facility to meet the state and federal health based standards.

**Emissions**

Comment

This is first wood to ethanol plant in the country with no track record.

AQD Response

The commenter is correct that the Frontier facility has no track record. However, emissions from the facility were estimated using the best data available. The permit conditions require Frontier to verify that the actual emissions are in compliance with the emission limits through emission testing.

Comment

The change in boilers will increase particulates in the air.

AQD Response

The commenter is correct that the particulate emissions from the facility will increase as a result of the change from natural gas boilers to a biomass boiler. The AQD evaluated the emissions from the biomass boiler and determined that the emissions will comply with the applicable state and federal requirements.

Comment

Regulations regarding dust control when dumping ash must be established.

AQD Response

The permit conditions require Frontier to conduct ash load out inside an enclosed shed and require use of a fabric filter dust collector to control particulate emissions from ash load out.

Comment

I am concerned that the emissions are close (85%) to the 250 ton per year threshold.

AQD Response

The 250 ton per year threshold is not a health based standard but rather is the threshold that determines whether or not the facility is a major source subject to regulation under the state and federal PSD permitting program. The margin between the permit emission limits and the 250 ton per year threshold is adequate to ensure that the facility will be a minor source. Frontier accepted the enforceable permit limits and the required record keeping to demonstrate that the facility operates below the 250 ton per year major source threshold.

**Testing**

Comment

Testing must be done by someone outside and not influenced by Frontier.

AQD Response

It is the responsibility of the owner of the facility to contract a certified tester and conduct and pay for emissions testing. However, the AQD's Technical Programs Unit reserves the right to witness the testing and thoroughly reviews test methods and reports before approving or denying results submitted by the tester.

**Monitoring**

Comment

Monitors should be placed around the fence to facilitate getting a handle on the process.

AQD Response

The proposed Frontier facility is a minor source. Monitors around the fence are not warranted for this minor source, especially since the dispersion modeling showed that the facility emissions are expected to be in compliance with the state and federal health based standards.

### **Process/Operational Limits**

#### **Comment**

Explain how operation of the emergency engines can be limited.

#### **AQD Response**

The permit limits the operation of the emergency engines to 500 hours per year per engine in order to limit the potential emissions from the engines. The permit review, including the emission estimates and dispersion modeling, are based on the engines operating 500 hours per year.

If Frontier were to operate either engine for more than 500 hours per year for any reason, including emergencies, they could be subject to enforcement action for violating the conditions of the permit.

### **H. Permit Review Process**

#### **Comment**

The differences between the original plan and the revised plan are significant. The ethanol production, wood usage, and wet cake dryer hourly production rates are all higher. Previously, waste from mills would have been utilized in the process. Now, only round logs would be utilized. The type of boiler and the scope of how it is going to operate have been changed.

Enough changes in the process are planned that a new scoping document should be required and performed to review, analyze and include opportunity for public comment on scoping, as was done for the first plan.

#### **AQD Response**

The AQD reviewed the entire revised facility, not just the differences between the original facility (PTI 166-09) and the revised facility (PTI 166-09A).

The ethanol production capacity, permitted wood throughput, and dryer production rate are all unchanged. It does not appear that "waste from mills" was considered a raw material for the original facility design. The design for original the facility and the revised facility include receipt of wood chips and whole logs.

The type of boiler has been changed. The AQD reviewed the biomass boiler and determined it would be able to operate in compliance with the applicable air quality rules and regulations.

The AQD did not prepare or review a "scoping document" during review of the previous permit application. Since the revised facility will continue to be a minor source under the state and federal New Source Review permitting requirements, no comprehensive environmental review of the facility is required or warranted prior to issuance of this minor source air permit.

Comment

What is the reasoning for reduction of fire pump capacity between the May 27, 2010 draft and the current draft?

AQD Response

The fire pump capacity has not changed; it is a 500 HP engine. The number and size of the emergency generators has changed, with one 1,500 HP generator instead of two 2,000 HP generators. The AQD reviewed the proposed engines and Frontier is required to comply with the permit conditions that apply to the emergency engines.

Comment

Does the term "load out" indicate that there is additional storage for lignin? Will there be any off site storage for lignin? Will it be for sale?

AQD Response

The facility includes a silo for lignin storage and a lignin load out shed. Frontier has not indicated that there will be off site lignin storage. To conservatively estimate the lignin load out emissions, the emission estimates assume that all of the lignin produced will be shipped off site. However, Frontier indicates that most of the lignin produced at the facility will be burned in the biomass boiler.

Comment

Frontier has in the past stated that it plans, in the future, to increase the amount of ethanol produced to 80 million gallons per year. If this is done, the emissions will be doubled and in some cases exceed the allowable limits. They must not be allowed to do this and Frontier must acknowledge this in writing.

AQD Response

In order to increase the capacity of the facility, Frontier would be required to obtain an air Permit to Install that would address the emissions from the expanded facility. Permit to Install 166-09A limits the facility's production to 40 million gallons per year. The AQD would not be able to approve a permit for a production increase unless it was demonstrated that the expanded facility would be able to comply with all applicable air quality rules and regulations.

The AQD has no authority to force Frontier to guarantee in writing that they will not seek to increase the capacity of the facility.

Comment

There were no studies from the prototype test facility in Rome, New York for this project to our knowledge. Now that the boiler system and the sources of fuel have changed, the prototype has no significance. There is no information to evaluate the actual performance of this process and no reliable basis for evaluating air quality.

AQD Response

As part of the permit application, Frontier provided emission test data from the Rome, New York pilot facility for the wood pretreatment train and the fermentation, yeast propagation and distillation processes. This data was used to estimate the acetaldehyde, acrolein, formaldehyde, methanol, and propionaldehyde emissions from these sources.

The emissions from the biomass boiler were estimated based on a variety of emission factors for natural gas combustion (which is used for boiler start up) and wood combustion. While the boiler will not be burning whole wood but rather bark and lignin generated at the facility, the emission factors used are believed to be representative of the emissions from the boiler because bark and lignin make up a significant portion of whole wood.

Verification of the biomass boiler through stack testing or continuous emission monitors is required in the permit conditions.

Comment

The proposed 1500 HP and 500 HP natural gas emergency fire pumps will add to the current VOC. Are other sources of VOC, such as, housing, prisons and other commercial businesses, taken into consideration?

AQD Response

The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility. Other sources of VOC were not taken into consideration.

Comment

It is stated that a fluidized bed boiler is to be utilized. There are three different types of fluidized bed boilers and since the early seventies there are many variations. Does this burning device meet or exceed European Union 503 air standards?

AQD Response

The AQD has not investigated whether or not the proposed boiler will meet or exceed the European Union 503 air standards. The AQD reviewed the fluidized bed biomass boiler and determined it would be able to operate in compliance with the applicable air quality rules and regulations.

Comment

The particulates emitted from the facility need to be identified.

AQD Response

A variety of emission factors were used to identify the specific pollutants emitted from the facility. In addition, particulate matter (PM), PM less than or equal to 10 microns diameter (PM10), and PM less than or equal to 2.5 microns diameter (PM2.5) are criteria pollutants and the emissions of PM10 and PM2.5 were determined to be in compliance with the federal NAAQS.

Comment

Ashes produced from the burning process will be toxic waste. There is no indication that the ash will be treated as toxic waste. No mention is made of the residues from the bag filters and what will happen to other elements of processing chemicals and materials. Flow charts of product and waste are not identified.

AQD Response

State and Federal regulations define wastes as “hazardous” and “non-hazardous” rather than “toxic” and “non-toxic”. Ash from the boiler is not expected to be considered hazardous by regulatory agencies. Ash will be disposed of in licensed landfills.

The material collected in the boiler fabric filter will be disposed of as ash. For the other fabric filters, material collected by the filter will be returned to the process.

The permit application included a process flow diagram for the facility.

**I. Public Participation Process**

Comment

No effort has been made to talk with members of the Sault Tribe itself who own a large amount of land close to the proposed site. The commenter is disappointed that the State didn't take into account meaningful tribal consultation with the two land-based tribes in Chippewa County. To date, we haven't heard from the State to the Tribe itself which is another government entity. We wish there would be more consideration taken in the fact that we have a vested interest in the environment.

AQD Response

The AQD has provided an effective mechanism for the consideration of concerns from all parties, including Tribes and tribal members, by establishing a public comment period between May 16 and June 21, 2011 and by holding a public hearing in Kincheloe on June 21, 2011.

In addition, the AQD, via the U.S. Environmental Protection Agency (U.S. EPA), provides the Inter-Tribal Council of Michigan a notice of its on-going permit activities to keep member Tribes informed of potential issues. The Frontier application was included in the notices sent to U.S. EPA on May 9 and June 14, 2011. The Sault Ste. Marie Tribe of Chippewa Indians is a member of the Inter-Tribal Council of Michigan.

The AQD also maintains a query on its website for all Permit to Install applications currently under review. This list is searchable by county and can be found at <http://www.deq.state.mi.us/aps/PendApps.asp>.

**J. Miscellaneous**

Comment

Many commenters expressed their opposition to the Frontier facility and requested that the AQD deny the permit. The Sault Ste. Marie tribe of Chippewa Indians and the Chippewa/Ottawa Resource Authority both passed resolutions in opposition to the permit.

AQD Response

The AQD cannot consider whether there is support or opposition to the proposed permit. Both the state and federal air pollution control laws are established by the legislative process and any changes to the regulations must go through this process. These laws are in place to protect public health and welfare. The role of the AQD is to implement the laws.

Comment

If emissions exceed limits, if terms and conditions are not met, the Frontier facility must not continue to operate.

AQD Response

Part 55 of Act 451 does not provide for the immediate shut-down of a facility found in violation of that statute, unless there is an imminent and substantial threat to public health. Section 5528 of Act 451 allows a violating company an opportunity to come back into compliance through the entry of a voluntary agreement or Consent Order. If a company refuses to enter into a voluntary settlement with the state, the DEQ can seek injunctive relief in court.

Comment

Air pollution standards and limitations set by the EPA have been lowered for ethanol production and the U.S. Senate voted to end ethanol subsidies. If subsidies for ethanol production are ended would the lower standards for air pollution emissions be eliminated as well? What impact would there be on this air quality permit, if approved? The repeal of the ethanol subsidies will likely impact this project.

AQD Response

The AQD is not aware of any recent changes to the EPA air quality rules and regulations for ethanol production.

The AQD cannot consider whether or not there are federal subsidies for ethanol production or what the affect the repeal of any subsidies would have on the viability of the Frontier facility. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

The Frontier Kinross project manager indicated at a meeting at the Ojibway Hotel last winter that they would be contacting Lake Superior State University (LSSU) about setting up a program to train specialized technicians to work for them, giving local people opportunities for employment. I recently phoned LSSU and they were unable to locate any information on such a

program proposal. This begs the question, is there really an intention to hire local workers for technical positions?

AQD Response

The AQD cannot consider whether or not Frontier intends to hire local workers. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

Results of air quality testing and monitoring should be made public in an accessible manner. A watchdog group of citizens should be formed to assure this is done. What plans do you have to facilitate this?

AQD Response

The results of air emission testing and the continuous emission monitoring data will be available to the public through the Freedom of Information Act.

The AQD has no plans to facilitate formation of a watchdog group of citizens.

Comment

There have been complaints from local residents regarding noise and local traffic from other facilities burning biomass for cogeneration and corn ethanol. Frontier has not indicated how it will avoid the same problems. The roads will be degraded due to the increased traffic.

AQD Response

Neither federal nor state air pollution control laws address noise or traffic. These are local ordinance issues handled by the local government. The AQD may not deny a source a permit to install on the grounds that the proposed activity fails to comply with local zoning ordinances.

The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

The residents don't want water pollution. Some of the air pollutants from the scrubbers will be captured in the waste water stream and emitted to the Munuscong River, which is a river our families have been fishing from for generations. The facility will rob our area of clean water by taking 200 gallons of water per minute.

AQD Response

The water from the facility scrubber will either be returned to the process or discharged to the municipal wastewater treatment facility. Any emissions to the air or groundwater from the wastewater treatment facility are the responsibility of that facility, not Frontier.

Frontier must comply with all applicable pollution standards regarding environmental media other than air. Water withdrawals and water discharges must be performed pursuant to the applicable legal requirements to protect public health and the environment.

The AQD cannot consider the facility's water usage or wastewater discharge. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

This plant would potentially generate increased economic activity and employ 50 people, but the jobs will never offset the loss of revenue from tax waivers. What cost are we going to endure for these jobs? If the plant closes in a few years, the community will be left with the mess.

AQD Response

The AQD cannot consider the potential economic impact of the facility. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

Profit speaks. The company and the agency have a total disregard for the planet, pitting the plant against people's livelihood.

AQD Response

Both the state and federal air pollution control laws are established by the legislative process and any changes to the regulations must go through this process. These laws are in place to protect public health and welfare. The role of the AQD is to implement the laws.

Comment

The project is not sustainable; the amount of energy to operate the plant will be greater than the amount of energy produced from the ethanol. The project in effect will be a net energy loss and not a green project.

AQD Response

The AQD cannot consider whether or not the project will be a net energy loss or if the project is a "green" project. The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

Comment

The facility will use too much wood and destroy the forests. The facility will unfairly compete for resources with the area's timber industry, potentially leading to job losses. The production of wood ethanol will contribute to an increase in the cost of forest products. It will take years to renew hardwood forests lost to wood ethanol production.

The best way to use the forest resources is not to burn them, but to use value-added manufacturing which will increase employment, benefit the environment and health and provide more income. If there were more smaller value-added companies, more employment would be created and the availability of higher quality timber would increase.

#### AQD Response

The AQD cannot consider the impact the facility may have on the timber industry, the cost of forest products, the time it may take to renew the hardwood forest used by the facility, or the amount of wood that the facility will consume, aside from emissions due to processing the wood at the facility. The AQD also has no authority to determine the best use of forest resources.

The authority of the AQD is limited to conducting a technical evaluation of the air emissions from the proposed Frontier facility and issuance of the permit is based solely on expected compliance with all applicable state and federal air quality rules and regulations.

#### Comment

There was a coal burning plant that provided power to the Air Force base. What were the particulate emissions from that plant?

#### AQD Response

Based on emission information reported for the three coal fired boilers that supplied the former Air Force base and later the Kinross Correctional Facility, the particulate emissions were 9.2 tons per year on average from 1993 through 2004.

#### Comment

The facility will alter the habitat and wildlife, and consequently, the hunting lands that are part of our treaty rights from the ceded territory in the 1836 Treaty. We have hunting, fishing and gathering rights and this is going to affect our treaty rights as well as the quality of life.

#### AQD Response

The AQD is neither required by law nor qualified to perform an analysis on hunting, fishing or gathering sustainability. The Michigan Department of Natural Resources (DNR) manages these Michigan resources based on the principles of sound scientific management. The AQD defers the concerns on such issues to the DNR and to the consultation protocol and Article 13 rights delineated in the 2007 Inland Consent Decree.

### **III. SUMMARY OF COMMENTS RECEIVED IN SUPPORT**

The following is a list of the benefits cited in the verbal testimony and letters received:

- The project will help sustain a robust rural economy.
- The project will help reduce our dependence on foreign oil and create Michigan jobs.
- The project will create more than 150 local construction jobs, approximately 70 full-time facility positions, and more than 500 spin off jobs in manufacturing, agriculture, and forestry.
- The project will produce low-cost, low-carbon cellulosic ethanol.
- Frontier will be among the first to operate a commercial scale cellulosic ethanol biorefinery in the United States, putting Michigan in a position to become a leader in clean energy.
- The project will mean long term job stability and growth for the Upper Peninsula and Northern Lower Peninsula after years of job losses and plant closings.
- Use of biomass instead of natural gas is an improvement and will reduce the fossil fuel carbon dioxide emissions.
- The DEQ completed a detailed evaluation of the facility emissions and determined that even under maximum production rates, the facility will not cause or contribute to an exceedance of the NAAQS or the Michigan TAC Standards.

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