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**Comments Opposing Proposed Permit for “Navitus Sustainable Industries South Valley Recycling and Renewable Power Facility” N14947-0001**

Greenaction for Health and Environmental Justice submits these comments in opposition to the proposed permit and Approval Order for “Navitus Sustainable Industries South Valley Recycling and Renewable Power Facility.”

We respectfully urge the Utah Division of Air Quality to reject the permit application due to the

- (1) proposed project’s potentially significant air pollution in a non-attainment area already suffering from unacceptably poor air quality;
- (2) inaccurate, misleading and missing “information” submitted by project applicant;
- (3) inaccurate, inadequate and biased analysis of the proposed project and its potential impacts by DAQ;
- (4) inadequate proposed permit conditions; and
- (5) the tainting of the public review process due to the inaccurate and misleading statements and omissions in documents provided by the project applicant and DAQ.

**I. Pyrolysis Gasification and Syngas Combustion Should Not Be Permitted in a Non-attainment area:**

A new source of hazardous and criteria air pollutants should not be permitted in this non-attainment area as it will potentially increase existing risks. Sandy is located in Salt Lake County, a non-attainment area for PM10, PM2.5, SO2, and a maintenance area for Ozone.

This concern is serious as this technology and type of facility is essentially experimental. To our knowledge, there are not and never have been any pyrolysis or other types of commercial

gasification facilities operated in the United States. The project proponent, Navitus Sustainable Industries” (“Navitus”) has not to our knowledge ever operated any such facility and a review of permit documents and the company’s website does not identify any model commercial facility in the world using this technology.

Emissions data from a pyrolysis gasification/syngas combustion test facility that was located in Romoland, California showed that a wide range of hazardous pollutants were emitted and the company was never able to secure permits. We attach and incorporate emissions information from the Romoland tests as Exhibits 1 and 2.

## **II. Defects in Navitus Sustainable Industries’ Notice of Intent**

### **A. Incorrect description of the syngas:**

There are major problems in the Notice of Intent submitted by Navitus that should result in DAQ’s rejection of the permit application.

Navitus states in their Notice of Intent (section A.1 Process Description): “The *syngas (methane gas)* is then fed to an internal combustion engine to generate electricity to sale to the local utility grid.” (*emphasis added*).

However, the syngas is not just methane gas but would contain non-methane constituents including hazardous contaminants.

In fact, later in the NOI (section A.3 Thermal Chemical Reactor and Heater Assembly) Navitus acknowledges that the fuel is not just methane when they write that “The methane gas will be the *primary fuel* used during normal process operations.” (*emphasis added*). This Navitus statement that the methane gas will be the primary fuel is an acknowledgement that the fuel (i.e. syngas) contains constituents other than methane, contradicting their earlier claim that the syngas is methane gas.

### **B. Emissions Calculations were based on methane gas, not based on accurate syngas composition, and therefore may be seriously flawed and underestimated:**

Navitus never used this equipment on a commercial scale anywhere, so it is essential as always that the calculations of emissions be as accurate as possible so the project can be properly evaluated.

The Notice of Intent in Appendix C- Emissions Calculations, states that the objective was to “*Calculate emissions based on a Methane Gas Flow* rate and engine characteristics.” (*emphasis added*).

Therefore it appears that the emission calculations were based on a syngas comprised entirely of methane, but the syngas would not be all methane, as Navitus elsewhere admits. This error likely resulted in an underestimation of hazardous air emissions.

Furthermore, emissions of dioxins and furans were not calculated, despite the fact that there will be chlorinated waste fed into the pyrolysis equipment, that oxygen is present in the municipal solid waste (MSW), and despite the fact that emissions data from a pyrolysis test plant in California confirms dioxin emissions.

DAQ should have rejected this Notice of Intent due to the serious incorrect description of the syngas, a core element of the proposed project, and due to the problems with emissions calculations and predictions.

**C. Where is the Stack? Stack description not in Notice of Intent or equipment list:**

While the very first thing in Navitus' Notice of Intent is a picture of the front of a building at their proposed facility along with blue sky and mountains, nowhere does it contain a picture or description of the stacks that would emit the pollutants into the air.

Very importantly, the equipment list in the NOI omits the four stacks where emissions from the combustion of syngas would be emitted. This is a vital piece of information that is missing from the Notice of Intent and even from their website and promotional material. The stack equipment is also missing from the DAQ's Intent to Approve.

**D. Emergency Flare:**

According to the NOI, "Navitus anticipates operation of this emergency enclosed flare to be less than 50 hours per year."

What factual evidence backs up this claim? Navitus has never operated this technology on a commercial scale and has not pointed to any other company's experience with the equipment on a commercial scale.

It is extremely important to understand at least approximately how often and for how long the emergency flare might be used so that a full picture of potential emissions and the project's potential impacts can be identified.

**III. Major Problems and Omissions: Attachment 1- Application Forms:**

DAQ has a link to "Additional information" that is a DAQ form that apparently Navitus was supposed to fill out as part of their permit application. The link provided by DAQ for this is:

<http://www.deq.utah.gov/businesses/N/Navitus/docs/2015/01Jan/NavitusNOISandyAirPermitAdditional.pdf>

We attach and incorporate this document as Exhibit 3.

This document, as part of the administrative record, is also a document that the public is entitled to comment on during the public comment period.

Curiously, improperly and unfortunately, the form was not filled out fully and in fact most of the information that was supposed to be on the form is not there.

Specifically, the following requested information in the application form is missing from the document posted by DAQ:

- Installation address, coordinates, phone and fax numbers
- Standby generator information
- Calculated emissions for this equipment
- Emission sources – the only thing they typed in is the number/name of one piece of equipment and listed NO<sub>x</sub> as the component or air contaminant name. Obviously there are more emissions sources and air contaminants.
- Baghouses – much of this form is not filled out including in the section on gas stream characteristics, equipment information and filter characteristics, and calculated emissions for this device.
- Flare Systems – the information on manufacturer, model number, and percent of time, design maximum, temperature and pressure is all blank. In addition, the pyrolysis gas composition is not described. Steam injection, water injection and emissions calculations for this device are also blank.
- Process Data – make/model is blank, year installed, quarterly percentage information, hourly production rates, maximum annual production left blank.
- Process Data- in section 11 “Materials used in process” it only mentions MSW, not industrial waste. However industrial waste is part of the permit application.
- Process Data – section 12 on control equipment, stack data, and emissions calculations is completely blank.

DAQ should not approve an application that is apparently incomplete, and thus should deny the application.

In addition, as the public is entitled to comment on all relevant documents but clearly is unable to comment on this incomplete document that is missing most of the required and relevant information, this incomplete form constitutes a major flaw and defect in the permit and public comment process. As a result, the permit based in part on this document cannot be approved.

#### **IV. Navitus Engineering Review: “Utah Division of Air Quality Source Plan Review”**

##### **A. DAQ’s Description of Proposal is Flawed:**

- Significant percentage of feedstock is recyclable, contrary to claim: DAQ claims that the MSW that would be gasified in the pyrolysis equipment is non-recyclable. However, the experience of many cities and counties across this nation and world show that far more household “garbage” can be recycled than Navitus proposes to do.
- Syngas is not just methane gas: As discussed above, the syngas would not just be methane gas. Despite that fact, once again DAQ mischaracterizes the content of the syngas by saying on page 3 of the Review “The syngas (methane gas) is then fed to an internal combustion engine to generate electricity to sale to the local utility grid.”
- Internal combustion engine combusts the syngas: DAQ states that the syngas is fed into the internal combustion engine but then fails to describe the last step in the process – the burning of the syngas after it is fed into the engine.
- Summary of Emissions Totals: As discussed above, it appears that emissions were calculated based on methane gas flow rate, not the full and accurate content of the syngas.
- Equipment list omits the four stacks:

**V. DAQ’s Intent to Approve Is Defective and Flawed:**

**A. DAQ Must Ensure Public Comment is Meaningful:**

DAQ states that it supports the right of the public to comment on projects such as this proposed project. However, this public comment right must be meaningful, and public comments that are accurate and raise substantial points must be considered and addressed.

DAQ’s Intent to Approve notice states regarding public comment that “The proposed conditions of the AO may be changed as the result of the comments received.” This statement and approach to permit review is biased in favor of the industry applicant and renders public opposition essentially meaningless. If DAQ receives comments that can document why a permit is not proper, the result should be a permit denial not a change in conditions of a permit. The DAQ’s approach to this permit application is essentially a rubber stamp.

**B. Equipment list is incomplete and misleading:**

The DAQ’s Equipment list is incomplete and misleading. DAQ’s Intent to Approve lists the equipment they intend to approve:

“Material Recover Facility System,”

“Pyrolysis System”  
“Internal Combustion Engines”  
“Dryers”  
“Baghouse”  
“Emergency Flare”  
“Emergency Generator”  
“Fire Water Pump”  
“Syngas Storage”

DAQ improperly omitted the four exhaust stacks for the emissions from the combustion of the syngas in the list of equipment they intend to approve. The DAQ thus omits the same vital information that was omitted by Navitus in their Notice of Intent.

**C. Fuel Source would be Syngas, not just Methane:**

The Intent to Approve states that Navitus has applied to the DAQ requested an Approval Order “...to construct and operate an industrial byproduct recovery facility to generate methane gas. The methane gas is used as a fuel source in (4) four Internal Combustion engines which generate electricity.” (Abstract, DAQ Intent to Approve Navitus)

Both DAQ and Navitus incorrectly describe the fuel source as methane.

In the Intent to Approve, Special Conditions II.A.4, states that the fuel source is methane. However the fuel source is not just methane, but instead is a syngas that contains hazardous constituents that when incinerated in the internal combustion engines will emit hazardous air pollutants into the non-attainment area’s air.

**D. Proposed Stack Testing Inadequate and Threatens the Health of Residents:**

DAQ’s proposed stack testing requirements are completely inadequate and put residents’ health and air quality at risk:

DAQ’s proposed Approval Order would allow this company to pollute the air with their new and any modified equipment for up to six months without stack testing being done. This condition is reckless and allows this technology which has never operated commercially anywhere to pollute the air without any verification that it is safe.

DAQ would require testing only for NOx, CO and VOCs, not hazardous air pollutants. Despite the fact that the combustion of the syngas will certainly result in emissions of hazardous air pollutants, likely including dioxins, DAQ improperly is not requiring testing or monitoring for hazardous air pollutants.

**VI. DEQ/DAQ Provided Biased and Misleading Public Relations for Navitus:**



The above picture is from the DEQ’s website on a page entitled “Navitus South Valley Recycling and Renewable Power - Approval Order Request” and the page is found at <http://www.deq.utah.gov/businesses/N/Navitus/apporderreq.htm>

Apparently DAQ copied this public relations photo either from Navitus’ website or their Notice of Intent.

This picture may be of a sparkling new building with blue sky and mountains, but key aspects of the facility including the emissions stacks are completely omitted. If DEQ and DAQ are not trying to be misleading, then a full picture and diagram with specifics about the proposed facility should be provided, not just a company public relations photo.

**VII. DAQ’S “Fact sheet” is a biased document containing misleading and incorrect statements:**

DAQ has published and distributed a document called a “fact sheet” on the proposed project and it can be found at <http://www.deq.utah.gov/Topics/FactSheets/docs/handouts/2015/01Jan/Navitus.pdf>

This DAQ document is biased in favor of the project, containing misleading and incorrect statements and omitting key information. A result of these defects and problems is that the public’s ability to review, comment and exercise their lawful rights to participate in the public comment period has been compromised. Many members of the public who review DAQ’s “fact sheet” and permit review documents (with their inaccuracies and omission of key information) likely would think the project is not of concern and would thus not comment on the project.

**A. Waste to Energy Facility?**

DAQ’s “fact sheet” refers to the proposed plant as a “waste to energy” facility. However, there is no information about any similar facility using pyrolysis gasification operated by Navitus or

anyone else that actually generated or generates energy on a commercial scale. In fact, we know of no such facility that has generated significant energy.

DAQ states that “Municipalities have begun to turn to WTE facilities as an alternate way to manage MSW, control waste emissions, and generate power.”

DAQ’s statement is misleading as no municipality in the US to our knowledge has approved a commercial pyrolysis gasification facility for municipal solid waste or industrial waste, and to our knowledge no such facility exists in the US. In fact, many municipalities and counties have rejected proposed gasification facilities after embracing them once the claims were investigated and found to be false or exaggerated.

DAQ’s statement is further misleading as neither the company or DAQ has offered any evidence that this technology can actually generate a significant net output of energy.

**B. DAQ’s claim that the conversion takes place in absence of oxygen is incorrect:**

DAQ’s “fact sheet” claims “It differs from combustion or incineration because the conversion to gas takes place in the absence of oxygen.” In fact, municipal solid waste contains oxygen, and tests and evaluations from pyrolysis equipment in California confirmed dioxin emissions from the combustion of the gases (see South Coast Air Quality Management District evaluation of Romoland pyrolysis equipment, attached and incorporated into these comments). Dioxin formation requires the presence of oxygen.

**C. DAQ’s fact sheet is misleading due to omission of incineration component of the proposed project:**

While it is true that the pyrolysis gasification involves heating not burning the waste feedstock, the second and essential stage of the process for which Navitus seeks approval is the combustion of the syngas in the internal combustion engines.

DAQ improperly leaves out this fact of combustion of the syngas in their so-called “fact sheet.”

**VIII. DAQ should not approve permit for company making misleading and inaccurate claims:**

An Approval Order for the proposed Navitus facility in Sandy would allow this company to build and operate a facility using pyrolysis gasification of municipal and industrial wastes and combustion of the syngas. As this company has never operated such a commercial facility and has not documented where if anywhere their equipment has been commercially proven for this or any other waste stream, the accuracy of comments from this company are vital to a permit decision.

Navitus’ website contains troubling claims, many of which are inaccurate and/or misleading.



Their website makes many claims implying they already have these facilities and are already generating power.

For example, their website at <http://www.navitusrenewables.com/productsgrid.html> states: ***“Each Renewable Power Center has a significant positive impact on the environment.”*** (*emphasis added*).

The truth however is that they have no such Centers and these non-existent Centers have not had any impact on any community anywhere. To be accurate, Navitus could have stated that they believe their facilities can have a positive impact, but to claim that each center “has” a positive impact is simply misleading.

Another example is that in Navitus Renewable Energy/About Navitus section, they state in the present tense: ***“We transform an entire community's garbage into a truly sustainable solution.....We then transform everything else into a clean synthetic gas, which is used to generate local community power.”*** (*emphasis added*).....

<http://www.navitusrenewables.com/about.html>

However we have not seen any evidence that they have ever transformed any “entire community’s garbage” into anything, nor have they generated local community power.

They also claim ***“NAVITUS Renewable Power & Recycling Centers generate clean energy utilizing state of the art, closed loop CHP Biomass Gasification systems. Clean renewable power is generated and distributed locally....”*** (*emphasis added*)

<http://www.navitusrenewables.com/services.html>

The above claim is also apparently misleading, as to our knowledge there are no such centers, and they therefore do not generate or distribute any power.

Very importantly, the claim that energy is generated using a closed loop system is misleading. While the pyrolysis is in a closed chamber, the gases which contain toxics would then be burned and a wide range of pollutants emitted, including toxic air contaminants. The truth is that the process to attempt to generate energy is not a closed loop system but rather involves directly feeding the syngas into the internal combustion engines where it is incinerated, emitting hazardous and criteria pollutants into the air.

For the above reasons, we call on the Utah Division of Air Quality to deny the permit.

Respectfully submitted,



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