



Comments/Questions: SOLID WASTE

How much MSW is being proposed to combust? There is some confusion about it being 408 tons, including tires it would be 414 tons.

Dynamis will process on an average of 408 tons per day of municipal solid waste including tires. The 408 tons is a calculated tonnage based on average MSW characteristics such as density, moisture, and Btu value. This tonnage will vary from day to day and seasonally, depending on the constituents of the waste. For example, the trash contents from a rainy Monday morning in April may contain substantial amounts of wet freshly cut grass clippings. Therefore, the total tonnage required to produce the steam for power will be more on this day than the waste produced on a dry October day. The tonnage of tires processed each day will be approximately 1.5%-10% of the waste stream. For example, if 5% of the waste stream on a given day were tires, 20.4 tons of tires would be processed and 387.6 tons of MSW would be processed that day.

How much is Ash? How much ash is going to the Secondary? Where does secondary ash go and how much is it?

The ash accounts for approximately 5% of the total volume that goes into our system. 7 pounds per hour of particulates enter the Secondary during peak operation, which is before it enters the scrubber for filtration. Remaining particulates are processed in the scrubber upon leaving the Secondary.

Who owns the trash and ash?

When the trash enters the landfill, it is owned by Ada County. Once the trash is diverted to the Dynamis facility, the ownership is that of Dynamis.

How is ash to be disposed of?

Ferrous metals and aluminum will be separated from the ash and recycled. The remaining ash will be handled by a combination of recycling and/or disposed of in the landfill depending on markets.

Will ash be tested and analyzed?

Yes.

What's the toxicity of the ash that is placed in the landfill?

In the samples we have run on the ash, it is below hazardous regulatory levels. Routine testing will be used to continually verify this. Furthermore, the contents of the ash are the remains of MSW that was otherwise going directly to the landfill.

Will records be available?

Yes. Records required to be submitted to DEQ and EPA and available for the public.

Will there be storage of trash? What is the protocol for monitoring and storing of trash?

Yes. Due to the variation in trash delivery schedules, there will be short-term storage on the tipping floor in order to maintain a consistent flow of trash to the facility, as well as to stage MSW for processing on the weekends and holidays. All MSW will be weighed and recorded at the landfill scales prior to being diverted to the WTE facility.

Who is responsible for preparing waste?

No preparation is required.

Per supporting application documentation for loads housed and processed in the facility, STRATA (Tab 7, page 3) assumes that Dynamis will process 5 to 325 tons per 12 hour period within the facility. STRATA's assumptions equate to only 78.5% of Dynamis' stated daily total of 414 combustible tons. In addition, Dynamis proposes to stockpile 1224 tons per week for combustion when MSW deliveries aren't made on weekends and holidays. Dynamis/STRATA need to be apprised of the discrepancies, and examine and correct/verify the design rationale for daily/weekly site loads housed and processed at the facility.

Noted.

The application includes a letter (June 30, 2010-Commissioners Office to Mahaffey) from Ada County Commissioners Office, indicating a preliminary commitment to a 250 ton per day operation. That letter does not support combustion of 408 tons per day of MSW, plus 12,000 pounds per day of tires.

Negotiations made in good faith between Ada County and Dynamis resulted in a Franchise Agreement, in which up to 572 tons of MSW is to be delivered to the facility on weekdays, of which 408 tons will be processed on a 7-day week basis.

Although possession and ownership of MSW are defined, is it still MSW when Dynamis takes possession? Because the residuals from combustion will be deposited in Ada County owned landfills, are by-products considered to be MSW? If so, at what point, if ever, does title to the residuals from combusted materials revert to Ada County, or, is future liability limited to Dynamis?

Dynamis is responsible for delivering the residual ash to the landfill.

For clarification, not all by-products are landfilled. Ferrous and non-ferrous metals are separated and recycled.

Site the facility away from towns and out of the foothills to minimize the dangerous buildup of pollutants in populated areas. Haul garbage there on an as needed basis. *The Dynamis WTE facility has been designed in conjunction and in association with the existing location of the Hidden Hollow Landfill.*

Dynamis' plan to identify and divert unacceptable waste from combustion site is flawed. They rely on landfill employees to divert truckloads of suspicious material away from the facility—a leap of faith in the ability of booth operators to inspect closed trucks, and, they state that Dynamis employees “can” inspect MSW on the tipping floor for banned substances, not “will” sort through the refuse. Unless, and until, Dynamis and Ada County come up with a defined protocol to eliminate toxics, the proposed facility lacks credibility.

Dynamis' proposed procedures for inspecting waste is an additional check that is currently non-existent for all waste that goes directly to the landfill. Additionally, observing the waste gives Dynamis the ability to remove undesirable waste that could impact the system's performance.

Dynamis Energy, LLC and Ada County should provide the public, stakeholders, and DEQ with:

1. A statement regarding the actual tonnage of Municipal Solid Waste and tires, which will be processed the WTE Project.
Dynamis will process on an average of 408 tons per day of municipal solid waste including tires. The 408 tons is a calculated tonnage based on average MSW characteristics such as density, moisture, and Btu value. This tonnage will vary from day to day and seasonally, depending on the constituents of the waste. For example, the trash contents from a rainy Monday morning in April may contain substantial amounts of wet freshly cut grass clippings. Therefore, the total tonnage required to produce the steam for power will be more on this day than the waste produced on a dry October day. The tonnage of tires processed each day will be approximately 1.5%-10% of the waste stream. For example, if 5% of the waste stream on a given day were tires, 20.4 tons of tires would be processed and 387.6 tons of MSW would be processed that day.
2. Engineering and/or environmental studies or surveys related to the expected residual and/or resulting ash, waste, and/or by-products from the combustion process.
Engineering and Environmental studies have been done and all required data and studies have been submitted with the application.
3. Assurance that the WTE Project and the residual solid waste, ash, and/or other resulting by-products of the WTE process will meet current DEQ and EPA regulations and requirements and that these by-products will not cause potential harm to the watershed or water table.
The process and procedures followed are in accordance with DEQ and EPA regulations and permits are awarded accordingly. The issuance and

- maintenance of these permits provides the assurance that the WTE process meets the current DEQ and EPA regulations and requirements.*
4. A detailed description of the monitoring process and systems to be used to monitor the disposal and impact of ash, by products, and/or resulting residual solid waste from the WTE Project.
A description of the monitoring process will be submitted in conjunction with the Operations Plan application and is outside the scope of current applications.

Data from Alaska and Wyoming that will be used to construct AQ models must be available for public scrutiny. Models are no good unless the input data is real. Thus, test data from the 30+ technology proof-of-concept demonstrations needs to be provided prior to approval of the site plan application. The following should be provided:

Location of each proof-of-concept test;

Proof of concept tests were performed on the plant in Anchorage Alaska and at the Western Research Institute in Laramie, Wyoming. Additionally, source test data will be collected from the Dynamis facility in Ada county and verified against the modeled emissions. DEQ will not allow the facility to operate if emissions are not in compliance.

Date of each proof of concept test;

Proof of concept tests were performed between December 1990 and May 1993.

Name of process used in the proof of concept test (since the proposed technology is “experimental,” was each proof of concept cited using a comparable process to that proposed?);

The Dynamis system will utilize the same thermal oxidation process that the proof of concept tests used. The technology is not experimental.

Length of process to combust;

Typical processing time of materials per chamber is between 8 and 12 hours.

Source of combustion ignition;

The process is initiated with natural gas combustion.

Length of combustion ignition;

Ignition time varies depending on the characteristics of the waste stream. Typical ignition time is around 5 minutes.

Tons of MSW combusted in primary combustion;

Proof of concept tests utilized varying amounts of MSW. The Dynamis system will use a nominal 34 tons of MSW in each primary chamber.

Composition of MSW combustion;

The MSW composition varies. Typical MSW is composed of: paper, cardboard, metal, plastics, rubber (including tires), glass, wood, dirt, leather, fabrics, food scraps, yard waste and water.

Pounds of tires combusted in primary process;
Proof of concept tests were performed with 100% MSW, 50% tire/50% MSW and 100% tire mixes. The Dynamis system will process MSW with an estimated composition ranging between 1.5%-5% tires. At 2% this is approximately 1300 lbs of tires processed in each primary chamber.

Mass of residual ash from primary combustion;
Residual ash is approximately 10% (by mass) of the processed material.

Composition of residual ash from primary combustion;
Ash is composed of any material that will not breakdown at the primary chamber temperatures.

Mass of syn-gas produced in the primary process;
Total syn-gas mass is approximately equal to the mass of the material in each primary chamber plus oxidizing air, minus the mass of the ash.

Composition of primary gas created to be combusted for heat;
The composition of the gas created in the primary chamber varies depending on the types of material loaded into the primary chamber. CO, O₂, and hydrocarbon gases are all continuously monitored to evaluate the syn-gas composition.

Source of ignition for secondary combustion;
Secondary combustion is initiated using natural gas. Upon initial ignition, the syn-gas will go into "auto-burn" meaning it continually burns without the use of natural gas.

Length of secondary (syn-gas) combustion;
Combustion of syn-gas in the secondary chamber occurs for a minimum of 2 seconds.

Quantity of syn-gas combusted;
All syn-gas that enters the secondary combustion chamber is combusted. This equals the sum of gas generated from all primary chambers.

Residual masses of solids, liquids, and gases combusted in syn-gas combustion;
Solids exiting the secondary system are described in the siting analysis air quality impacts report under the "potential to emit-PM10/PM2.5 emissions." Liquid mass exiting the secondary chamber is in the form of water vapor due to the high temperature. The mass is dependent on MSW and air moisture content. Gas mass exiting the secondary chamber is the combination of stoichiometric combustion of the syn-gas plus excess combustion air.

Composition of residual solids, liquids and gases from syn-gas combustion;

Oxygen, nitrogen, carbon dioxide, water and argon account for 99.98% of the resultant products exiting the secondary chamber. The remaining 0.02% of the products are detailed in the siting analysis air quality impacts report under the "potential to emit" section.

*Disposal of secondary syn-gas combustion bi-products;
All combustion bi-products pass through the flue gas treatment system and toxic air pollutants are removed to levels below NAAQS and EPA limits.*

*****The following comments have been noted, but are not Solid Waste issues.*****

*The numbers (air pollutants) presented were a small fraction of EPA allowances for most of the pollutant stream, but when asked if they would stand behind those numbers and be accountable for the numbers presented, they said no, they will be accountable only to the EPA standards for the pollutants presented.
Dynamis is accountable to the DEQ for the numbers presented in the Air Quality Model control test, which are stricter than EPA allowances.*

*Permit the site, but require that Dynamis fund DEQ's air monitoring of the site and monitoring of inversion potentials. Also require Dynamis to agree to trigger points and shut down procedures to avoid pollutant buildups during inversions.
Dynamis will pay for the air monitoring of the site. Dynamis will comply with DEQ protocol if the system becomes non-compliant. Additionally, see the numbers and statistics in our Air Quality Model testing in regards to the low-level pollutant stream emitted from our facility.*

*Permit the site, but restrain their pollutant stream to the estimated levels they presented to us here in Hidden Springs.
Dynamis is responsible for the numbers present in our Air Quality Model, which the DEQ will enforce. In most cases, these numbers in fact are more stringent than the EPA requirements.*

Dynamis Energy, LLC and Ada County should provide the public, stakeholders, and the DEQ with:

- 1. Engineering and/or environmental studies or survey related to the expected air emissions from the WTE Project.
These studies are found in our Air Quality Model submitted by JBR Environmental Consultants addressed to the DEQ.*
- 2. Assurance that the WTE Project and the associated emissions will meet current DEQ and EPA regulations and requirements.
The monitoring required, assures that the system emissions are within permitted requirements.*

3. A detailed description of the monitoring process and systems to be used to monitor stack and other air and noise emissions from the WTE Project. *The process is outlined in CFR-40 Part 60 Subpart Eb and the equipment and procedures are being designed to comply with these requirements. Noise is outside the scope of current applications, however noise is not expected to be a problem. The only potential significant noise emitter would be the cooling fans which at 30 feet registers at approximately 65 decibels. To make a comparison, a common vacuum cleaner registers at 70 decibels. The closest residence is approximately one mile away from the site.*

4. A financial statement and/or financial projections related to the economic viability of the WTE Project and some assurance that Dynamis Energy can support the costs and expenses associated with the WTE Project. *Dynamis Energy, LLC is interested in succeeding on many different levels. After thoroughly studying the viability of a project in Ada County, Dynamis can support the costs and expenses associated with the project.*

This facility, apparently, is an untested prototype- with operating standards and emissions controls just general Dynamis estimates.

This WTE plant in Ada County is not an untested prototype. Prototypes were made and tested in the 1990's in Laramie, Wyoming and Anchorage, AK. A plant has been in operation in Barrow, AK since 1995.

Dynamis has acknowledged that dioxins will also be part of the pollutant stream. I understand that there are no EPA standards for a "safe" or "acceptable" level of dioxin emissions.

There are EPA standards for dioxin emissions located in CFR Title 40 Part 60 Subpart Eb- "Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996." The facility is subject to those standards.

It seems to be to be irresponsible to permit waste incineration in the heart of southern Idaho's population center – Boise and Ada County.

The Dynamis facility is a technology that uses thermal oxidation or gasification, which is not incineration and has very distinct characteristics from an incineration process.

The application has no data on the septic field delineated in the plan, or contents of discharges to it.

The septic system is for the domestic sewage only.

The application does not indicate traffic required to dispose of primary combustion ash, syn-fuel combustion residues, and cooling tower residues, nor the destinations of the vehicles involved.

There will be traffic outside of the landfill site necessary to transport the recycled material to the respective purchasers.

Please see response at the end of all comments. It is to address these that are all similar in nature.

Treasure Valley is prone to inversions and high concentrations of airborne particulates during winter months and experiences significant haze and ozone levels during the summer months. Constructing a facility that will contribute to both of these problems just doesn't seem to demonstrate responsible stewardship of our environment obligations.

The project probably has a design to eliminate some (or even a significant proportion) of the emissions, including particulates and chemicals produced during the combustion of certain materials such as metals and plastics. However, there are no systems that are 100% effective.

Ada County should do everything possible to reduce sources of emissions, not increase them.

You are aware of the nonattainment air quality issues present in the Treasure Valley, and I expect that any permit issued in the Valley should include stipulations to insure that nonattainment issues are avoided.

DEQ needs to verify the pollutant stream data presented by Dynamis prior to being permitted.

The intention and result of the Dynamis facility is in fact an effort towards the stewardship of our environment. Like every coin, there are always two sides to the same issue. Destroying 408 tons of waste per day with minimal stress to the quality of air and producing electricity from that waste is quite responsible. Continuing to bury massive amounts of non-biodegradable substances into the ground leads to not only significant emission issues, but also potential contamination issues. The goal is to reduce the impact of garbage on our environment and the Dynamis facility is a step in that direction.

Our proto type plant in Anchorage, AK was located in a nonattainment area. Additionally, our plant in Barrow, Alaska has been successfully operating since 1995. The requirements of the DEQ and the EPA coupled with our own responsibility towards the environment, is assurance that all efforts regarding air quality are highly monitored. It is everyone's duty to meet these standards. Our intention is to exceed them.