



November 9, 2012

**VIA EMAIL**

C. Lloyd Mahaffey, Chairman & CEO  
Dynamis Energy, LLC  
776 E. Riverside Dr., Suite 150  
Eagle, ID 83616

RE: Facility ID No. 001-00252, Dynamis Energy, LLC, Boise  
Permit to Construct Application, Request for Additional Information for a  
Waste-to-Energy Project at Hidden Hollow Landfill

Dear Mr. Mahaffey:

DEQ is providing the following summary of questions presented during our telephone conference today.

DEQ requests further information with respect to the potential annual mercury emissions estimate provided in the application and relied upon to evaluate regulatory applicability with respect to IDAPA 58.01.01.215. Potential annual mercury emissions were estimated based on the following calculation provided in the application:

$$49 \text{ } \mu\text{g}/\text{m}^3 \times (100-70\%) \times 9.85\text{E}-06 \text{ (lb Hg/T MSW)/}(\mu\text{g}/\text{m}^3) \times 134,028 \text{ T MSW/yr (dry)} = 19.5 \text{ lb Hg/yr}$$

average of Entech tests (1,2)      % Hg reduction in MSW, OCRRA      AP-42 Table 2.1-10 factor for MWC      proposed annual throughput limit

An alternate calculation of annual mercury emissions using data contained within the application is provided below:

$$49 \text{ } \mu\text{g}/\text{dscm} \times (100-70\%) \times 2,670 \text{ dscm}/\text{min} \times 60 \text{ min}/\text{hr} / 453.6 \text{ g}/\text{lb} \times 1\text{E}-06 \text{ g}/\mu\text{g} \times 8,760 \text{ hr}/\text{yr} = 46 \text{ lb Hg}/\text{yr}$$

average of Entech tests (1,2)      % Hg reduction in MSW, OCRRA      annual operation

In addition to reconciling this apparent difference, DEQ has the following concerns with regard to the development of this estimate and with regard to other pollutant emissions estimates as these concerns may pertain to them:

- Use of the 70% mercury trend line reduction and the validity of its application, when comparing the Onondaga County Resource Recovery Agency (OCRRA) and the Dynamis waste-to-energy (WTE) projects
  - Accounting for any differences between OCRRA and Dynamis in process technology, regional MSW variability, and recycling/diversion programs

- Comparison of the differences in absolute mercury concentrations measured by the OCRRA and Dynamis WTE projects
- Justification and explanation behind the selection or exclusion of test runs with respect to the Alaska and Wyoming test data sets, individual test runs within the data set, and the weighting given to each of the selected test runs
  - Approach of averaging tire and MSW-only test data, versus treatment as separate operating scenarios and taking the maximum
- Reconciliation of the modeled Thermal Conversion Unit stack flow rate with the calculated flow rate based on MSW fuel input
  - Using 7,000 Btu/lb<sub>m</sub> of MSW, DEQ calculated the exhaust flow from 21.4 T/hr of MSW using an F-Factor from EPA Method 19:  
 $21.4 \text{ T MSW/hr} \times 2000 \text{ lb/ton} \times 1 \text{ hr/60 min} \times 7,000 \text{ Btu/lb MSW} \times 9,570 \text{ dscf/10}^6 \text{ Btu}$   
 $= 47,786 \text{ dscf/min}$
  - $47,786 \text{ dscf/min} \times 1.504 \text{ excess air correction} \times 1.15 \text{ moisture correction} \times 325 \text{ K/293 K}$   
 $= 91,677 \text{ acfm from MSW} + 1,325 \text{ acfm from natural gas} = 93,000 \text{ acfm at } 125 \text{ }^\circ\text{F}$

We look forward to meeting with you on Tuesday (11/13) to discuss these items in further detail.

Sincerely,



Morrie Lewis  
Permit Writer  
Air Quality Division