

Walker, Elizabeth (AIR)

From: Nelson, Deborah
Sent: Thursday, May 29, 2008 4:33 PM
To: Walker, Elizabeth (AIR); Arif, Syed
Subject: FW: Brevard Energy document
Attachments: Brevard response letter (4-08).doc

My error.

Debbie Nelson
Meteorologist
Special Projects Section
850-921-9537
deborah.nelson@dep.state.fl.us

From: Dustin Collins [mailto:dcollins@derenzo.com]
Sent: Wednesday, April 30, 2008 2:48 PM
To: Nelson, Deborah
Subject: Brevard Energy document

Debbie,

Attached please find a document with information in response to a request for information from the Florida DEP in regards to an air permit construction application for a modification to the Brevard Energy construction permit.

A copy of this document, with attached compact disk, is in the mail.

Please contact me with any questions.

Thank you,

Dustin Collins
Derenzo and Associates, Inc.
dcollins@derenzo.com
(517) 324-1880

Derenzo and Associates, Inc.

Environmental Consultants

April 29, 2008

Ms. Deborah Nelson, Meteorologist
Florida Department of Environmental Quality
Special Projects Section
Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Subject: Brevard Energy, LLC
DEP File No. 0090069-006-AC (PSD-FL-378A)
Response to request for additional information (April 17, 2008)

Dear Ms. Nelson,

Derenzo and Associates, Inc. (Derenzo and Associates) has prepared this document on behalf of Landfill Energy Systems – Brevard Energy, L.L.C. (Brevard Energy) to respond to a second request for information dated April 17, 2008 from the Florida Department of Environmental Protection (Florida DEP) related to an air construction permit application for the modification of the Brevard Energy construction permit.

Brevard Energy has requested that conditions of Permit PSD-FL-378 be modified to increase the SO₂ emission factor and rate that is allowed for the permitted facility. The magnitude of the SO₂ emission factor and rate increase that was proposed for the permitted facility exceeds the Prevention of Significant Deterioration (PSD) significant SO₂ emission rate threshold of 40 tons per year (TpY) as defined by Florida Administrative Code (F.A.C.) Chapter 62-212 *Stationary Sources-Preconstruction Review*.

The following information is being submitted to provide additional information to the March 2008 submittal of "Appendix G – Air Quality Modeling Protocol and Ambient Air Impact Results for Brevard Energy, LLC" (Modeling Protocol and Results) as requested by the Florida DEP.

Air Quality Impacts Modeling Receptor Grid

The receptor network used in the Brevard Energy AERMOD modeling analysis determines off-site impacts up to 2.1 kilometers (km) from the proposed source (landfill gas to electricity internal combustion engines). The maximum SO₂ impacts (highest 2nd high 3-hour and 24-hour impacts used for NAAQS demonstration) for the multisource analysis (Brevard Energy facility and all background sources) take place at the edge of the 2.1 km grid.

As requested by the Florida DEP, the receptor grid has been extended to 3.0 km to ensure that all maximum impacts are within the boundary of the receptor grid. Fenceline receptors are now spaced at 50 meters apart, as opposed to the previous 100 meter spacing.

Modeling performed with the larger receptor grid yielded results within the overall maximum impact located 2.1 km from the proposed Brevard Energy sources.

The larger receptor grid places receptors closer to PSD increment consuming sources, leading to increased impacts for the multisource analysis at the edge of the grid (i.e., expanding the grid further reflects the contributions that neighboring sources of SO₂ have on the ambient air in consideration and are not attributed to Brevard Energy).

The Significant Impact Analysis for SO₂ (Section 3.0 of Modeling Protocol and Results) indicates that the radius of impact for the proposed Brevard Energy sources is 1.8 km. Impacts caused by the Brevard Energy sources for all receptors beyond 1.8 km are less than the PSD significant impact concentrations.

Figure 1 presents an illustration of where the Brevard Energy and Utility Flare combined 24-hour maximum impact is located in the receptor grid (the 24-hour impact produces the largest Radius of Impact).

Figure 2 presents an illustration of the Radius of Impact as a result of the 24-hour maximum impact.

Attachment A provides a compact disk with the revised AERMOD input and output files.

Preconstruction Monitoring – Monitoring Exemption Levels

In the Modeling Protocol and Results document, a Significant Impact Analysis (Section 3.0) was completed that includes the combined maximum impacts from the proposed energy facility and utility flare. The results demonstrate that ambient air impacts caused by Brevard Energy are below all federal Monitoring Exemption Levels (PM₁₀ 24-hr, SO₂ 24-hr, CO 8-hr and NO₂ annual).

Because the impacts are below the Monitoring Exemption Levels and regional background pollutant monitoring data are available (Section 4.5 of the Modeling Protocol and Results document) Brevard Energy is proposing that the existing air monitoring data recorded in Orange County be used to satisfy the pre-construction monitoring requirement.

Table 1 presents the results of the Significant Impact Analysis compared to Monitoring Exemption Levels.

Impacts on Vegetation, Soils and Wildlife

Air quality impacts on vegetation and soils are addressed in Section 8.2 of the “Air Construction Permit Application for Significant Modifications to Permit No. PSD-FL-378 Issued Brevard Energy, LLC at the Brevard County Solid Waste Management Central Disposal Facility.” The discussion concludes that because impacts are well below the associated secondary NAAQS levels (which are meant to take into account the protection of ecosystems, which includes

vegetation, soil and wildlife), no significant or adverse impacts on vegetation and soil are expected to occur as a result of the operation of the Brevard Energy facility.

Negative air quality impacts on wildlife can occur through air inhalation, ingestion of food, and skin exposure. The wildlife population in Brevard County is not unlike the average wildlife population throughout most of Florida, which include a variety of birds, deer, raccoons, otter and alligators.

The Brevard Energy facility is located within the boundaries of an existing active landfill. The construction of this facility will not disturb vegetation, soils or wildlife habitats that are not already being affected by the existing landfill.

The proposed facility will replace air pollutant emissions that would otherwise be released, and are currently being released, by the flaring system. Although there will be continued emission releases once the facility is in operation, Brevard Energy will be located near the center of the county owned landfill which is surrounded by a fence that that precludes access from the public and wildlife.

Based on the information presented above, installation and operation of the Brevard Energy facility is expected to have minimal impact on the surrounding soils, vegetation and wildlife. Installation of the facility will not physically disturb areas exterior to the landfill property and off-site ambient air impacts are below levels that have been established for the protection of these systems.

Please contact us (517) 324-1880 if you have any questions or require additional information.

Sincerely,

DERENZO AND ASSOCIATES, INC.

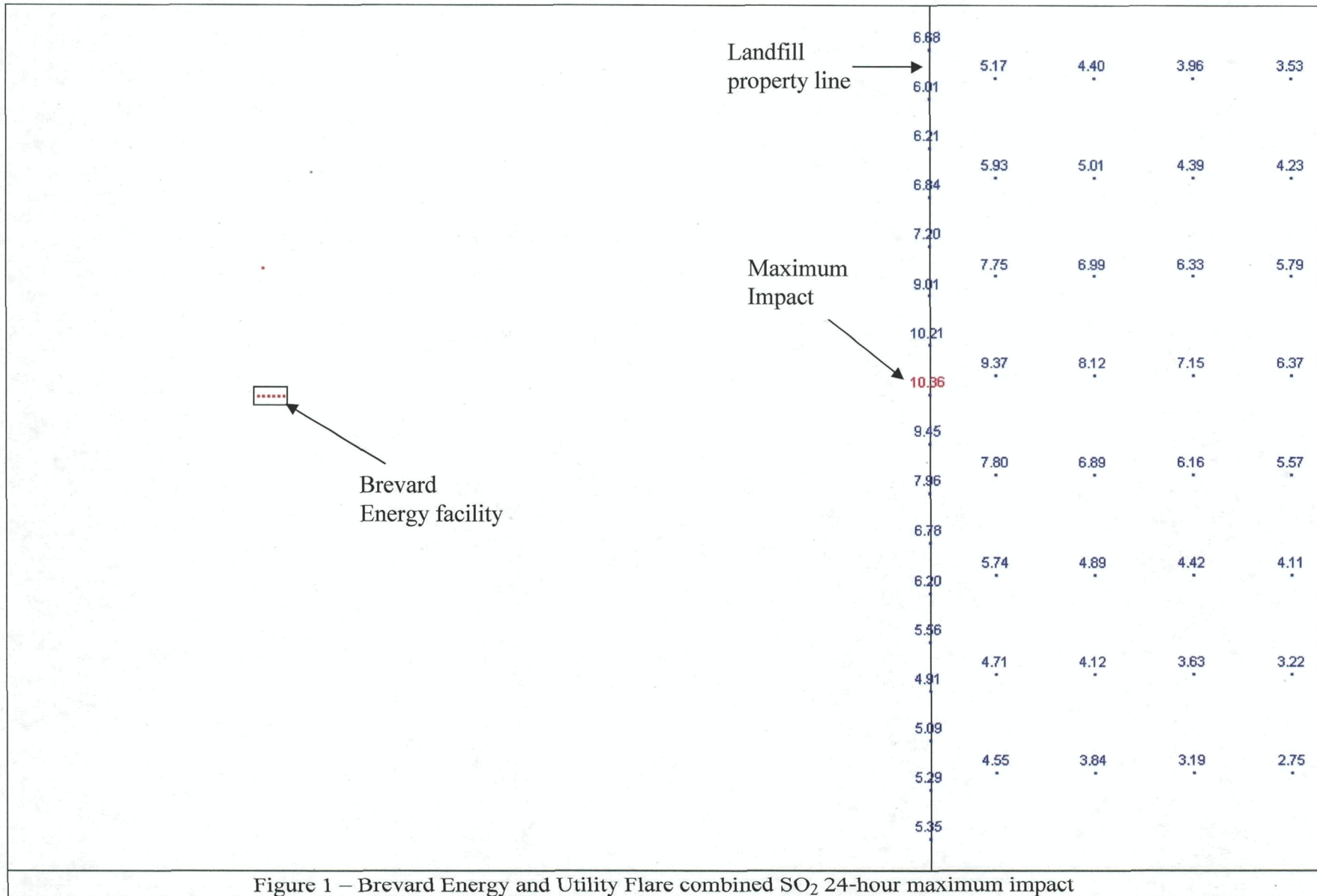
Dustin J. Collins
Environmental Consultant

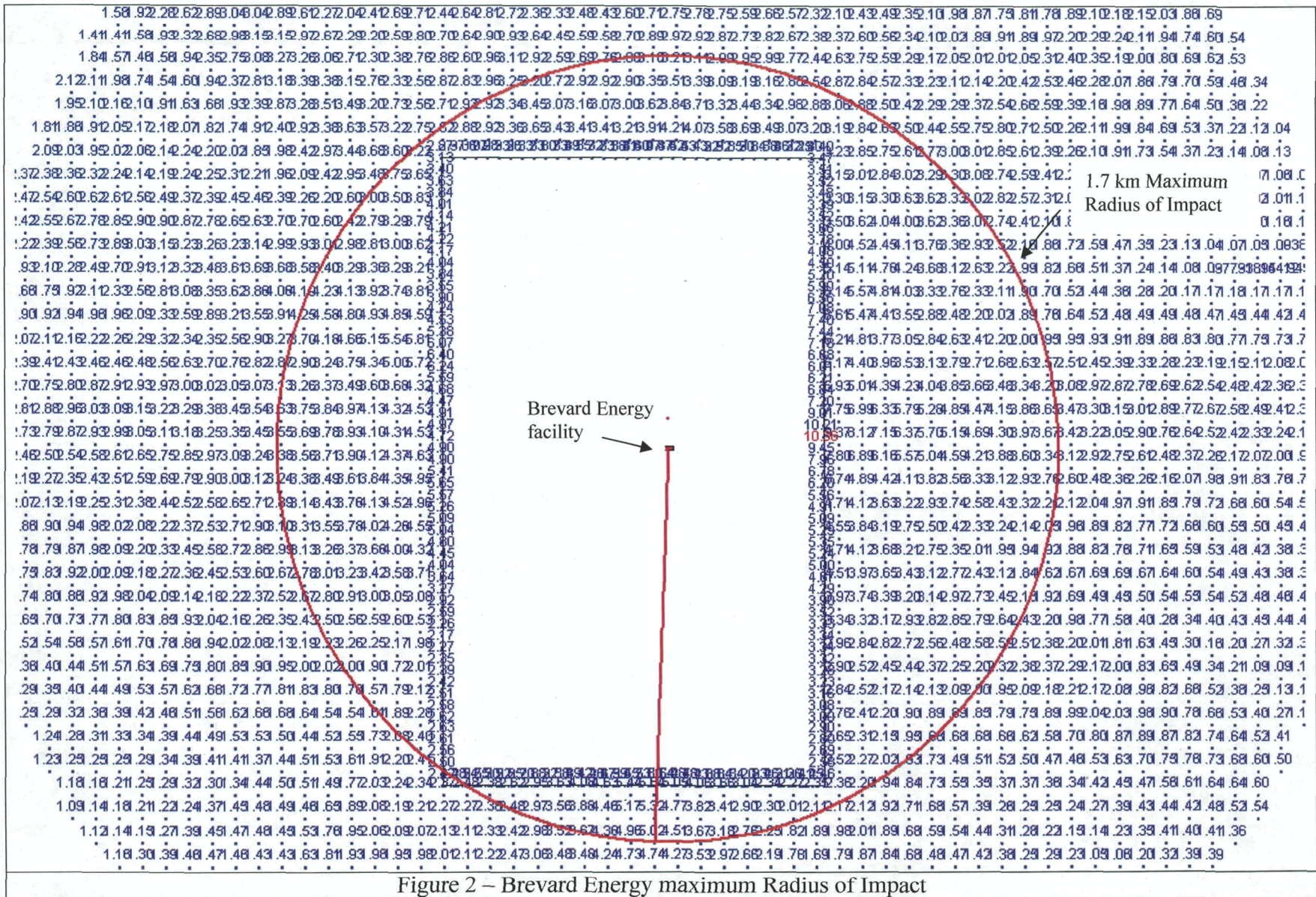
attachment

Table 1 Ambient air impact results for Brevard Energy compared to Monitoring Exemption Levels

Pollutant	Averaging Time	Maximum Predicted Combined Impact ¹ ($\mu\text{g}/\text{m}^3$)	Class II Significant Impact Levels ($\mu\text{g}/\text{m}^3$)	Monitoring Exemption Levels ($\mu\text{g}/\text{m}^3$)
NO ₂	Annual	0.62	1.0	14.0
CO	8-hour	84.0	500	575
SO ₂	24-hour	10.1	5.0	13.0
PM ₁₀	24-hour	4.61	5.0	10.0

1. Brevard Energy engines and existing landfill gas flares.





Derenzo and Associates, Inc.

ATTACHMENT A
COMPACT DISK
REVISED MODELING FILES