

## MEMORANDUM

Date: June 22, 2016

To: Mr. Glenn Pacheco  
MassDEP

From: Mr. Vincent Tino, CCM   
Epsilon Associates, Inc.

Subject: **Visibility Modeling and Federal Land Manager Notification**

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On May 19, 2016, EPA submitted comments on MATEP's PSD permit application to MassDEP. Specifically comment #3.b. referenced visibility at Class 1 areas. The comment is as follows:

*b. The fact sheet docs not describe any consultation with the Federal Land Manager (FLM) for Lye Brook Wilderness Area, the nearest Class 1 area. MassDEP should provide written notice, including a visibility analysis, to the FLM regarding any permit application triggering major source PSD, per 40 CFR S2.21(p)(1). To determine adverse visibility impacts, FLMs typically request a simple screening analysis consistent with the FLMs' 2010 Air Quality Related Values Work Group (FLAG) Guidance. MassDEP should document this consultation with the FLM and any analyses requested by the FLM in the permit record.*

On May 27, 2016, Epsilon submitted a completed "Request for Applicability of Class I Area Modeling Analysis" form to Mr. Ralph Perron, the U.S. Forest Service Eastern Regional Office Air Quality Specialist. The form provided the applicable screening analysis showing that any project impacts on the nearest Class 1 area would be negligible. Mr. Perron concurred with this determination.

The form and correspondence with Mr. Perron is attached.

Please do not hesitate to contact me via email at [vtino@epsilonassociates.com](mailto:vtino@epsilonassociates.com) or by phone at 978-461-6233 if you have any further questions.

## Request for Applicability of Class I Area Modeling Analysis Eastern Region, U.S. Forest Service

<i>Facility Name (Company Name)</i>	Medical Area Total Energy Plant (MATEP)
<i>New Facility or Modification?</i>	Modification
<i>Source Type</i>	One new combined heat and power system (CHP), consisting of a 14.4 MW combustion turbine and heat recovery steam generator (HRSG)
<i>Project Location (County/State/ Lat. &amp; Long. in decimal degrees)</i>	City of Boston, Suffolk County, Massachusetts (42.336546°N, 71.108435°W)

### Application Contacts

<i>Applicant</i>		<i>Consultant</i>		<i>Air Agency Permit Engineer</i>	
<b>Company</b>	MATEP	<b>Company</b>	Epsilon Associates, Inc.	<b>Agency</b>	MassDEP
<b>Contact</b>	Pat Gillooly	<b>Contact</b>	A.J. Jablonowski, P.E.	<b>Contact</b>	Glenn Pacheco
<b>Address</b>	474 Brookline Avenue, Boston, MA 02215	<b>Address</b>	3 Clock Tower Place Suite 250 Maynard, MA 01754	<b>Address</b>	One Winter Street Boston, MA 02108
<b>Phone #</b>	617-598-2360	<b>Phone #</b>	978-897-7100	<b>Phone #</b>	617-654-6580
<b>Email</b>	pat.gillooly@veolia.com	<b>Email</b>	ajablonowski@epsilonassociates.com	<b>Email</b>	glenn.pacheco@state.ma.us

### Briefly Describe the Proposed Project

MATEP is proposing to install a 14.4 MW turbine with a fired HRSG. MATEP is considering firing natural gas, with Ultra Low Sulfur Distillate (ULSD) fuel oil firing up to 720 hours per year in the turbine only (the HRSG would be fired with gas only).

MATEP is an existing major stationary source of air emissions per the federal PSD program at 40 CFR 52.21(b)(1)(i)(b). Therefore, MATEP expects the turbine installation will be a major modification of an existing major source, subject to the requirement to obtain a PSD permit.

### Proposed Emissions and BACT

<i>Criteria Pollutant</i>	<i>Proposed Emissions (tons/year)</i>	<i>Emission Factor (AP-42, Stack Test, Other?)</i>	<i>Proposed BACT</i>
Nitrogen Oxides	7.79	Vendor	Gas/Gas: 2.0 ppmvd@15%O2 ULSD/Gas: 6.0 ppmvd@15%O2
Sulfur Dioxide	2.56	N/A	Gas/Gas: 0.6 ppmvd@15%O2 ULSD/Gas: 0.3 ppmvd@15%O2
Particulate Matter	18.8	Vendor	Gas/Gas: 0.020 lb/mmBtu ULSD/Gas: 0.034 lb/mmBtu
Volatile Organic Compounds	2.50	Vendor	Gas/Gas: 1.70 ppmvd@15%O2 ULSD/Gas: 7.0 ppmvd@15%O2
Sulfuric Acid Mist	2.55	Vendor	Gas/Gas: 0.4 ppmvd@15%O2 ULSD/Gas: 0.22 ppmvd@15%O2

### Proximity to U.S. Forest Service Class I Areas

For Additional Information or Questions, Contact Ralph Perron  
(802) 222-1444 or rperron@fs.fed.us

Class I Area	Lye Brook	Presidential Range-Dry River and Great Gulf areas	Acadia NP
Distance from Facility (km)	175.36	194.96	272.45

The Initial Screening Criteria as laid out in the FLAG2010 Phase I report from 2010 ([http://www.nature.nps.gov/air/Pubs/pdf/flag/FLAG\\_2010.pdf](http://www.nature.nps.gov/air/Pubs/pdf/flag/FLAG_2010.pdf)), says

*the Agencies will consider a source locating greater than 50 km from a Class I area to have negligible impacts with respect to Class I AQRVs if its total SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>10</sub>, and H<sub>2</sub>SO<sub>4</sub> annual emissions (in tons per year, based on 24-hour maximum allowable emissions), divided by the distance (in km) from the Class I area (Q/D) is 10 or less. The Agencies would not request any further Class I AQRV impact analyses from such sources.*

Lye Brook Wilderness Area in Vermont is the nearest Class I Area at 175.4 km (D) from the MATEP facility. The maximum annual emissions based on the 24-hour maximum allowable are, in tpy:

Pollutant	CTG on Natural Gas HRSG on Natural Gas		CTG on ULSD HRSG on Natural Gas	
	TPY	Maximum lb/hr basis	TPY	Maximum lb/hr basis
NO <sub>x</sub>	6.61	1.51	19.97	4.56
SO <sub>2</sub>	2.54	0.58	1.58	0.36
PM(total)	17.83	4.07	26.94	6.15
H <sub>2</sub> SO <sub>4</sub>	2.54	0.58	1.58	0.36
sum	29.52	tpy (Q)	50.06	tpy (Q)

So Q/D with the turbine firing on ULSD is  $50.06/175.4 = 0.29$  which is far below the threshold ratio of 10. The ratio when firing on gas would be lower. Thus, the source is considered to have negligible impacts on visibility at the nearest Class I area.

**From:** [Perron, Ralph -FS](#)  
**To:** [Vincent Tino](#)  
**Cc:** [AJ Jablonowski](#); "[Gluckler, Peter \(peter.gluckler@veolia.com\)](#)"; [Joseph Sabato](#)  
**Subject:** RE: Notification Under PSD - MATEP  
**Date:** Tuesday, May 31, 2016 4:52:26 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

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Dear Mr. Tino,

Thanks for your thorough completion of the Request for Applicability of Class I Area Modeling Analysis Document for the Eastern Region of the US Forest Service. Based on the information you provided on May 27, 2016, the US Forest Service will not be requesting Air Quality Related Values analyses of this project. Please keep us informed of any significant changes in this project, as well as any other proposal which may have an impact on the Lye Brook Class I area in Vermont, or the Class I areas in New Hampshire.

Do you need a more formal document for your records, or is this email adequate?



**Ralph Perron**  
**Air Quality Specialist**  
**Forest Service**  
**Eastern Regional Office**  
**p: 603-536-6228**  
**c: 802-222-1444**  
[rperron@fs.fed.us](mailto:rperron@fs.fed.us)

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**Caring for the land and serving people**

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**From:** Vincent Tino [mailto:vtino@epsilonassociates.com]  
**Sent:** Friday, May 27, 2016 2:26 PM  
**To:** Perron, Ralph -FS <rperron@fs.fed.us>  
**Cc:** AJ Jablonowski <ajablonowski@epsilonassociates.com>; 'Gluckler, Peter (peter.gluckler@veolia.com)' <peter.gluckler@veolia.com>; Joseph Sabato <jsabato@epsilonassociates.com>  
**Subject:** Notification Under PSD - MATEP

Dear Mr. Perron,

Medical Area Total Energy Plant (MATEP), in the Longwood Medical Area of Boston, plans to install

and operate a third combustion turbine generator CHP unit, a 14.4 Megawatt (MW) Solar Titan 130 combustion gas turbine that is capable of combusting natural gas as the primary fuel, with ultra low sulfur diesel (ULSD) as a backup fuel. Heat from combustion turbine gases are recovered by passing through a HRSG.

The project is located 175 km from Lye Brook Wilderness Area in Vermont and 195 km from the Presidential Range/Dry River/Great Gulf Class I areas in New Hampshire.

Attached is the completed "Request for Applicability of Class I Area Modeling Analysis" form that provides all the relevant information for the USFS to make their determination.

Calculations of the Q/D ratio is included on the 2<sup>nd</sup> page of the form. The ratio is well below the threshold of 10, allowing the facility to presume to have negligible impacts to visibility and not require further analysis.

Please review the project form, calculations, and inform us of your concurrence.

Sincerely,

**Vincent R. Tino, CCM**  
*Senior Consultant, Air Quality*

**Epsilon Associates, Inc.**

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