

US EPA ARCHIVE DOCUMENT

**State Innovation Grant Project  
Narragansett Bay Commission  
Progress Report - 9  
October 1, 2010 – December 31, 2010**

**Project Title:** Sustainable Energy Management Practices for Wastewater Treatment Facilities

## **Part 1 – Synopsis of Accomplishments**

During the current Project Reporting Period October 1<sup>st</sup> through December 31<sup>st</sup>, 2010 the following activities took place: the Project Partners (NBC, RIDEM, URI and RIMES) and EPA continued to meet and participate on conference calls to discuss and plan activities associated with project development and implementation, NBC continued collecting energy use data from RI WWTFs for benchmarking, work continued on investigating the potential use of biodiesel glycerin as a wastewater treatment carbon source, NBC's Pollution Prevention Engineer researched hydroelectric energy opportunities for RI WWTFs and began working with URI to investigate alternative sources of anaerobic digester feed (waste) materials to help improve biogas production; and URI, RIDEM and NBC finalized the FOG-ERP Workbook, Informational Brochure and Certification Checklist.

## **Part 2 – Summary of Activities Accomplishments – Seventh Project Quarter**

### **I. WWTF Energy Focused Environmental Management System Project**

#### **EF-EMS Planning**

##### **EF-EMS Steering Committee**

Throughout the current Project Period the EF-EMS Steering Committee continued to coordinate additional funding efforts with Mr. Ken Payne of the Rhode Island Office of Energy Resources (RIOER). During this time period Mr. Payne further confirmed his office's commitment to help secure as much as \$95,000 in additional grant funds to pay for ½ of the Technical Assessment phase of the WWTF energy audit process (National Grid has agreed to pay the other ½ of the cost). During the month of November 2010, however, Mr. Payne sent out a memo stating that issuance of grants may be slowed down due to RIOER staff shortages. The Rhode Island EF-EMS Steering Committee will continue working with the RIOER to help secure these needed funds.

#### **Energy Audits/Scoping Studies**

##### **Energy Audit Checklist**

On Monday, December 20, 2010, NBC's ESTA P2 Engineer submitted comments to DMI, Oregon Energy Trust and EPA Region 1 regarding a draft energy efficiency measures checklist for WWTF.

##### **BP Energy Scoping Study Follow-Up**

On Thursday, October 7, 2010, NBC's ESTA Program Manager and Pollution Prevention Engineer participated in a phone conference with National Grid and DMI at Bucklin Point WWTF regarding next steps to be taken with respect to Bucklin Point Energy Assessment Report.

On Wednesday, December 15, 2010, NBC's Pollution Prevention Engineer and Environmental Compliance Technical Assistant collected heater nameplate information at the Bucklin Point Bi-Sulfite Storage Building in response to energy conservation measures suggested in the DMI Report.

To-date Scoping Studies have been conducted and subsequent reports have been prepared for 18 of the 19 Rhode Island WWTFs (Woonsocket was completed prior to start of the EF-EMS Program):

<b>Facility</b>	<b>Date</b>	<b>Energy Team Leader</b>
Jamestown WWTF	July 1, 2009	Action Energy
Narragansett WWTF (Scarborough)	July 14, 2009	Action Energy
Bucklin Point WWTF	July 22, 2009	Action Energy
QPDC WWCP	August 25, 2009	NBC
Burriville WWTF	February 23, 2010	DMI
Smithfield WWTF	March 10, 2010	DMI
Cranston WWTF	March 24, 2010	DMI
South Kingstown	April 7, 2010	DMI
Quonset Point	April 21, 2010	DMI
Newport	April 28, 2010	DMI
Warren	May5, 2010	DMI
East Greenwich	May 12, 2010	DMI
Bucklin Point	May 19, 2010	DMI
Jamestown	May 26, 2010	DMI
Westerly	June 9, 2010	DMI
West Warwick	June 16, 2010	DMI
East Providence	July 8, 2010	DMI

### **Hydroelectric Renewable Energy Applications**

Throughout the current Project Period, NBC's Pollution Prevention Engineer continued to compile information and facility drawings for the Field's Point, Cranston, West Warwick and Woonsocket WWTFs to help develop a feasibility assessment on the potential use of renewable hydroelectric power.

## **II. FOG Environmental Results Program Project**

### **Biodiesel/Glycerin**

In response to a request from the NBC's Bucklin Point (BP) WWTF, investigations were initiated into the feasibility of utilizing a glycerin by-product from the production of biodiesel as a carbon source within the BP WWTF's biological nutrient removal (BNR) process. Efforts associated with this project conducted during this reporting period include:

Throughout the month of October 2010 NBC developed a sampling plan and collected baseline operational data on the BNR system at Bucklin Point in preparation for adding the glycerin to the BNR treatment system. As noted in previous reports these sampling and monitoring activities are not being funded through this grant award.

On November 1<sup>st</sup> 2010 NBC's ESTA Program Manager and Pollution Prevention Engineer visited the Cranston WWTF along with staff from Engineering and Bucklin Point in order to obtain information on the use of an external carbon source within their BNR process.

On December 2<sup>nd</sup>, 2010 NBC's ESTA Program Manager submitted a draft Glycerin Pilot Study Standard Operating Procedure (SOP) to RIDEM for their review. This SOP described receiving, storage, dosage and monitoring procedures associated with the pilot study using glycerin as a carbon source within the Bucklin Point BNR process. The SOP was subsequently approved by the RIDEM.

#### **Restaurant FOG Self-Certification Workbook**

On December 30<sup>th</sup> ESTA staff received the final draft of the Restaurant FOG Self-Certification Workbook from URI's Center for Pollution Prevention and Environmental Health.

#### **URI Anaerobic Digestion Biogas Project**

During the month of December 2010, NBC initiated efforts with Dr. Craver of URI regarding research on anaerobic digestion with a focus on improving biogas production as a renewable energy source.

### **III. Miscellaneous Activities**

#### **NEWEA Energy & Sustainability**

On Wednesday, October 20, 2010, NBC's ESTA Program Manager and Pollution Prevention Engineer attended the NEWEA Energy & Sustainability – Rethinking Wastewater conference in Hyannis, MA.

#### **Wind Turbine Video**

Throughout the month of October 2011, NBC's Pollution Prevention Engineer worked with a Roger Williams University student to develop a FP WWTF Wind Turbine Project Video Simulation. The final video was completed on October 29<sup>th</sup>.

#### **NEWMOA**

On October 5<sup>th</sup> NBC's ESTA Program Manager submitted an update article on the EF-EMS project to NEWMOA for publication in their quarterly newsletter.

#### **WERF Energy Survey**

During the month of December 2010 NBC completed a WERF on-line survey entitled “Barriers to Biogas Use”. An e-mail link to the survey was also forwarded to all RI WWTFs.

**EF-EMS Project Management**

On December 15<sup>th</sup>, NBC ESTA Program Manager and ESTA P2 Engineer participated in a conference call with EPA regarding the EF- EMS and FOG Projects.

**Part 3 – Projection of Activities, Accomplishments, and Major Expenditures for Next Quarter Report**

**I. WWTF Energy Focused Environmental Management System Project**

- A Roundtable Meeting will be held in February 2011
- Initiate Energy Use Technical Assessments in cooperation with National Grid and the RIOER

**II. FOG Environmental Results Program Project**

- Meet with the RI Hospitality Association in February 2011
- FOG-ERP Steering Committee – Form Steering Committee and schedule first meeting
- ERP Certification – Mail out workbook and certification checklists

**Part 4 – Financial Report**

**Project Expenses**

A summary of grant related expenses to-date is as follows:

No project expenses were billed to the grant account during this period.

	Salary	Fringe	Non-Classified Limited	Total Personnel	Operating	Travel	Overhead Expenses	Match Funds	Grant Funds
NBC	\$64,516	\$35,484		\$100,000				\$50,000	\$50,000.00
RIDEM									\$0.00
RIMES				\$14,850					\$14,850.00
URI	\$102,835.03	\$23,364.90	\$11,411	\$137,611.32	\$70.00	\$1,951.53	\$35,367.17	\$33,512	\$175,000.02
<b>Total:</b>				\$252,461.32	\$70.00	\$1,951.53	\$35,367.17	\$83,511.88	\$239,850.02

**Attachments:**

1. Project Milestone Summary Table
2. Final FOG ERP Brochure
3. Final FOG ERP Workbook