

MONTHLY PROGRESS REPORT FOR CONTRACT NO. 500-00-036

PROJECT 2.1 – ENHANCED LANDFILL GAS PRODUCTION USING BIOREACTORS

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

June 2004

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**What we planned to accomplish this period:**

In June it was anticipated that the bioreactor's design would be finalized including incorporation of any comments received on the *Conceptual Design Report* and the preparation of construction plans needed to define the project in sufficient detail so that the contractor could construct it. This was to be accomplished within the time frame of the project so that the County could meet its schedule of accepting waste by early 2005. It was also anticipated that the Critical Project Review meeting would be scheduled so that the Technical Advisory Committee (TAC) would have the opportunity to provide guidance to the project as well as comments on the deliverable and proposed implementation of the project. It was also anticipated that discussions would continue between Commonwealth and the County on the proposed *Memorandum of Understanding (MOU)* on the bioreactor's project and gas rights for all of Unit 3. As noted in previous reports, several iterations of discussions have occurred and most of the issues related to the *MOU* have been resolved. It was anticipated that all substantive issues would be addressed and resolved in early June so that the *MOU* could be finalized by early July

**What we actually accomplished this period:**

Task 2.1.1 Characterize Waste to be Placed in Bioreactor:

- As the *Waste Characterization Report* was previously submitted and approved by the Commission, minimal tasks were undertaken in June. Data from this effort were reviewed and used to facilitate the completion of the Project 1.1, Task 1.1.10 *Prioritization Report* and other Project 2.1 activities.

Task 2.1.3.a Conceptual Design for First Bioreactor

- In June, activities on the *Conceptual Design* were very limited in that efforts were focused on incorporating the results of the *Conceptual Design Report* into the *Construction and Test Plans*, as well as ongoing coordination with the host, San

Bernardino County. As anticipated, consultations continued with BAS, the County's design engineer, as part of the effort to design and implement detailed plans for developing the bioreactor at Mid-Valley. Several members of the TAC were contacted to obtain their comments on the *Conceptual Design Report* and comments received in June and were used in the preparation of the *Construction and Test Plans*.

- The CE Team continued work on the first phase of the approach provided to Commission staff previously, implementing environmental permitting and design activities that link the PIER bioreactor project and the County's ongoing program. When the later phases of this plan are implemented, it will include linking approximately \$4 million in matching funds for construction and approximately \$4 million in matching funds for operations with the PIER program

*Task 2.1.3.b Construction and Test Plans for First Bioreactor*

- Using information presented in the *Conceptual Design Report*, the team continued to work on elements of the construction and test plans that link the bioreactor project with the ongoing design project of extending the liner, a portion of which will serve as the test area for the bioreactor. This effort includes permitting (being undertaken under separate effort funded by the County), engineering and construction elements, and in general, involves the integration of PIER bioreactor project elements into the ongoing work of the Unit 3 expansion. BAS, the County's design engineer, continued its work with the contractor related to the addendum to the design document prepared earlier so that the County's contractor would be able to proceed with implementation of the bioreactor elements of the project once Commission approval was received. Additionally, the effort was undertaken so that the contractor selected by the County could complete its work in a manner consistent with the County's approach of having its work go through a public bidding process. As a result of this construction and test planning effort, the contractor selected to implement the liner extension project at Mid-Valley would also be able to install the bioreactor elements of the project with established unit prices and quantities. This approach was developed so that the project could be implemented in a manner that would not adversely impact the overall liner extension project.
- Conference calls involving BAS, the County's design engineer and the CE Team continued. Extensive coordination is required so that elements of the proposed bioreactor project are fully compatible with the County's ongoing project to extend the liner within Mid-Valley Unit 3, particularly given the County's need to have the liner extended in the second half of 2004 so that waste can be placed in this area in 2005. The primary focus of these calls, continued to be the exchange of information needed to complete the ongoing conceptual design activities linking work at Mid-Valley with the PIER program's bioreactor project – specifically in light of technical, environmental, schedule and funding considerations.

**How we are doing compared to our plan:**

Work is proceeding, although it is critical that approval be received for the bioreactor elements of the project given the County's need to complete construction of the liner extension by the end of the year. This is needed so that waste can be placed in the area of the proposed bioreactor by early 2005. Of particular importance is the need to order materials that require a long lead-time so that the contractor's cost will not be increased. Related to this matter, a letter was sent by the contractor advising that there could be cost impacts if the issue of proceeding with the bioreactor was not resolved by the end of June. This issue was raised with Commission staff and a meeting arranged to discuss the County's need to meet its schedule. The CE Team continues to closely coordinate the work of the PIER program with that of the County's design engineer BAS, to ensure that the work is completed in a timely and efficient manner, and in accordance with PIER Program guidelines and timeframes.

With the submission of the *Conceptual Design Report* in April, efforts on the construction test plans intensified. This intense effort is necessary to ensure that the County's schedule to have the bioreactor elements of the project ready to implement by late June can be achieved. As noted previously, it is very important that this schedule be met because the County must be able to place waste in the area of the proposed bioreactor by early 2005. If there are delays in the bioreactor elements being approved, the liner extension project could have to go forward without the bioreactor elements.

**Significant problems or changes:**

The County is proceeding with the construction of the Unit 3 liner extension project so that construction of the liner extension will occur starting this summer. This will enable the waste to be placed in the bioreactor starting late this year. This could be very advantageous to the Commonwealth PIER Program as the County is planning on placing approximately 800,000 tons of waste in the area to become the bioreactor during the first year of its operation. At the same time, the County cannot delay the liner extension project. Therefore, it is important that the PIER program meet this schedule. The key challenge in this regard is gaining approval to proceed with the one commercial scale bioreactor project and reallocating the budget as recommended in late 2003 so that Project efforts could focus on one commercial scale bioreactor instead of two research scale bioreactors as initially proposed. Changing the focus of the project to a larger commercial scale type facility is consistent with the comments made by RPAC members at the program kickoff meeting and at the Program Review meeting in September of 2003. If one commercial scale bioreactor is constructed, instead of the two research scale bioreactors, it is anticipated that the total project budget would be reduced.

**What we expect to accomplish during the next period:**

It is anticipated that July will be a critical month for the bioreactor project. The County needs to proceed with its liner extension project in early July in order to meet its schedule to accept waste in early 2005. A meeting of the TAC is planned in early July to review the plans for the bioreactor project. It is also anticipated that the *Construction and Test Plans* will be submitted. Finally, the CE Team anticipated that the *Memorandum of Understanding* between Commonwealth and San Bernardino County should be finalized.

**Status of Milestones and Deliverables:**

Table 1 on the following page summarizes the status of Project 2.1 task deliverables as of the end of the current reporting period.

**Table 1: Summary of Project Status and Deliverables – Project 2.1**

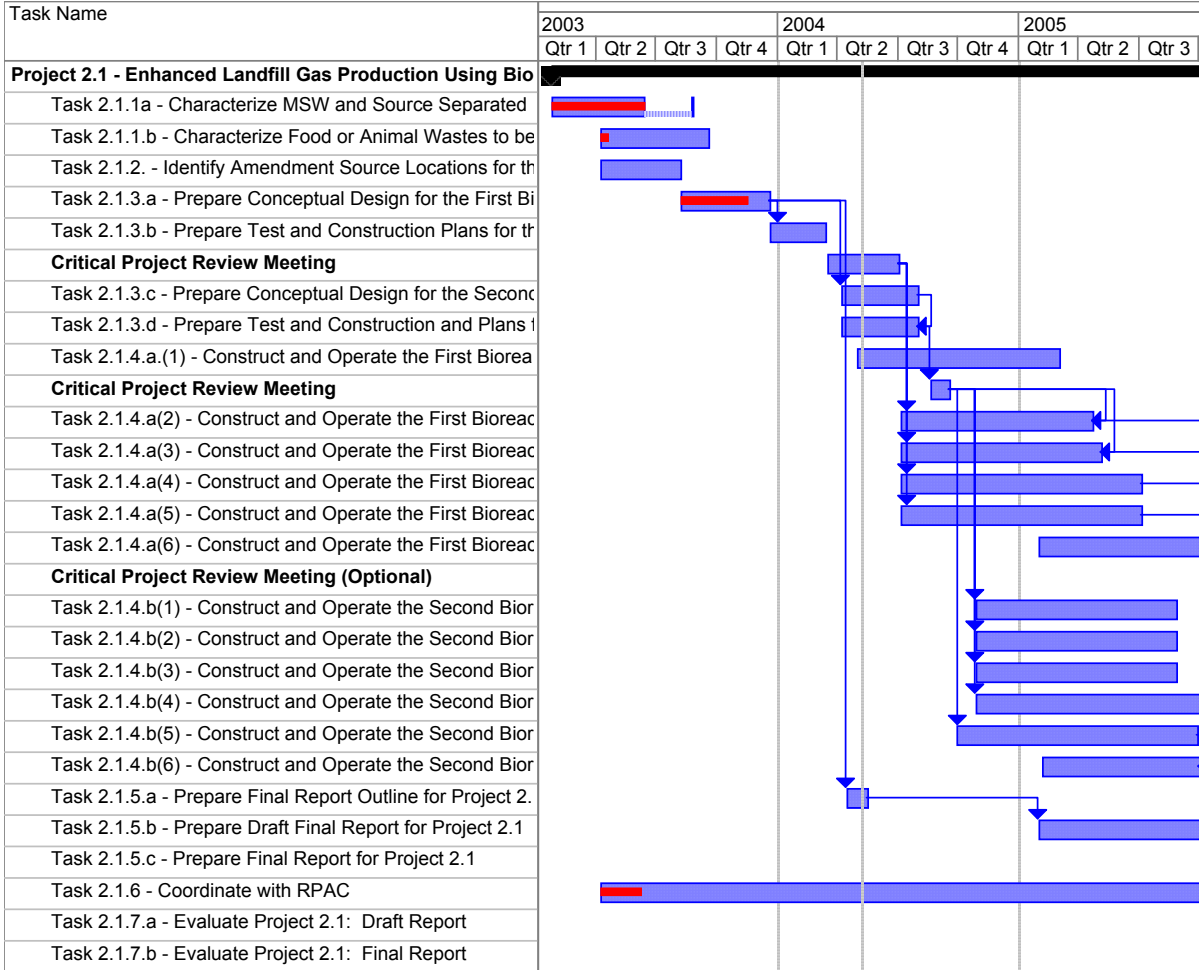
Task No.	Description	Start Date		Due Date		Status (%)
		Planned	Actual	Planned	Actual	
2.1.1a	Characterize MSW and Source-Separated Organic Waste to be Placed in Both Bioreactors	01/10/02	1/24/03	05/31/02 08/21/03	DR: 08/20/03	100%
2.1.1b	Characterize Food or Animal Wastes to be Placed as Amendment in the Second Bioreactor	03/25/02	1/24/03	On Hold		8%
2.1.2	Identify Amendment Source Locations for the Second Bioreactor	05/26/02		On Hold		
2.1.3a	Prepare Conceptual Design for the First Bioreactor	09/28/02		12/18/03	4/22/04	95%
2.1.3.b	Prepare Construction and Test Plans for First Bioreactor	12/11/03		3/6/04		90%
2.1.6	Coordinate with RPAC/TAC	01/10/02		04/26/06		

Explanation of any Difference(s) in Schedule:

*Task 2.1.1a – Landfill Feedstock Characterization Report* – Information needed to complete this report took longer to collect than anticipated as the primary data to be used was not available in an electronic format. This delay will not affect the overall schedule for the project as that is being affected by the issuance of R&D exemption

mentioned above and other developments that could affect the overall development of the bioreactor.

**Overall Schedule for Project 2.1:**



**Overview of Fiscal Status:**

Table 2 below summarizes the fiscal status of Project 2.1 by task/deliverable as of the end of the current reporting period.

**Table 2: Fiscal Status By Task – Project 2.1**

<b>Task Number</b>	<b>Budget</b>	<b>Invoiced To-Date<sup>1</sup></b>	<b>Fiscal Status *</b>
2.1.1 a	\$52,117	\$52,117	OT
2.1.1 b	\$53,064	\$0	OT
2.1.2	\$40,476	\$0	OT
2.1.3 a	\$103,578	\$0	OT
2.1.3.b	\$92,334	\$0	OT
2.1.6	\$45,024	\$0	OT

\*Fiscal Status – Please indicate if you are “On Track” (OT), OverBudget (OB), or UnderBudget (UB)

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<sup>1</sup> Invoiced To-Date indicates the total amount invoiced prior to 10% retention being withheld