

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

PROJECT 2.1 – ENHANCED LANDFILL GAS PRODUCTION USING BIOREACTORS

REPORT PREPARED BY: COMMONWEALTH ENERGY TEAM

April 2003

Contractor Project Director:	Patrick Lilly (360) 906-0616
Contractor Project Manager:	Bill Kitto (503) 235-5022
Commission Project Manager:	Zhiqin Zhang (916) 654-4063

What we planned to accomplish this period:

The primary focus of activity in April was to continue to coordinate efforts with the leading candidate to be the primary host for the bioreactor project, the Mid-Valley landfill in Fontana, San Bernardino County. Also, the formal kickoff meeting was to be held in Sacramento. Another key activity to be conducted was for key Commonwealth Team members to visit the Yolo County site. The Team planned to visit the site and coordinate with Yolo County staff to insure that research activities on the Commonwealth project would be a logical extension of work on that R&D project and to ensure that the lessons learned on that project are applied to the Mid-Valley bioreactor project.

What we actually accomplished this period:

Task 2.1.1 Characterize Waste to be Placed in Bioreactor:

- The primary activity undertaken on this project in April was the formal kickoff meeting held in Sacramento on April 17th. At that meeting, the project goals, objectives, work elements and deliverables were reviewed. In addition, discussion was held about this project and some key points on the path forward were clarified by the Team. Two major conclusions were reached:
 - First, it is important that the Commonwealth Project Bioreactor Project achieve advancement in the state-of-the art bioreactor technology in California. It is recognized that the Yolo County Bioreactor project has achieved considerable success in demonstrating the bioreactor technology in northern California. It is important that the Commonwealth program builds on this success and conduct research that expands on what was done in Yolo County.

- Second, it is recognized that more effective use of Commission funds can be achieved if research activities are focused on one bioreactor project rather than two separate projects. Therefore, efforts on the second reactor will be placed on hold until further formal notice. At some point in the future, when the exact requirements of the bioreactor project are better defined, funds from the second reactor project may be made available to a consolidated project and/or to support further suggested out-of-scope T&D impacts analysis as an extension of the Mini-grid planning effort under Task 1.1.9. These scenarios will be evaluated as the project goes forward.
- Also during April, a site visit to the Yolo County landfill was conducted as planned. This site visit allowed Commonwealth team members to visit the bioreactors constructed under other Energy Commission funding. It also allowed Commonwealth team project staff to meet with the Yolo County Project Manager to better understand the research objectives and accomplishments to date on the Yolo County bioreactor project.
- The final activity on this task was continued discussion with San Bernardino County staff on the Mid-Valley landfill project. Information to be used in developing the waste characterization report was collected by CH₂MHill.

How we are doing compared to our plan:

Work is generally proceeding as anticipated, following the delayed project kick-off. An important challenge is gaining regulatory acceptance of the Mid-Valley bioreactor landfill project. As part of this effort, EPA activity to implement an R&D exemption for bioreactors is being closely followed. The most recent contacts with EPA suggest that the R&D exemption will be finalized this summer. This regulation will be very important in successfully permitting the Mid-Valley bioreactor project.

Significant problems or changes:

There are no significant fiscal problems to report during this period and work is proceeding within Project budget. Progress and expenditures will result in project being completed on time and within budget.

What we expect to accomplish during the next period:

The primary focus of activity will be to develop the waste characterization report deliverable for the Mid-Valley landfill in Fontana, San Bernardino County. Also, the meeting summary for the project kickoff meeting and the site visit notes will be prepared. Commonwealth Team staff will also clarify the research objectives of the Mid-Valley project in light of the discussion at the kickoff meeting. Particular attention will be devoted to making certain that

the research on this Project builds on the results of work at the Yolo County bioreactor project.

Project planning activity will also take into account the fact that work will focus on conducting research at one bioreactor site instead of two. This will allow greater focus and more effective use of Commission PIER funds. A final activity planned for May is setting initial coordination activity between San Bernardino County staff and project and regulatory staff who worked on the Yolo County project.

Status of Milestones and Deliverables:

Table 1 below 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	04/07/03	1/24/03	06/26/03		10%
2.1.1b	Characterize Food or Animal Wastes to be Placed as Amendment in the Second Bioreactor	04/07/03		07/09/03		
2.1.2	Identify Amendment Source Locations for the Second Bioreactor	04/07/03		08/06/03		
2.1.3a	Prepare Conceptual Design for the First Bioreactor	06/11/03		10/23/03		
2.1.6	Coordinate with Renewables Project Advisory Committee/TAC Critical Project Review meeting	04/07/03		07/24/03		

Explanation of any Difference(s) in Schedule

Work is proceeding as anticipated.

Overall Schedule for Project 2.1:

Task Name	Duration	Start Date	End Date	Cost	2003				2004				2005			
					Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1		
Project 2.1 - Enhanced Landfill Gas Production Using Bioreactors	865 days	Mon 11/4/02	Fri 2/24/06	\$0.00												
Task 2.1.1a - Characterize MSW and Source Separated Organic	110 days	Mon 4/7/03	Fri 9/5/03	\$52,117.00												
Task 2.1.1.b - Characterize Food or Animal Wastes to be Placed	68 days	Mon 4/7/03	Wed 7/9/03	\$53,064.00												
Task 2.1.2 - Identify Amendment Source Locations for the Secor	88 days	Mon 4/7/03	Wed 8/6/03	\$40,476.00												
Task 2.1.3.a - Prepare Conceptual Design for the First Bioreactor	97 days	Wed 6/11/03	Thu 10/23/03	\$103,578.00												
Task 2.1.3.b - Prepare Test and Construction Plans for the First	61 days	Fri 10/24/03	Fri 1/16/04	\$92,334.00												
Critical Project Review Meeting	79 days	Mon 4/7/03	Thu 7/24/03	\$0.00												
Task 2.1.3.c - Prepare Conceptual Design for the Second Bioreac	85 days	Fri 10/24/03	Thu 2/19/04	\$103,578.00												
Task 2.1.3.d - Prepare Test and Construction and Plans for the S	83 days	Tue 10/28/03	Thu 2/19/04	\$92,334.00												
Task 2.1.4.a(1) - Construct and Operate the First Bioreactor	219 days	Tue 10/7/03	Fri 8/6/04	\$200,000.00												
Critical Project Review Meeting	21 days	Fri 3/5/04	Fri 4/2/04	\$22,512.00												
Task 2.1.4.a(2) - Construct and Operate the First Bioreactor	219 days	Tue 10/7/03	Fri 8/6/04	\$100,000.00												
Task 2.1.4.a(3) - Construct and Operate the First Bioreactor	219 days	Tue 10/7/03	Fri 8/6/04	\$100,000.00												
Task 2.1.4.a(4) - Construct and Operate the First Bioreactor	262 days	Tue 10/7/03	Thu 10/7/04	\$150,000.00												
Task 2.1.4.a(5) - Construct and Operate the First Bioreactor	262 days	Tue 10/7/03	Thu 10/7/04	\$100,000.00												
Task 2.1.4.a(6) - Construct and Operate the First Bioreactor	215 days	Thu 7/8/04	Thu 5/5/05	\$30,428.00												
Critical Project Review Meeting (Optional)	54 days	Tue 4/5/05	Fri 6/17/05	\$22,512.00												
Task 2.1.4.b(1) - Construct and Operate the Second Bioreactor	218 days	Mon 4/5/04	Thu 2/3/05	\$250,000.00												
Task 2.1.4.b(2) - Construct and Operate the Second Bioreactor	218 days	Mon 4/5/04	Thu 2/3/05	\$100,000.00												
Task 2.1.4.b(3) - Construct and Operate the Second Bioreactor	218 days	Mon 4/5/04	Thu 2/3/05	\$100,000.00												
Task 2.1.4.b(4) - Construct and Operate the Second Bioreactor	261 days	Mon 4/5/04	Tue 4/5/05	\$150,000.00												
Task 2.1.4.b(5) - Construct and Operate the Second Bioreactor	261 days	Mon 4/5/04	Tue 4/5/05	\$150,000.00												
Task 2.1.4.b(6) - Construct and Operate the Second Bioreactor	169 days	Fri 2/4/05	Wed 9/28/05	\$79,856.00												
Task 2.1.5.a - Prepare Final Report Outline for Project 2.1	22 days	Fri 10/24/03	Mon 11/24/03	\$12,431.00												
Task 2.1.5.b - Prepare Draft Final Report for Project 2.1	211 days	Fri 2/4/05	Fri 11/25/05	\$93,236.00												
Task 2.1.5.c - Prepare Final Report for Project 2.1	22 days	Tue 12/27/05	Thu 1/26/06	\$18,647.00												
Task 2.1.6 - Coordinate with RPAC	865 days	Mon 11/4/02	Fri 2/24/06	\$0.00												
Task 2.1.7.a - Evaluate Project 2.1: Draft Report	75 days	Wed 9/28/05	Wed 1/11/06	\$79,117.00												
Task 2.1.7.b - Evaluate Project 2.1: Final Report	19 days	Tue 1/31/06	Fri 2/24/06	\$19,779.00												

Overview of Fiscal Status:

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

Table 2: Fiscal Status By Task – Project 2.1

Task Number	Budget	Invoiced To-Date	Fiscal Status *
2.1.1 a	\$52,117	\$0	OT
2.1.1 b	\$53,064	\$0	OT
2.1.2	\$40,476	\$0	OT
2.1.3 a	\$103,578	\$0	OT
2.1.6	\$22,512	\$0	OT

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