2 EXECUTIVE SUMMARY

Energy Consumption and Baseline

This report includes the results of an integrated energy audit of the . The following table summarizes the annual electrical energy consumption and associated costs for the twelve month period of September 2006 through August 2007.

ANNUAL ENERGY SUMMARY					
Electricity					
Consumption	Demand§	Energy Cost	Demand Cost	Other Costs*	Total Costs
(kWh)	(kW)	($)	($)	($)	($)
3,770,400	742	318,112	149,160	9,334	476,607
Average Unit Costs**		$0.0844/kWh	$16.76/kW		$0.1264/kWh

§ Average maximum demand over the 12 month period.

* Other costs include service charges, power factor, and state and local energy taxes.

The total electrical energy cost for this 12 month period is about $476,607. Pacific Gas and Electric Company (PG&E) delivers electricity through one electrical meter under the E-19S rate schedule. The average historical electrical energy cost for this meter was $0.0844 per kWh, and the average electrical demand cost was $16.76 per kW, based on monthly maximum demand. The average cost of electricity was $0.1264/kWh; this includes the energy cost, the demand cost, and all other costs, including state and local taxes.

Please note that effective March 1, 2008, the electric rates for the above rate schedule has changed. Using last year's energy data under the present rate schedule, we have estimated that your facility's average electrical energy cost will be $0.0847/kWh, and the average electrical demand cost will be $15.98/kW. Unless otherwise noted, it is these anticipated average electrical cost rates that will be used in all relevant cost savings calculations in this report.

There is no natural gas consumption at this facility.

Energy Efficiency

The energy efficiency opportunities (EEOs) included in this report could save an estimated 802,439 kWh of electrical energy each year, or 21.36% of the facility's total electrical energy consumption. The EEOs could reduce the facility's electrical demand by about 91 kW. This estimated electrical energy and demand savings translates into a total cost savings of $85,352 per year. This saving represents about 17.9% of the facility's total energy costs. Total estimated implementation cost is $271,366 giving an average simple payback of 3.2 years. A summary for the savings and costs for these EEOs are listed in Table ES-1. Detailed information on these

recommendations and calculations of savings are in Section 5.1, Energy Efficiency Opportunities (EEOs).

TABLE ES-1 SUMMARY OF ENERGY EFFICIENCY OPPORTUNITIES SAVINGS AND COSTS

EEO No.	Description	Potential Energy Conserved	Demand Savings (kW)	Potential Savings ($/yr)	Implem. Cost ($)	Simple Payback (years)
	No-Cost Measures					
1.	Repair Domestic Aeration Blower Air Leaks	9,933* kWh/yr	1.1	848	0	0.0
	Low-Cost Measures					
2.	Install Premium Efficiency Motors When the Existing Motors Wear Out or Require Rewinding*	11,038 kWh/yr	1.0	1,209	1,866	1.5
	Investment Grade Measures					
3.	Install a Dissolved Oxygen (DO) Control System and Adjustable Speed Drives on the Domestic Aeration System Blowers	512,008 kWh/yr	58.4	54,566	126,000	2.3
4.	Install a Dissolved Oxygen (DO) Control System and Adjustable Speed Drives on the Industrial Aeration System Mechanical Aerators	269,460 kWh/yr	30.8	28,729	143,500	5.0
	Total Electrical Energy Savings	**802,439 kWh/yr**				
	Total Demand Savings		**91.3 kW**			
	Total Cost Savings			**$85,352**		
	Total Implementation Cost				**$271,366**	
	Simple Payback Period					**3.2 years**

* Two year incremental savings

Please note that in addition to the above measures, an additional energy efficiency measure (AEM) has been identified. Some details about this measure is presented in Section 5.2, Additional Efficiency Measure.

PG&E offers incentives for energy efficiency and/or demand response opportunities under the Non-Residential Retrofit – Demand Response (NRR-DR) program. The incentives for energy efficiency projects are subject to the following limitations:

- The sum of the above measures incentives' cannot exceed 50% of the sum of the above measures costs', and
- The total incentives for all measures cannot exceed the project site cap of $3,600,000.

PG&E also offers rebates for various energy efficient equipment under the Energy Efficiency Rebates for Your Business program. Table ES-2 lists the incentives/rebates for the proposed energy efficiency opportunities and the adjusted payback periods that include the associated incentives/rebates. The higher incentive/rebate amount of the two programs will be selected and applied for the qualifying energy efficiency measures.

TABLE ES-2 ;SUMMARY OF ENERGY EFFICIENCY OPPORTUNITY INCENTIVES

EEO No.	Description	Energy Savings	Incentive or Rebate Program and Amount	Potential Incentive ($)	Installed Project Cost with Incentive ($)	Simple Payback Period w/ Incentive (yrs)
1.	Repair Domestic Aeration Blower Air Leaks	9,933 kWh/yr	*N/A*	0	848	0.0
2.	Install Premium Efficiency Motors When the Existing Motors Wear Out or Require Rewinding*	11,038* kWh/yr	*NRR-DR $0.08/kWh*	883	983	0.8
3.	Install a Dissolved Oxygen (DO) Control System and Adjustable Speed Drives on the Domestic Aeration System Blowers	512,008 kWh/yr	*NRR-DR $0.08/kWh*	40,961	85,039	1.6
4.	Install a Dissolved Oxygen (DO) Control System and Adjustable Speed Drives on the Industrial Aeration System Mechanical Aerators	269,460 kWh/yr	*NRR-DR $0.08/kWh*	21,557	121,943	4.2
Total Electrical Energy Savings		**802,439 kWh/yr**				
Total Potential Incentives and Rebates				**$63,400**		
Total Installed Project Costs with Incentives					**$207,966**	
Overall Simple Payback Period with Incentives						**2.4 years**

* Two year incremental savings

The total implementation cost of the EEOs recommended in this project is estimated to be $271,366. The total potential incentives and rebates for these measures (in using both incentive/rebate programs) is estimated to be $63,400, shown in Table ES-2. The total cost savings of $85,352 per year will pay for the adjusted total implementation cost (including incentives) of $207,966 in approximately 2.4 years.

Demand Response

The demand response opportunities (DROs) identified in this report could reduce the facility's demand during demand response events by about 165 kW. This demand reduction would result in an annual electrical energy credit of $1,649. A summary of the demand reduction and cost savings for these DROs is listed in Table ES-3. Detailed information on these measures and calculations of savings are included in Section 6, Demand Response Opportunities (DROs).

SUMMARY OF DEMAND RESPONSE OPPORTUNITY SAVINGS AND COSTS					
DRO No. Description	Possible Demand Reduction (kW)	Implem. Cost ($)	EES (kWh)	EECS ($)	Potential Billing Credit ($)
1. Turn Off the Mechanical Aerators in the Industrial Lagoon During Demand Response Events	106.4	$0	4,498	$631	$1,064
2. Turn Off the Centrifuge During Demand Response Events	58.5	$0	1,170	$164	$585
Totals	**164.9**	**$0**	**5,668**	**$795**	**$1,649**

EES = electrical energy savings, EECS = electrical energy cost savings

Other Energy System Opportunity

The other energy system opportunity (ESO) described in this report would produce electrical energy, thus reducing the electrical energy procured from PG&E. A summary of the electrical energy production, cost savings and implementation cost with incentive as well as the simple payback period for this ESO is listed in Table ES-4. Detailed information on this opportunity and calculation of savings is included in Section 7, Other Energy System Opportunity (ESO).

TABLE ES-4 SUMMARY OF ENERGY SYSTEM OPPORTUNITY SAVINGS				
ESO No. Description	Electrical Energy Production (kWh/yr)	Potential Cost Savings ($/yr)	Implementation Cost with Incentive ($)	Simple Payback (years)
1. Install a Combined Heat and Power System	88,139	$14,994	$109,375	7.3

Greenhouse Gas Reductions

Implementation of all the Energy Efficiency Opportunities (EEOs) outlined in this report, could result in a potential total electrical energy savings of 802,439 kWh/yr. According to PG&E existing power generation portfolio, this would result in avoiding the emission of 881,255 lbs. of carbon dioxide (CO_2) into the atmosphere to produce the electrical energy. Implementation of the Other Energy System Opportunity (ESO) outlined in this report could result in potential electrical energy production, and therefore an avoided electrical energy procurement from PG&E of 88,139 kWh/yr. Similarly, this would result in avoiding the emission of 96,796 lbs. of carbon dioxide (CO_2) into the atmosphere to produce the electrical energy.

Notes:

1. Please refer to Department of Energy's (DOE) Office of Industrial Technologies' (OIT) web site (http://www1.eere.energy.gov/industry/bestpractices/) for more information on identifying plant-wide opportunities for energy savings and process efficiency as well as steam, compressed air and pump system analyses.
2. Some energy efficiency and demand response projects qualify for incentives through the PG&E Customer Energy Efficiency and Demand Response Programs. The PG&E link http://www.pge.com/mybusiness/energysavingsrebates/ has complete PG&E Program information. Section 9 has an overview of these programs and incentives.
3. For more information regarding the Demand Bidding Program, please refer to PG&E's web site at http://www.pge.com/tariffs/pdf/E-DBP.pdf or contact your PG&E Account Manager for more details regarding the program. There are other demand response programs that PG&E offers besides the recommended one in this measure. This program was chosen due to the facility being on an E-19S rate schedule and it being a voluntary program. Contact your PG&E account representative for details on other demand response programs.