

Handout #1

ecomaine
November Statement of Cash Balances

\$000's

	Actual 12 Months Ending 6/30/10	Budget 12 Months Ending 6/30/11	Actual YTD
Cash flows from operating activities:			
Net operating income	\$ 10,205	\$ 6,273	\$ 5,143
Add back: depreciation	3,887	4,000	1,625
Add back: landfill closure costs	304	-	-
Add back: Post Retirement Benefit	101	-	-
Other working capital changes	(150)	(1)	177
Net cash provided by operating activities	<u>14,348</u>	<u>10,273</u>	<u>6,945</u>
Cash flows from capital and related financing activities:			
Bank loan	750	-	(750)
Payment of interest	(892)	(751)	(194)
Repayment of long-term debt	(8,244)	(10,450)	(10,450)
Repayment of capital leases	(176)	(180)	(28)
Net cash used in capital and related financing	<u>(8,562)</u>	<u>(11,381)</u>	<u>(11,422)</u>
Cash flows from investing activities:			
Receipts of interest	66	50	10
Capital expenditures	(1,300)	(2,242)	(280)
Net cash used in investing activities	<u>(1,234)</u>	<u>(2,192)</u>	<u>(270)</u>
Net increase (decrease) in cash	4,551	(3,300)	(4,747)
Cash, beginning of period	18,424	19,524	22,975
Cash, end of period	<u>\$ 22,975</u>	<u>\$ 16,224</u>	<u>\$ 18,228</u>
Detail			
Operating Cash Reserve	-	-	-
Long Term Capital Reserve	1,673	523	1,673
Landfill Closure Reserve	-	-	-
Bond Payment Reserves	11,324	7,353	2,999
Debt Service Reserves	3,292	3,292	3,292
Other	6,686	5,056	10,264
Total	<u>\$ 22,974</u>	<u>\$ 16,224</u>	<u>\$ 18,228</u>

EVALUATION OF ELECTROSTATIC PRECIPITATOR (ESP) UPGRADES BASED ON IN-HOUSE STACK TEST FOR CADMIUM-LEAD-MERCURY-PARTICULATE MATTER

Introduction: Based on the annual Stack Test data below, an increasing trend has been observed for levels of Cadmium (Cd), Lead (Pb) and Particulate Matter (PM). In 2010 two primary actions were undertaken to mitigate this compliance concern: 1 install new electrostatic precipitator (ESP) controls; and 2 evaluate the removal efficiency of the ESP controls via a stack test for particulate matter and heavy metals.

Table 1: Percent Reduction from November 2009 Stack Test Results Compared to June 2010 Test Results

Cadmium	79%	Lead	80%	Mercury	30%	Particulate Matter	73%
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Table 2: Historical Stack Test Trends

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	June 2010*	June % Reductn	Emission Limit
A-Boiler													
Particulate Matter - (mg/dscm)	3.4	2.5	1.9	1.9	8.7	11.8	10.7	8.2	5.4	19.1	5.2	99.8	24.0
Mercury - (ug/dscm)	18.0	8.1	27.0	48.0	9.0	12.0	54.1	2.0	5.0	4.0	2.8	94.3	28.0
Lead - (ug/dscm)	40.0	18.0	26.0	35.0	41.0	51.0	101.0	143.0	180.0	360.0	72.4	99.6	400.0
Cadmium - (ug/dscm)	3.0	1.8	2.1	7.3	8.6	5.0	10.7	18.0	19.0	32.0	6.7	99.7	35.0
												* Tested on our own	Emission Limit
B-Boiler													
Particulate Matter - (mg/dscm)	5.5	1.9	3.2	6.8	12.4	3.7	13.0	11.3	5.7	16.1			24.0
Mercury - (ug/dscm)	8.0	4.5	15.0	11.0	26.0	14.0	8.9	17.0	5.0	2.0			28.0
Lead - (ug/dscm)	100.0	11.8	78.0	190.0	195.0	45.0	140.0	157.0	244.0	320.0			400.0
Cadmium - (ug/dscm)	11.0	11.0	6.9	21.0	21.0	6.0	15.2	19.0	24.0	26.0			35.0

1 ESP UpGrades: In January 2010, **ecomaine** replaced the aging Belco ESP Controls speculated to have lost their efficiency to remove particulate and installed Neundorfer ESP controls for greater particulate removal performance. In addition, the new ESPs include a software called Precipitator Optimization System (POS). The POS will record the voltage readings (kilowatts) generated during episodes of increased particulate loading. The POS is designed to create precipitator energy savings by demanding power only as needed to collect PM thus removing pollutants – Cd, Pb, Hg from the flue emissions.

2 Stack Test: In June 2010, **ecomaine** conducted an in-house stack test for PM and metals. Particulate matter is directly correlated to Cd, Pb and mercury (Hg) because PM contains these heavy metals. The sampling was conducted at the inlet ports (prior to the ESPs) and at the outlet ports (after the ESPs) to determine a percentage of removal efficiency. The test results revealed impressive reductions between the inlet data and outlet data as much as 99% efficiency in the removal of cadmium, lead and PM (99.7%, 99.6%, 99.8% respectively). We also compared the June 2010 results with the data from the last stack test (November 2009) prior to the ESP upgrades, the removal efficiencies were also significant:

Voltage data were also evaluated from the stack test in November 2009 with data from POS for the June 2010 test which revealed the precipitator power is now 2.5x higher than the pre-upgrade capacity.

Table 3: Comparison of ESP Power (kw) from each Stack Test

Power source	November 2009	June 2010
Primary	22.4 kw	55.8 kw
Secondary	17.9 kw	49.3 kw

Conclusion: The increased strength of the ESP controls due to the upgrade allows for greater removal of particulate and significantly higher capture of the metals. Performing the ESP upgrade has increased removal efficiency of Cd, Pb, Hg and PM as evidenced by the June test results and comparisons to historical tests and we are cautiously optimistic for future stack test results.